IIRF STRATEGIC YEARBOOK 2022-23

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COMMENDATIONS FOR THE BOOK

This Annual Yearbook is an excellent compilation of India's wide-ranging security issues. It deals with both the continental and maritime spheres and covers traditional as well as non-traditional security concerns of India. All articles provide deep insight and unique perspectives on this important subject. The book is most relevant for Defence and IR analysts, diplomats, policymakers, and those in the media. CASS Pune is glad to have contributed to the reader. IIRF editors and contributors deserve a compliment for their excellent work.

Air Marshal Bhushan N Gokhale PVSM AVSM VM (Retd)

Former Chief of Air Staff

Director, Centre for Advanced Strategic Studies Pune

IIRF Strategic Year Book is an outstanding collection of strategic wisdom of the best minds in the profession. Most contributors are eminent thinkers with long experience in their domain. Their essays provide remarkable clarity to some of the most complex issues confronting India and the world. It deserves its rightful place on the table of every strategic thinker and student of security studies within and outside our country. Highly recommend.

Vice Admiral Shekhar Sinha, PVSM, AVSM, NM and Bar (Gallantry), ADC (Retd)

Former Chief of Integrated Defence Staff & FOC-In-C Western Naval Command, Indian Navy

Member Executive Council MP-IDSA, Advisor CENJOWS

Member governing council of Indian Council of World Affairs, Trustee, India Foundation

The distilled wisdom of several distinguished contributors gives an overview and deep insights into the strategic challenges facing India. The book is well organised into dedicated sections and chapters dealing with specific issues. STRIVE is glad to have five of its members contributing to the book. The IIRF Strategic Yearbook is a must-read for all scholars, practitioners and thinkers alike.

Maj Gen Abhradhwaj Parmar, VSM (Retd),

President

Society for Transformative Research Integration and Veteran Empowerment

I must compliment all who have put their heart and soul into bringing out the IIRF Yearbook. It covers a broad canvas and provides insightful analysis of multiple issues of great relevance. The highly experienced contributors with domain expertise have done full justice to the range of well-chosen topics on strategy, doctrine, nuclear issues, geopolitics, and continental issues, including the Russia-Ukraine war. IIRF has carved out a special place as a credible public policy research institute within a short time and deserves wholesome praise for this Yearbook. I have no hesitation in recommending the book as a must for all libraries of universities, colleges, think tanks and institutes of higher learning.

Commodore RS Vasan IN (Retd)

Director General, Chennai Centre for China Studies

Regional Director, National Maritime Foundation, Tamil Nadu Chapter

Very heartening to note that IIRF's journey over the past few years has been extremely promising despite all the odds, including the pandemic and economic downturn. Getting professionals from various walks of life, specializations and interests, the IIRF is emerging as a key player in projecting India's story on a global platform. The broad spectrum covered by the yearbook addresses myriad subjects ranging from topics such as geo-political and geo-strategic developments to environmental challenges and maritime issues and their economic effects. My compliments to your team at the IIRF and all the distinguished contributors for bringing out the yearbook, which provides a kind of one-stop shop on contemporary issues facing all of us worldwide. I am sure the book will be of immense use to budding scholars, academicians, practitioners, and thinkers dealing with strategic issues.

Nitin A. Gokhale

Senior Journalist and Defence Analyst

Founder: BharatShakti.in and Chief Editor, StratNewsGlobal.com

FOREWORD

I am happy to note that the Indus International Research Foundation (IIRF) is publishing its Yearbook with exemplary contributions by leading experts and specialists from defence to the economy to foreign policy. This compilation is timely as the global world order is transitioning and under tremendous stress with unprecedented challenges, compounding the threats to peace, stability and security. It is a great privilege to write a foreword for this wonderful Yearbook.

The contributions to the Yearbook of a few handpicked intellectuals and learned scholars cover a vast panorama of topics concerning doctrines and strategies influencing National security and Geopolitics. The wide-ranging subjects are varied and diverse, from Foreign Relations to Military alliances, Economy to Environment, and Artificial Intelligence to Psychology, making them both thought-provoking and exciting. Most of the articles have been influenced by political and economic developments of last year and delve into India's defence and security. There are papers dealing with Grey Zone, Nuclear Warfare and Maritime Operations that explore the complex issues that need urgent attention.

Even as the existing hotspots in different geographies remain alive and are a matter of concern, the new conflicts and global challenges like climate change, terrorism and poverty and prevailing green and vaccine apartheid remain unaddressed. All these are being sacrificed at the altar of geopolitics and the hegemonistic ambitions of superpowers. Multilateralism is being supplanted by unilateralism.

The Covid pandemic, its origins, and its subsequent inability to collectively handle this once-in-a-century challenge have exposed the infirmities of rich and developing countries alike, undermining public health and social contract as one witnessed the adverse impacts on the global economy and societal fabric as well as 'Chinese Wolf warrior Diplomacy and the western hoarding mentality' subjected the poorer and underdeveloped countries to vaccine and medical apartheid. The only shining light was India which followed a 'Vasudhaiv Kutumbakam.' and provided succour and sustenance to over 150 countries during the crisis.

The 3F crisis in fuel, food, and fertilizer with the weaponisation of financial instruments by the west and the weaponization of energy and food by Russia has changed the complex of the international discourse. Emerging is the possibility of Cold War 2.0, which will be more challenging and divisive. The Russia-Ukraine war has also challenged global peace and security, impacting the world. India again has shown its strategic autonomy and adherence to a principled foreign policy predicated on peace, dialogue, diplomacy, and respect for the UN Charter as PM Narendra Modi emphasised that 'the Era of War is over'. Chairing G20, SCO and holding the India Africa Summit will provide advanced human-centric globalisation with 'One Earth, One Family and one Future' as the underlying theme.

The Yearbook is a valuable guide for world leaders, lawmakers, think tanks, strategists, researchers, defence planners, diplomats and anyone interested in International affairs and foreign relations. The articles are well-researched and curated diligently. They are objective and presented free from any political bias.

I thank all the authors for their hard work and in-depth research in preparing the articles. I commend the editorial team of Rishi Athreya, Gp Capt Raj Shekhar Mehta and Col P. Madhavan for their effort in collating the articles and editing and compiling the book. The readers will greatly benefit from the book's contents, which can serve as a great reference book. I am also grateful to the entire Team Indus for their cooperation and support in bringing out this book. My special thanks to the IIRF Americas Chapter for the financial support they extended towards publishing the book. Here I must mention Mr. Guru Sowle, President of IIRF Americas and his team for their steadfast support. Last but not least, my thanks to the advertisers who have supported this book.

I hope this book finds a well-deserved place in the book racks of prestigious libraries worldwide. It will enrich readers' knowledge and add value to their understanding of international affairs.

This compendium will provide the reader with an objective and fact-based assessment which is also the dictum and idiom of the IIRF.

Anil Trigunayat

IFS (Retd) Patron,

Indus International Research Foundation *www.indusresearch.in*

Former Ambassador of India to Jordan, Libya, and Malta

Distinguished Fellow Vivekananda International Foundation

FROM THE PRESIDENT'S DESK

It has been a little over two years since IIRF has been in existence. During this period, we have tried to knit a durable Team to attain our objectives. The journey has been arduous, but we have managed to survive. Soon after our formation, just as we were ready to take off, the COVID-19 pandemic struck, and our activities virtually came to a grinding halt.

Undaunted, we have laboured on and remained relevant in a very competitive environment. We have been able to achieve modest progress like refurbishing our website, conducting webinars, publishing articles etc. and finally, our first year book. Some of our members have also authored and edited a few books.

We have now opened our first overseas chapter in Dallas, Texas in the US which was inaugurated by the sitting US Congressman Marc Veasey. I was part of the inaugural ceremony performed with much fanfare. The chapter under the leadership of Mr. Guru Sowle is on the right track showing great promise.

It is a great privilege to write a preface for the first publication of the IIRF Year Book. The book is a modest and earnest undertaking in collating articles on geo-political issues reflecting the current global scenario and offers a peep into the futuristic trends that are likely to impact peoples and societies around the world. World leaders have an onerous universal obligation to mitigate the sufferings of billions of humans and other living beings through their mature decisions and responsible governance.

Every nation has a right to defend its sovereignty, independence, and freedom by strengthening its economy, security, and military capability. While upholding their own interests' nations at times get into conflicts with one another. The nations then get polarised and form military alliances. This leads to global conflicts in which the entire humanity gets entangled. As a responsible Think Tank, we owe it to the people to bring world leaders together through our thoughts in the form of a year book. The Year Book contains selected articles that delve into International issues with a particular focus on Indian defence and security. India today is the fastest-growing economy and emerging as a formidable military power.

The contributions to the Year Book from a few handpicked intellectuals and eminent scholars cover a vast panorama of topics mainly concerning doctrines and strategies influencing National security and Geo politics. There are a few papers dealing with Grey Zone, Nuclear warfare and maritime operations that explore the complex issues that need urgent attention. The wide-ranging subjects are varied and diverse, from foreign relations to military alliances, economy to environment, Artificial Intelligence to psychology, which make them both thought-provoking and exciting reads.

We live in a multi-polar and multi-cultural world with conflicting philosophies and ideologies. Notwithstanding the spectacular technological advances the scientific research has brought about, societies are today technology driven and are increasingly leaning towards dependence on machines. Humanity is currently managed by machines and manipulated by cyber analytics and Artificial Intelligence. These are impacting human behaviour and changing societies.

I sincerely hope that the Year Book will serve as a valuable guide for world leaders, lawmakers, think tanks, strategists, researchers, defence planners, diplomats and anyone interested in international affairs and foreign relations. The articles are well-researched and curated diligently. They are objective and are presented free of any political bias.

I thank all the authors for their hard work and in-depth research in preparing the articles. I am sure the readers will greatly benefit from the contents of the book, which can serve as an excellent reference book.

I am also grateful to the entire Team Indus for their cooperation and support in bringing out this book. Last but not least, my special thanks to IIRF Americas for their unflinching support.

I hope this book finds a well-deserved place in the racks of prestigious libraries all over the world. I am sure it will help policymakers and administrators in formulating policies in their spheres of work. I do hope that the book will enrich the knowledge of readers and add value to their understanding of international affairs. This will motivate us to bring out more such publications.

Col. Dr. Vijay Chenji (Retd)

President IIRF

MESSAGE FROM PATRON

I extend my heartiest congratulations to IIRF for coming out with the Year Book. I am very impressed that the Foundation, within two years of its inception, has been able to achieve this in spite of difficulties faced due to pandemic conditions. The book features very informative articles on various topics ranging from doctrinal thinking, geoeconomics, geopolitics, nuclear issues, maritime issues in Indo Pacific Region, Greyzone Warfare, continental challenges, and. strategic scenarios to technology.

I am sanguine that the Yearbook is an excellent reference book for all researchers, think tanks, diplomats, lawmakers, and political leaders. The readers will find all the articles useful and beneficial in the pursuit of their interests in their respective fields.

I wish IIRF success in all its future endeavours and strive to achieve many such milestones in the years to come.

Lt Gen DB Shekatkar PVSM AVSM VSM (Retd)

Chancellor Sikkim University,

Former Director General of Perspective Planning at Army HQ,

Former Member "Expert Group" Indo-China boundary dispute

Former member of Indo-US Defence Cooperation and Strategic Partnership initiatives.

INDUS INTERNATIONAL RESEARCH FOUNDATION
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INTRODUCTION TO IIRF

How We Started

IIRF commenced its journey in January 2021 when the world witnessed complex issues related to international politics of power transition, economic upheavals, religious fundamentalism, pandemic and environmental challenges causing sharp polarisation of ideologies and conflicting views.

In its foreign policy profile, India was moving from the sidelines to the mainstream of the world's leading countries. In the transition to a new engagement with the international economic order, several challenges were emerging, creating a space for an independent forum and indigenous think tanks that could critically examine the problems facing the world and the nation to help develop coherent policy responses. IIRF was formed accordingly to bring together leading Indian thinkers, strategists, economists, and policymakers to put their heads together to formulate broad policy responses to the challenges faced by our generation.

What We Are Today

Driven by the above idea, IIRF, over the past few years, has been trying to bring requisite expertise from all corners of the world, comprising eminent professionals from various walks of life, to participate in the making of the India story. Shifting from focusing only on domestic issues, IIRF strives to acquire a global outlook and forge global partnerships.

Therefore, it tries to build political and policy consensus that gives India its international perspective. True to its motto, IIRF aims to provide a forum for voices cutting across geographies and human boundaries. It is this diversity of thought, so unique to Indian tradition and ethos, that IIRF seeks to transmit to the world and bring dominant global debates to India.

The Vision

IIRF seeks to reach out to the policymakers by initiating debates, producing literature by domain experts, project works and reports offering independent analysis and solutions. IIRF visualises India to be well poised to take up its legitimate place in the world, a role in which it will strive to contribute positively towards a stable and sustainable multipolar world order based on openness, fairness, and cooperation, without domination, to uphold democratic and liberal values.

IIRF tries to help India discover its own choices conforming to our traditions and value system. It tries to shape global debates in a non-partisan, independent, well-researched and analysed manner by taking inputs from all quarters to help decision-makers in governments, business communities, academia and civil societies worldwide.

IIRF's vision is to invest in credible research work that can help build the thought process of the decision-makers of today and tomorrow.

Gp Capt Raj Shekhar Mehta, SC (Retd)

General Secretary
Indus International Research Foundation
New Delhi, India.
www.indusresearch.in

PATRONS

Lt Gen DB Shekatkar PVSM AVSM VSM (Retd)
Chancellor, Sikkim University and member of India-USA Defence Cooperation and Strategic Partnership initiatives

Ambassador Anil Trigunayat IFS (Retd)
Former Ambassadors to Libya, Jordan and Malta. Also served as the Dy Chief of Mission in Moscow.

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Lt Gen Arun Kumar Sahni, PVSM, UYSM, SM, VSM (Retd) Former Army Commander, Indian Army, and Present President, Information Security Council of India

MESSAGE FROM PRESIDENT, IIRF AMERICAS

Launched in January 2021 in India, Indus International Research Foundation (IIRF) achieved a significant milestone of establishing itself up in the Americas sooner than expected. Thanks to the drive of Col Vijay Chenji, one of the founding members of IIRF, who became largely instrumental in making it happen in America. Equally important was the undiluted support we had from our members, patrons, and advisors of the IIRF governing board both in India and America.

September 25, 2022, witnessed the formal inauguration of IIRF Americas in the presence of Congressman Mark Veasey and others. Little did we know in 2020, when the IIRF was conceived in India, that the foundation would expand beyond India so quickly. Technically IIRF Americas enjoys an independent status; however, in practice, it owes its US presence to IIRF India, where it all began. Expanding into the United States could not have been timed better. With the shifting Geo-Political situation coupled with evolving changes in the economic and security environment in the world, IIRF is uniquely positioned in America to make a deep impact on the Indo-US collaboration, economy, trade, and other areas of cooperation. As a think tank, we are doing our bit to promote thought leadership and provide facilitation to leaders and policymakers and other stakeholders in forging new areas of international cooperation to bring peace, harmony, progress, and prosperity to the world.

IIRF America's vision is to become a credible think tank in USA that can support national and international interests of both the countries. Though we extend natural support to grassroot level Indian immigrant students, scholars, authors and intellectuals, our core focus in America remains to be a catalyst to Indo-US collaboration in business, economy, and other sectors.

IIRF Americas, is greatly supported by its founders, patrons, advisors, members and well-wishers and my special acknowledgements goes to the IIRF Americas founding board members i.e. Raghu Ganapathy, Sridhar Krishnan, Raj Nalla and Mary Louise Luczkowski for their support in giving IIRF a great start in the United States.

Guru Sowle

President IIRF, Americas

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Mr. Sridhar Krishnan - Vice President

Mr. Raghu Ganapathy - Secretary and Treasurer

Ms. Mary Louise Luczkowski - Director, Public Relations

Mr. Subu Goparaju

Mr. Raj Nalla

Mr. Shital Thakkar

Mr. Michael Clingan

SPECIAL REPRESENTATIVE OF IIRF, INDIA, ON BOARD OF IIRF, AMERICAS

Col Vijay Chenji, Special Member representing IIRF, India

IIRF ADVISORY BOARD (AMERICAS)

David Carlebach

INTRODUCTION AND EDITOR'S NOTE

With pleasure, IIRF introduces the IIRF Strategic Yearbook 2022-23. This first edition of the Yearbook covers the last year's events with articles in seven sections. India, with its unique geography, faces multifaceted challenges. While on the one hand, it is part of the Asian Continent, on the other, it is also a major maritime power in the Indo-Pacific. This book seeks to address the challenges both in geographic and thematic terms.

Strategic Scenario

It is vital to understand the strategic scenario facing India, its neighbourhood, and the larger world. The first article by Lt Gen Arun Kumar Sahni (Retd) is titled Geopolitical Review of the Year. This Review gives an overview of major global events. It sets the scene in which the remaining chapters are written. The following article by Lt Gen PR Shankar (Retd) is titled India's Complex Strategic Environment. It examines the immediate neighbourhood and its impact on India. The third article in this section by Maj Gen G. Murali (Retd) is titled National Security Strategy Post Covid-19: A Revised Calculus examines the Covid Pandemic and its impact on security and foreign policy with solutions given for India. The Covid-19 pandemic has been the greatest challenge of recent times.

Doctrinal Thinking

An important aspect of foreign and defence policy is doctrinal thinking. The creation of the post of CDS in 2019 was a watershed in India and has significantly impacted doctrinal thinking in India. The first article in this section by Brig LC Patnaik (Retd) is titled Role of the Chief of Defence Staff in the context of Civil-Military Relations in India. The following article by Maj Gen Ajay Kumar Chaturvedi (Retd) is titled the Higher Defence of War in India. It examines the entire gamut of civilian and military structures governing higher defence.

Nuclear Weapons

Nuclear Weapons are perhaps the greatest threat to global peace and stability. India faces two hostile nuclear-armed neighbours. It faces threats on land and sea in the immediate and extended neighbourhood. The first article in this section by V Adm Vijay Shankar (Retd) is titled Maritime Nuclear Power Challenges and Strategic Maritime Power. This article addresses the security challenges India faces in the maritime domain that could involve nuclear weapons. The second article by Maj Gen Mandip Singh (Retd) and Col Vishal Jaitly, the only serving officer in this Yearbook, is titled Pakistan's Tactical Nuclear Weapons:

A Calculated Bluff. The authors examine the nuclear scenario in the sub-continent and the danger of using TNWs by Pakistan. This superb article addresses Pakistan's continued sabre-rattling and opines Pakistan's true intentions.

Grey Zone Warfare

Sub-conventional methods of war are an increasing danger in the world. India and its neighbourhood face this too. The first article in this section by Lt Gen Ravindra Singh Panwar (Retd) is Grey Zone Operations in the Info-space Dimension: Call to Action for the Indian Armed Forces. This article explains Grey Zone at conceptual and operational levels. The next article by Lt Gen Dushyant Singh (Retd), titled Israel:

The Master of Grey Zone Warfare and Lessons for India, is a case study of a country considered adept at such operations. The next one, a rare and original article by Col Vijaykant Chenji, is titled Artificial Intelligence and Consciousness. It studies the concept and pitfalls of AI, and its applicability, including in war.

Continental Challenges

India has a long continental land border with several neighbours. These cover varied landscapes, including high mountains, plains, river basins, forests, and deserts. Further, the extended contiguous land mass covers parts of Eurasia, the Middle East, and North Asia. The first article by Lt Gen Dushyant Singh (Retd) is titled Russia – Ukraine Crisis and Lessons for India. This article examines the Russia-Ukraine war, its impact and lessons for India. The following article by Air Mshl Vijay Pal Singh Rana (Retd) is titled Water Security: Internal and External Dynamics of Future Politico-Military Conflicts. Water security for India vis-à-vis neighbouring countries is analysed. The third article by Col P Madhavan (Retd) is titled An Analysis of the Infrastructure in Tibet. It discusses threadbare Tibet's (and surrounding region's) air, road, and rail infrastructure and its implications for India. The fourth article by Col Nilesh Kunwar is titled Who Derailed Pakistan. The misgovernance by the Pakistan Army is so wonderfully discussed. The final article in this section by Air Mshl Amit Tiwari (Retd) is Afghanistan: Future Written in History. It discusses the current scenario in Afghanistan and India's perceived role.

Maritime and Indo Pacific

India has a vast coastline both on the western and eastern flanks. There are also the maritime territories of Lakshadweep in the west and Andaman and Nicobar Islands in the east. Given its location in the middle of the Indo-Pacific space and being one of the largest countries in the region, India faces varied challenges and opportunities in the maritime sphere. A longstanding lacuna in India's strategic thinking has been a continentalist mindset and sea blindness. The first article in this section is by V Adm MP Muralidharan (Retd), titled Non-Traditional Maritime Threats discusses threats besides other nation-states in the maritime sphere and suggests responses from India. The subsequent article by Mr. Rishi Athreya, titled AUKUS Quad and options for India, discusses the creation of the new AUKUS pact, the impact on the Northern Quad and options for India. The last article by Gp Capt AV Chandrasekaran is titled India Taiwan: Way Forward. This paper studies the relations between India and Taiwan.

Geoeconomics

Economic considerations are essential in international relations and global security. This section seeks to address some of these issues. The first article by Gp Capt Raj Shekhar Mehta (Retd), titled Rationale Behind the Belt and Road Initiative, discusses the BRI in the context of the USA and China rivalry. The second article by Gp Capt R Srinivasan, titled Sagarmala Opportunities and Challenges, studies maritime management in India under the Sagarmala Scheme. The third article by Mr. Sunil Pant, an Afghanistan Expert and an earlier advisor of Ghazanfar Bank, is titled Economic Aspects of the Afghanistan Crisis. He addresses the economic fallout of the Afghanistan crisis in detail. The last article by Lt Gen CA Krishnan (Retd) is another rare one titled Rare Earth: Overview & an Indian Perspective. This paper analyses the global Rare Earth Elements scenario from an Indian perspective.

Editor's Note

The editors want to thank all distinguished contributors for the articles. Each article presents the reader with the basics of the subject and, with maps and charts, explains the details of each subject extremely well. They also provide authoritative, valuable, easy reference material to the interested reader. IIRF keenly looks forward to comments and feedback from readers. We wish everyone happy reading!

Lt Gen C.A. Krishnan, PVSM, UYSM, AVSM,

Editorial Adviser

Rishi Athreya,

Col P Madhavan,

Gp Capt Raj Shekhar Mehta, SC

Editors

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THE YEAR IN REVIEW

The year 2022 has been significant, as major events have polarised world opinion, impacting the existing geopolitical alignments and security imperatives, reinforcing the contours of the emerging polycentric world order. The global order has indisputably been in a state of transition, especially in the last decade, with the rise of an assertive and dominating China, in competition with the current superpower, the USA, Talibanisation of Afghanistan with its impact on global security and a shift in the economic centre of gravity from the Euro Atlantic to the Indo Pacific. With the Indo-Pacific becoming an area of contestation, the USA and leading liberal democracies have forged groupings of like-minded countries like QUAD, AUKUS, I2U2 etc., to promote economic resilience and counter the growing influence of China. Also, the economic shift has highlighted the underrepresentation of the emerging economies of the developing world in the global rule-making bodies and also the inadequacies of global Institutions like UNSC, WTO, IMF and the various steering bodies of the UN to address the realities of the 21st century. Also, the major multilateral Institutions are currently structured with an inherent bias toward the interests of the developed world. They are not responsive to the socio-developmental challenges of the Global South. This has contributed to the growing importance of multi-party forums like SCO, BRICS and RIC, steered by China, India, Russia, and other economically robust nations of the developing world. They, in a way, redress the imbalance and highlight the need for the long-awaited reform of institutions of global governance and underscore the need for inclusivity of leading and emerging economies globally.

While the world was coming to grips with the resultant impact of the Pandemic, with heightened social tensions and economic dissonance, geopolitical alignments were further strained by China's growing political stature, economic leverages, technological achievements and aggressive global outreach, its competitive contestation with the USA and the far-reaching impact of ongoing Russia-Ukraine war. These events have accentuated polarisation amongst nation-states by forcing the middle and low-income countries to rebalance their strategic interests, vis a vis US and China. The recently concluded CCPs 20th national congress, from 16 to 22 Oct 22, a five-yearly seminal event that indicates China's future growth trajectory, has conclusively confirmed Xi Jinping's stranglehold on China, with approval for his third term and nomination of his candidates for the Politburo and its 'Standing Committee', the party's most powerful decision-making body. Implying the continuation of the Xi road map in pursuing the Chinese dream, with offensive actions in Ladakh, the South China Sea and Taiwan, relentless pursuit of technological dominance, honing of PLA's muscle power and use of its economic might to coerce, support cum dominate International Institutions. There is likely to be a continuation of its domestic policies of 'zero tolerance covid' and a resultant economic slowdown with a global impact. Also, rapprochement with

the USA is becoming a distant dream, as it has recently 'upped the ante' by banning all semiconductor chip makers from trading with China. This has enlarged the chasm for reconciliation and early restoration of disrupted supply chains, with an adverse impact on globalisation.

Existing global political, economic, and social stress was further exacerbated when in February 2022, Russia launched its '*special military operations'* in Ukraine. The battlelines of this were drawn in 2015, with the breakaway DONBAS region seeking a merger with Russia, post the Crimean reunification in 2014.

The trigger for this conflict was the rising 'anti-Russia' and 'pro-Europe' lobby in Ukraine, led by President Zelensky and his plans to expedite joining the Euro Atlantic military alliance- NATO, a grouping of the 'cold war' era, which compounded Russian security sensitivities. This limited military operation to assuage Russian security concerns has muted from a 'slugfest to a festering conflict, with the end nowhere in sight. The resultant imposition of sanctions by the US and the developed world in Russia has had far-reaching consequences, triggering volatility in energy prices and widespread food shortages. The immediate impact is the ruin and devastation on the people and infrastructure of Ukraine.

Whatever the outcome of this East–West conflict, it has adversely impacted world peace and heralds a significant realignment in the global security architecture. It has advanced geopolitical turbulence due to tectonic policy and the positional shift of some of the leading nations of Europe. Germany has declared its intentions to re-arm itself militarily, a change from its passive status since the end of the 2nd World War. It has pledged to spend 2% of its GDP on upgrading its defence forces. It is also reviewing its 'energy policy' that was hinged on major oil and gas imports from Russia. Scandinavian countries that had always abstained from joining NATO due to their geographical proximity to the erstwhile Soviet Union have led to both Sweden and Finland formally confirming their willingness to join NATO. They completed the accession talks in July 2022 and affirmed to meet the political, legal and military obligations and commitments of NATO membership. Italy has also announced an increase in its defence budget. Bosnia plans to join NATO, while Kosovo is seeking a permanent US military deployment in its territory. NATO's eastward expansion, including erstwhile East European countries, is back under contention. NATO, for the first time, is forward deploying forces to the Baltic states. German troops are moving to Lithuania and Slovakia, with their air and sea assets deployed in Romania, the Baltic, and the Mediterranean. France is also moving forces to Romania. Switzerland has forgone its neutrality and joined the EU in imposing economic sanctions, targeting Russian banks and assets. Europe, with the coming of winter for the first time, is divided on the issue of Russian oil and gas. Turkey, after over five decades, activated the 1936 'Montreux Convention', which closed the Turkish Straits to warships. Significantly restricting the movement of Russian naval assets from the Mediterranean into the Black Sea and influencing military operations in Southern Ukraine.

These acts of military transition in Europe and events unfolding in the Indo-Pacific landscape, both due to the USA's 'Indo-Pacific strategy' and Chinese belligerence, have led to increasing militarisation in South Asia, SE Asia, and the Far East. Japan has revoked its laws for increasing its military capacities, Taiwan is increasing its military arsenal, and the US has been vocal in deterring any Chinese misadventure against Taiwan. 'Collaborative security' has become the new mantra for meeting common security challenges of 'freedom of navigation' in the South China Sea, safeguarding SLOCs, and protecting the interest of the disputed island territories and smaller nations of the Indo-Pacific region.

Undoubtedly, a highly militarized environment increases the probability of local skirmishes escalating into major confrontations. Especially when the threat landscape is increasing due to unforeseen events like climate change-initiated migration, the criticality in the availability of essential resources, including water or the adoption of unorthodox pressure tactics by nation-states by conducting 'Influence operations' through cyberspace and EW spectrum, to achieve political objectives. It would be a fair assessment that the combined changes in Europe's military architecture and militarisation in the Indo-Pacific have vitiated the global security environment, demanding greater fortitude by the nation-states. In addition, the continuing isolation of Russia is strengthening the anti-US nexus of China- Russia- Turkey and Iran. These are early indicators of 'bloc politics' emerging yet again, in a new avatar, with global overtones.

As stated by a former foreign secretary in an interview, the ongoing conflict is likely to result in greater dovetailing between the Russian and Chinese ideas about the Indo-Pacific and the Quad. There is all likelihood that China would ask Russia to support its vision of the Indo-Pacific for its support for Russian resistance.

The disruption in the supply chains emanating from China has led to nation-states and multilateral groupings initiating measures to economically decouple from China and build greater resilience by diversification. It has led to counter-globalisation initiatives, with countries looking inwards for self-reliance for critical elements while looking at opportunities to provide a reliable alternative to Chinese manufacturing. Economic turbulence and political strife are likely to continue well into 2023, in the nations of the developing world, in a manner similar to what has been witnessed in Sri Lanka. Its economic crisis mutated into a political uprising. Pakistan continues to be financially fragile. Bangladesh and Nepal continue to meet the challenges of the pandemic. However, there will be periods of relative calm that will throw up economic opportunities. Events like the forthcoming visit of the German chancellor Mr. Olaf Scholz to China in November could inspire a relief rally for both Chinese and German assets. The US midterm election results are likely to steer in a favourable growth environment. It would be a fair assessment that Geo-economics will be in focus for the foreseeable future, and events like the G 20 summit in Indonesia at the end of November 2022 will be important for economic well-being. Nation will continue to aggressively pursue formalising FTAs and trade treaties for their economic well-being and to operate with certainty in this volatile environment.

The world this year repeatedly experienced the devastating impact of global warming and the resultant climate change. The ravages caused by unprecedented droughts, rains, floods, and forest fires, in hitherto for moderate climate regions, were with greater frequency and intensity. The seasonal climate pattern has shown signs of change that will, in the long run, impact the traditional cropping pattern, while the increased pace of melting glaciers and rising sea levels will cumulatively contribute to global food and water shortages. These events have highlighted the need for the nations to prioritise the climate change goals decided by the international treaty on climate change, called the Paris accord of 2015. The agreement covers climate change mitigation, adaptation, and climate finance, including the use of technology to facilitate the same. The war in Europe has once again whitewashed the 30% emission reduction goals set to be achieved by the developed world by 2025. The laudatory promises of working towards 'net zero emissions' finalised at COP 26 now seem 'just talk'. The ongoing COP 27 in Egypt will hopefully lead to rationality and a prioritised road map for meeting the collective climate goals.

For India, there has been relative calm along its external frontiers, with minimal progress in its border talks with China. It has proactively extended support to countries in its neighbourhood and that of the developing world to meet the health and financial challenges they are experiencing in the aftermath of the Pandemic. A true reflection of its civilizational mooring of *Vasudhaiva Kutumbakam.* Internally it has continued to make progress on its policy of *Atmanirbharta*.

In conclusion, it would be fair to state that the world is experiencing interesting times. The future will be of those with perseverance, clarity of vision and resilience in a nebulous global environment.

Lt Gen Arun Sahni, PVSM, UYSM, SM, VSM

Former Army Commander, IA

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PART 1

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Section 1

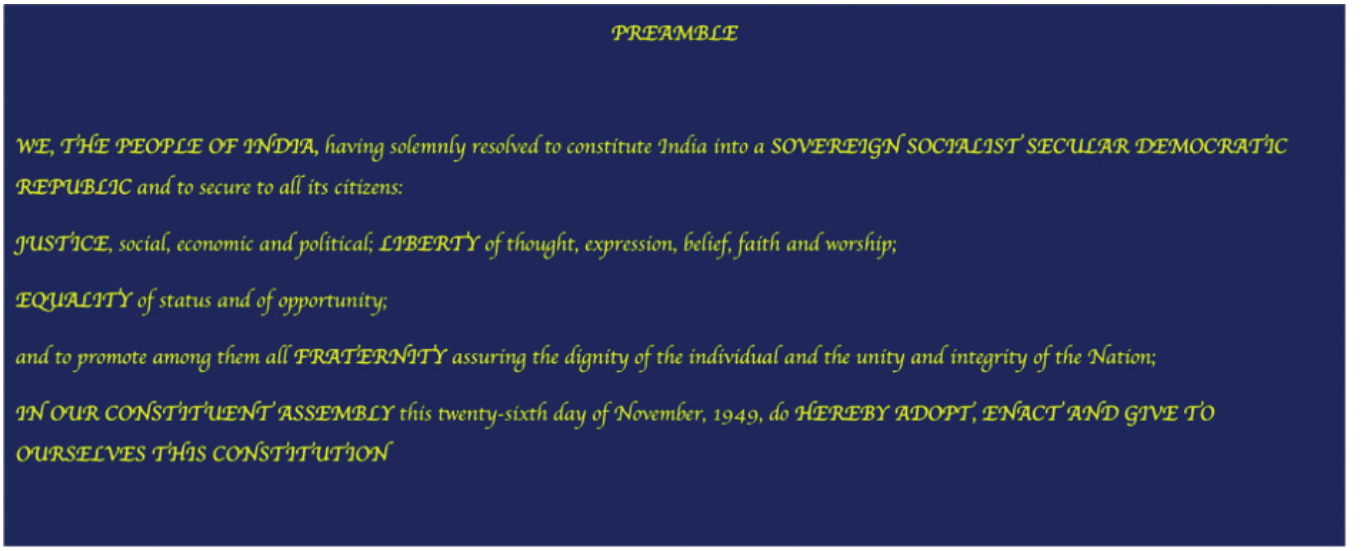
INDIA'S COMPLEX STRATEGIC ENVIRONMENT

Lt Gen PR Shankar



India is a civilisational power with deep-rooted cultural values. It sits at the crossroads of global continental and maritime flows due to its dominant location in the Asian Landmass and the Indian Ocean Region (IOR). Its history, culture and outlook have been impacted by foreign dynastic and colonial rules spanning centuries during which there has been copious ingress and egress of religion, trade, and conflict through the continental or maritime routes. Resultantly, India has always lived in a very complex and challenging strategic environment. In post-independence modern times, the complexity is driven by many factors. These include a rising India's national interests, global trends, and the geopolitical equations India maintains with its neighbourhood and the world at large. This has also led to a constant debate on whether

to adopt a continental or maritime strategy. There is also an emerging fact that India is central to many facets of global affairs. Defining the challenging environment and outlining India's strategic complexities are interesting in this context.



PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC and to secure to all its citizens:

JUSTICE, social, economic and political; LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity;

and to promote among them all FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation;

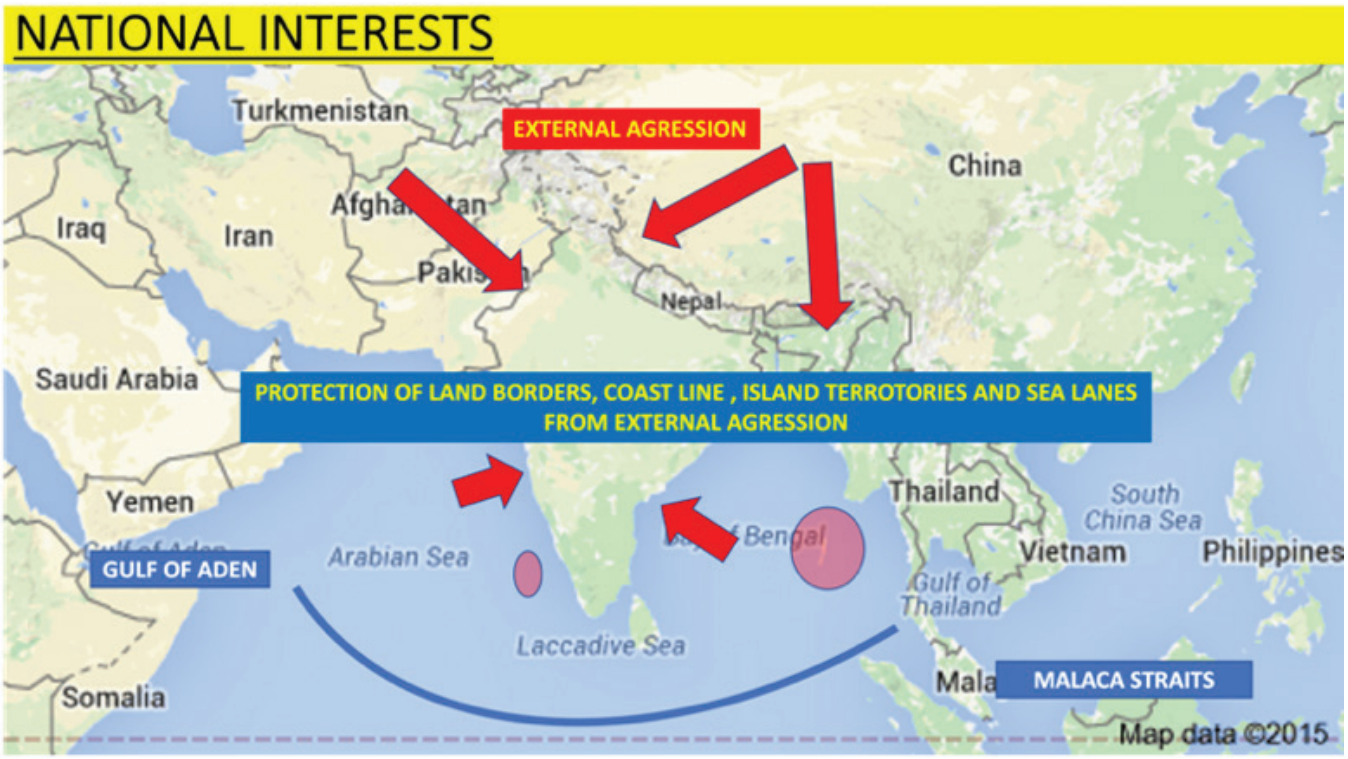
IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION

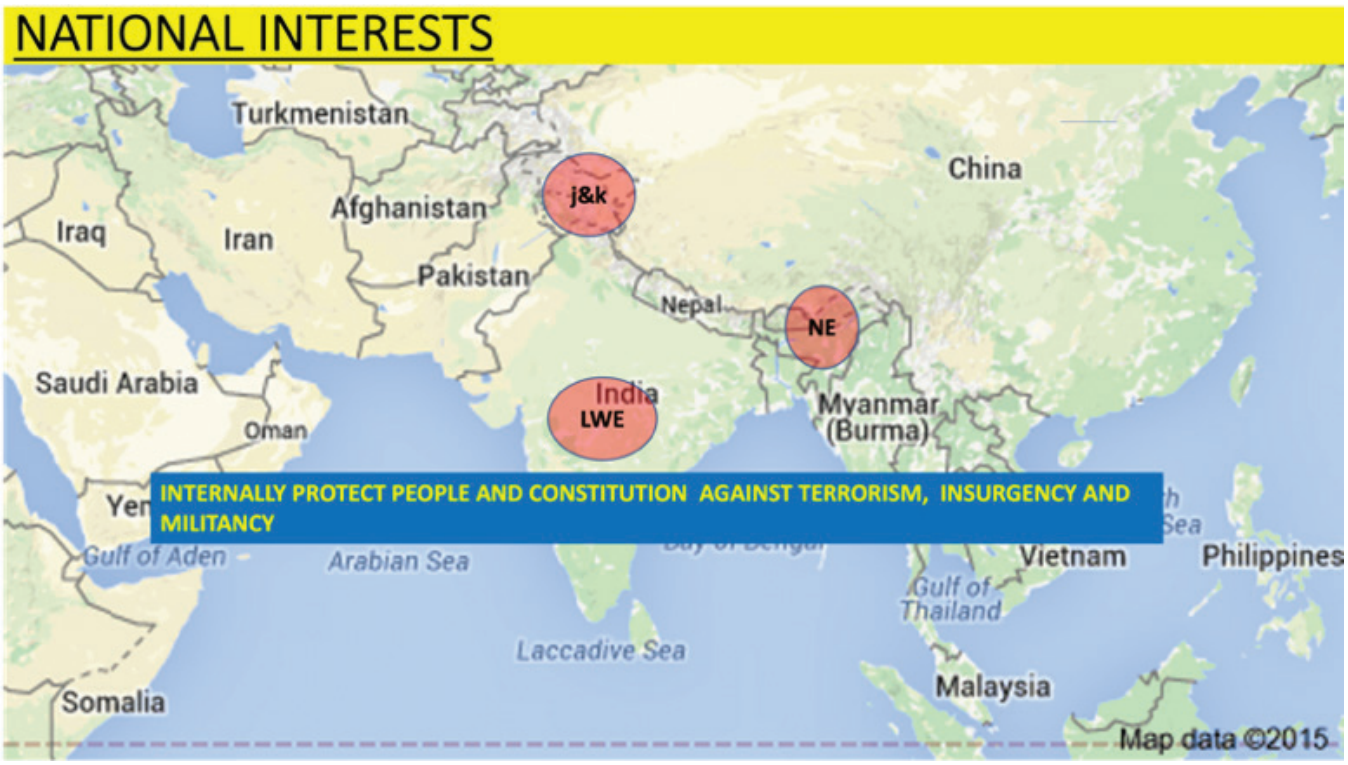
1.1 India's National Interests

India's national interests shape its geostrategic outlook. These have a profound impact on the environment surrounding it. While India's core national interests are not laid down formally, they are enshrined in the preamble of its constitution (Government of India, 2021). These include the protection of land borders, coastline, island territories and sea lanes from external aggression from land, sea and air. This implies that India must guard its territorial integrity and sovereignty against its traditional adversaries i.e. China and Pakistan, and unknown adversaries who might manifest themselves through the IOR. India must also protect its national maritime interests in the Indian Ocean Region, which extends from the Gulf of Aden to the Malacca straits (Indian Navy, 2015).

Beyond that, India has to protect its people internally and uphold its constitution against manifold anti-national forces, elements and trends, which include terrorism, extremism, insurgency and militancy. (Headquarters Integrated Defence Staff, 2017, p. 9).

India has always successfully protected Indians in 'out of areas' during contingencies (Indian Navy, 2016). This includes evacuating stranded people from troubled areas/ conflict zones like Kuwait, Yemen, and Ukraine and during natural disasters like in Wuhan during the pandemic.


NATIONAL INTERESTS
Turkmenistan
EXTERNAL AGRESSION
China
Iraq
Iran
Nepal
Saudi Arabia
PROTECTION OF LAND BORDERS, COAST LINE , ISLAND TERROTORIES AND SEA LANES FROM EXTERNAL AGRESSION
Yemen
Thailand
South China Sea
GULF OF ADEN
Arabian Sea
Vietnam
Philippines
Gulf of Thailand
Laccadive Sea
Somalia
MALACA STRAITS
Map data ©2015


NATIONAL INTERESTS
Turkmenistan
China
j&k
Afghanistan
Iraq
Iran
Pakistan
Nepal
NE
Saudi Arabia
India
LWE
Myanmar (Burma)
Oman
INTERNALLY PROTECT PEOPLE AND CONSTITUTION AGAINST TERRORISM, INSURGENCY AND MILITANCY
Gulf of Aden
Arabian Sea
Vietnam
Philippines
Gulf of Thailand
Laccadive Sea
Malaysia
Somalia
Map data ©2015



NATIONAL INTERESTS



1.2 Global Trends

Socio-Economic Shifts. The shift in global power from West to East is now an apparent reality and is no more a trend. Economic power has shifted East. Diplomatic power is also shifting, with military power soon to follow.

As the global population keeps increasing, demographic changes are taking place quickly worldwide due to migration and varying birth rates. Populations in Western societies and China are ageing at unprecedented rates against younger populations of many African and Asian nations. Increased development and high growth rates in many societies have given rise to rapid urbanisation, creating social tension and conflicts. All these trends constantly give rise to new geostrategic, geopolitical and geo-economic challenges. India is at the centre of these major population centres where these macro socio-economic shifts are happening. A demographic change-conflict cycle is on the cards, especially in the densely populated South and East Asian regions, directly affecting the Indian geostrategic outlook. A large part of the changing trend is driven by the rise of disruptive technologies, shaping the geostrategic outlooks of all countries.

Last but not least, climate change and resource scarcity give a whole new dimension to the geostrategic outlooks of nations. India is at the centre of these trend lines (Headquarters Integrated Defence Staff, 2017, pp. 8-9).



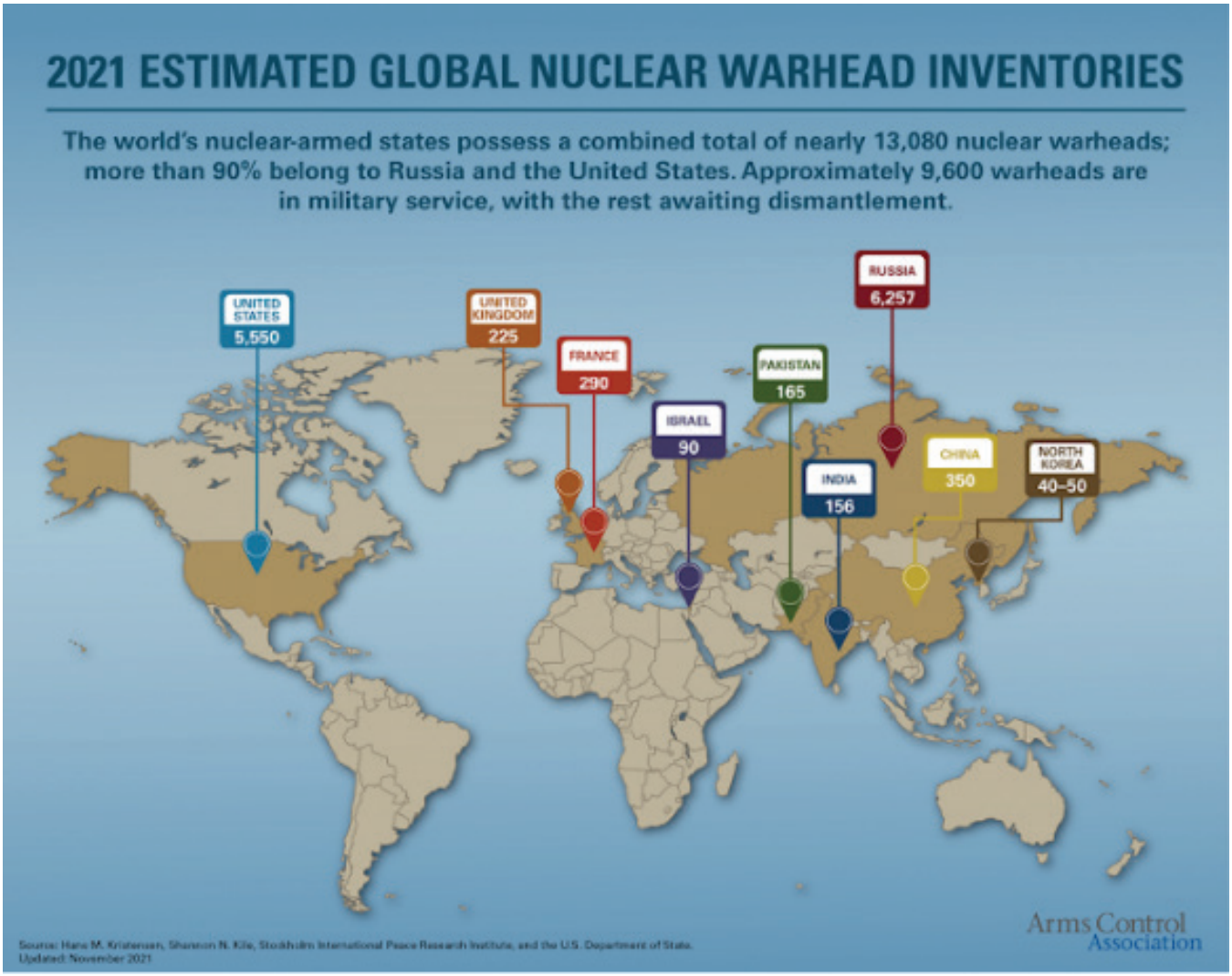
Conflict Trends. A look at the Conflict Zones of this century in East Europe, West Asia, the Middle East, South Asia, Africa and the Indo-Pacific region indicates the geostrategic complexity in which India exists. The challenge is acute since each conflict results from a different geopolitical phenomenon. There is a discernible shift from the conventional warfare of the last century to the hybrid and humanised conflicts of this century. These are ideologically driven and, more often than not, manifest in the form of asymmetric and grey zone operations. (Indian Army, 2018, p. 10).

Many of these conflicts, including the current Russo-Ukrainian conflict, will drive defence expenditures on an upward trajectory worldwide. The Russo-Ukrainian conflict has brought war to the doorstep of Europe after seven decades. It will impact the world order since all the big powers are interested parties in this conflict. The UN is becoming increasingly irrelevant, and we are entering an era of deglobalised uncertainty and economic turmoil. There is also a changing nuclear environment in the offing. This change will also drive a change in big power politics and geopolitical re-alignments. All these factors will contribute to complicating India's strategic environment.



Disasters. An analysis of disasters since the turn of the century zones indicates that most major earthquakes and floods have occurred in and around Asia, with India as the geographical centre. Very importantly, these disasters have occurred at a rate greater than those at which conflicts have taken place and with far greater devastation. Humanitarian Assistance and Disaster Relief operations, whilst humanitarian, also give rise to global competitiveness. Many geopolitical trends and alignments are the results of this factor.

The 2004 Tsunami gave rise to the QUAD. The pandemic originated in Wuhan in 2019 but has yet to complete its strategic impact.



Nuclear Trends. The recent overt threat of Russia's use of nuclear weapons in Ukraine has the potential to upend the uneasy international nuclear balance. Two trend lines emanate from this situation. The first trend line is that nuclear coercion can and will be used by established major powers to enforce their expansionist designs as Russia has done now. The second trend line is that nations aspiring for nuclear weapon status will be even more motivated to attain that status since they will see it as the only way to guarantee their sovereignty against expansionist designs or external interference. Overall the result will be that, in addition to countries which have nuclear capabilities as shown in the map, Iran, Syria, Saudi Arabia, Libya, Taiwan, South Korea, Japan, Argentina, Brazil, and South Africa, are the nuclear dark horses with some degree of nuclear aspirations (past and present) (Arms Control Association, 2022). In all likelihood, the international nuclear equations are going to get rebooted. India will be forced into a major rethink of its nuclear policies.



India's Geopolitical Mandala: India's complex geostrategic environment is best understood in Chanakya's 'Mandala' theory against national interests and established global trends. Chanakya's Mandala principle requires considering our geopolitical equations in the immediate, near, and intermediate neighbourhoods (Bisht, 2016). These must be extrapolated with the strategic relationships India has developed beyond its neighbourhoods. However, at the core, one has to examine the internal issues which drive the complex strategic environment in which India exists.

Immediate Neighbourhood: India's immediate neighbourhood comprises Pakistan, China, and the Indian Ocean Region. India's equations with Pakistan and China, which are increasingly revisionist, have been directly adversarial since all three nations attained their respective independences. Notwithstanding internal issues confronting Pakistan and China, both are over-militarised and pose a constant threat/challenge to India individually and in a collusive manner. An intense nuclear environment also characterises the immediate neighbourhood. China and Pakistan also pose a long-term proxy/hybrid/grey zone multidimensional threat to India (Indian Army, 2018, pp. 2-3). Historically this is the most complex strategic situation even in global parlance. In this context, it will be relevant to examine each adversary.

Politically it remains constantly in a state of instability. It is also a unique environment where the Army calls the shot behind a shaky civilian façade. State and non-state entities are increasingly radicalising Pakistan competitively. Its Kashmir fixation and identity crisis of 'not being India' make it a dangerous adversary. It will remain proximally tethered to China.



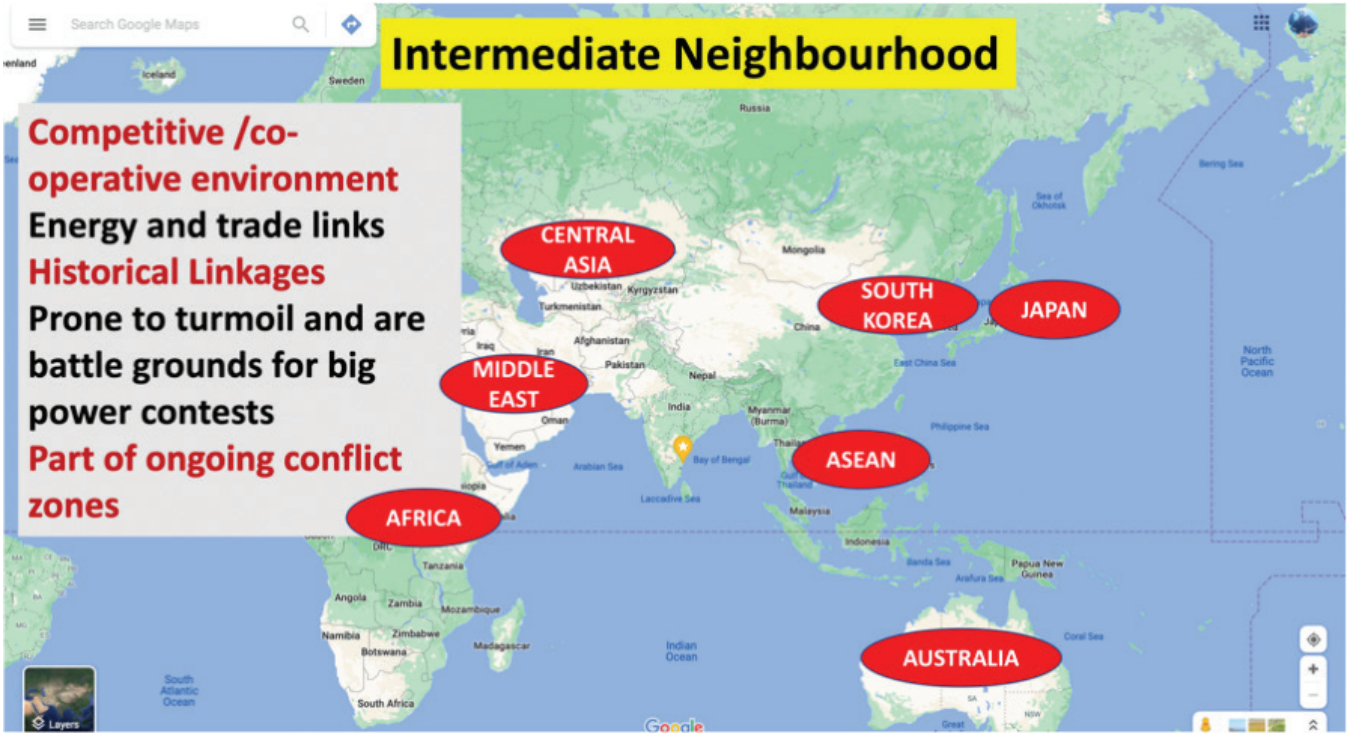
China, which till recently was seen to be rising, is suffering from wobbles emanating from a slowing economy, a declining population, and a revisionist leader aspiring for a lifetime in power. However, China is increasing its military capabilities at an unprecedented rate. Its three central geostrategic goals are to be a global superpower by displacing the USA, annexing Taiwan by either force or peacefully, and keeping India, its next competitor, down. Keeping India down could be through assertive salami slicing along the LAC, expanding its influence in the neighbourhood /IOR or direct interference through India's internal political fissures. An indebted Pakistan will remain China's catspaw against India. For the foreseeable future, China will be India's foremost geostrategic challenge.

Near Neighbourhood: India's nearby neighbourhood comprises Afghanistan, Nepal, Bhutan, Myanmar, Bangladesh, Sri Lanka, and Maldives. These nations are prone to periodic turmoil, internally and externally. Currently, Afghanistan, Myanmar and Sri Lanka are going through tough turmoil. Afghanistan, under the Taliban, seems to be deteriorating. With the international focus on Ukraine, it will be a forgotten dark hole. It has opportunities, provided India can take the initiative to overcome the challenges. Myanmar, always a complicated nation, has slipped into its historical cycle of isolation and internal violence under the rule of the Tatmadaw.

A stable Myanmar is critical to India's security. More importantly, India needs to take definite steps to reduce the growing Chinese influence in Myanmar. India has recovered its lost position in Nepal, Bangladesh, Sri Lanka and Maldives to some extent. However, it cannot sit back on its gains since China is continuously striving to regain its once-dominant position in these countries.

India's relationship with its immediate neighbourhood has been episodic due to multiple factors. It has been the constant endeavour of these nations to hedge their bets in finding a strategic alternative to India, which they consider overbearing. Pakistan has been a spoiler in India's relations with these countries. China has made major inroads into these nations with its BRI projects and endeavours to trap them in an eternal debt cycle (Dam, 2020). Further, an indirect Chinese threat is always on the cards through these

countries. Such a threat can bypass or turn flanks to present a dangerous situation to India. India will always have the challenge to keep these nations on its side, with which it has deep ethnic and cultural connections. In this connection, it will be pertinent to take a cue from Russia, which has not hesitated to go to war repeatedly to protect its immediate neighbourhood.



Intermediate Neighbourhood: India's intermediate neighbourhood comprises Africa, the Middle East, Central Asia, ASEAN, South Korea, Japan, and Australia. India's equations with these nations have mainly been cooperative based on historical, ethnic and religious linkages. However, from time to time, it has had to endure competition from other countries, especially China. Many countries in India's intermediate neighbourhood are part of ongoing conflicts due to intra-regional dynamics or external influences. These countries have also been battlegrounds for big power contestations.

India has deep cultural and ethnic linkages with African nations. These linkages go back to the non-aligned period and are based on trust. Currently, these linkages are under stress due to Chinese ingress into Africa through its chequebook diplomacy and selling BRI as a lucrative way to progress. An energy-deficient India has profound energy and trade links with Middle East nations. It also enjoys a great degree of trust among these nations due to the high Indian expat and NRI population, who form the basic skilled working force in the region. The recent agreement between Israel, UAE and India on trade and other matters opens new strategic possibilities.

Central Asia is critical to India for its energy requirements and access to Afghanistan. The major complexity in equations with Central Asian Republics is the absence of a direct land route to these nations. India's relationships with the relatively better-developed South Korea, Japan and ASEAN are on an even keel. India needs to enhance these relationships to counter Chinese influence and develop its economy. These nations are important from a disaster management point of view as also in the Indo-Pacific strategic construct. The nascent partnership with Australia needs nurturing and patience. This is because Australia

expects India to behave like USA or China, which is nearly impossible. Overall, India's intermediate neighbourhood is largely stable but needs constant attention to avoid a misstep.



Strategic Relationships: Beyond the Intermediate Neighbourhood, India has strategic relationships with the USA, Russia, France, EU nations and Israel. The equation with these nations has been one of interdependency (Athreya R., 2020). India has also developed deep political linkages with these nations based on historical, democratic, cultural, and other perspectives. This is a landscape of changing power equations. The Russo-Ukrainian war will impact these linkages and relationships to some extent. India's relationship with Russia is the oldest, which has withstood the test of time. However, it is under some degree of pressure due to the Ukrainian situation. Russia's growing proximity to China and India's quest for self-sufficiency in defence will dilute this relationship in future.

India's strategic partnership with the USA is essential for both nations in their quest to contain China. This partnership will underpin the QUAD to a large extent. The QUAD and the Indo-Pacific construct is the first time India has entered a strategic grouping of such a nature. India's challenge will be to find a balance between its increasing commitment to the QUAD, Indo-Pacific and USA on the one hand and its friendship with Russia on the other (Athreya R., 2021a). India's relationship with EU nations will also come under stress due to its proximity to Russia. India's relationship with Israel will grow due to a commonality of interests. It is set to impact the Middle East due to the 'Western Quad' formation. The Indo-French relationship will remain on an even keel and can be used as a balancer to even out India's strategic contradictions (Athreya R., 2021). Very significantly, India's strong strategic relationships are based on being dependent on these countries for its defence needs. These relationships have also contributed to the loss of India's strategic autonomy. As India continues to rise and strives for Aatmanirbharta, these strategic relationships will change and affect India's geopolitical heft.



Internal Issues: India has many internal issues which complicate its external strategic environment. These are largely well-known but are worth recounting. India remains energy efficient, disaster-prone and susceptible to climate change adversely.

Historically India has been dependent on outside powers and has rarely been able to attain strategic autonomy. India besides lacks a strategic culture (Sen, 2019). It suffers from partisan politics, which under any political dispensation has not been able to rise to the occasion on issues of national importance. India has also shown tendencies to veer towards self-inflicted ethnic and religious fractures.

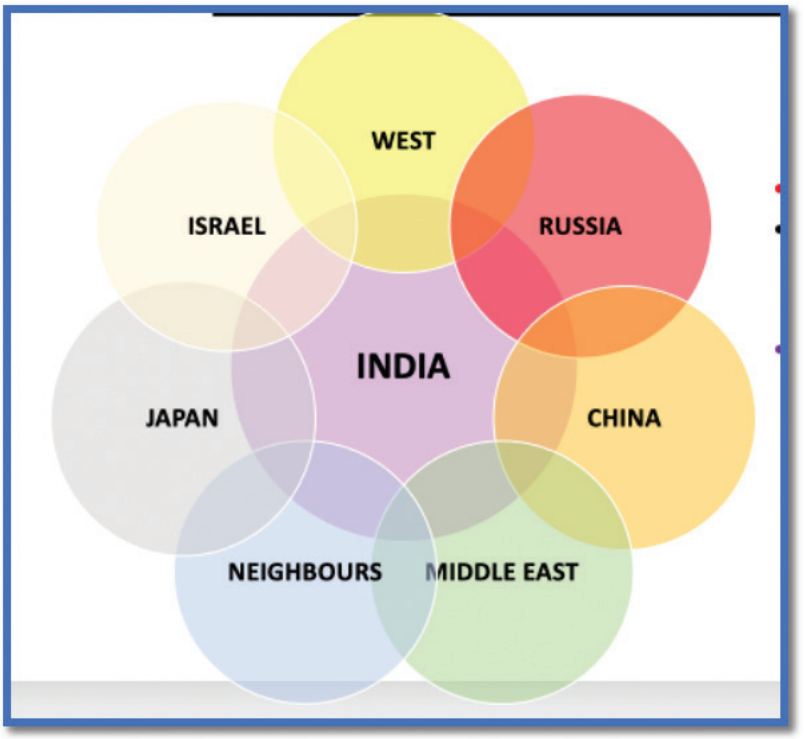
It has been subject to a long-running proxy war in J&K. The insurgencies in the NE have had an extended lease of life due to instabilities in Bangladesh and Myanmar – past and present. India is yet to develop a defence industrial base. It has not been able to fund its military adequately, nor has it been able to build adequate capacities to make its defence forces very strong. Despite all its shortcomings, India remains one of the fastest-growing economies globally and has shown great strength during the pandemic to bounce back from adversity. It has great innate strength being the largest democracy. Most importantly, it has a professional military force which has gained international respect through its vast experience and performance in battle and during international commitments under the UN flag.



Continental Vs Maritime Balance: In India, there is a constant debate about its focus - Continental or Maritime? This debate stems from its complex strategic environment. It needs a balanced understanding and approach. India shares land borders of nearly 3500 km with China and over 3000 km with Pakistan, which is largely disputed and partly occupied illegally. Both adversaries possess nuclear arsenals which can target the entire Indian landmass. India has had to defend itself repeatedly against their aggression, assertion, and coercion. They constantly pose individual and collusive threats - conventional and unconventional. Any weakening of land borders means a high likelihood of losing territorial integrity and an unacceptable threat to its people. Overall the continental threat from Pakistan and China is the highest priority to India's sovereignty and security. This threat is compounded by the emerging situation in Afghanistan and the Central Asian Republics. Presently and in the near future, India has no choice but to prioritise its continental domain.

However, the maritime domain can still be addressed. If India is to grow as a regional or global power, it must dominate the seas and protect its island territories. India must be the maritime policeman in its seas of interest – the Bay of Bengal, the Arabian Sea and part of the Indian Ocean, which extends from the Persian Gulf to the Malacca Straits. India must build capacities and develop strategies to make the Indian Ocean Region its fortress (Indian Navy, 2016, p. 78).

To that end, India must get hold of its neighbourhood. It must do whatever it takes to deny China from developing bases in Bangladesh, Myanmar, Sri Lanka, and Maldives. Indian Navy must also be enabled to deny the Indian Ocean Region to China or any other adversary when needed (Indian Navy, 2016). India needs to build for the future. From all perspectives, India's strategic environment guides it to prioritise the present but simultaneously prepare for the future. India needs a balanced approach. To manage its complex strategic environment, India must find a balance to grow in the continental and maritime domains. India's greatest challenge will be to find this balance because it is reluctant to increase its defence expenditure.



1.3 Indian Centrality

Fundamentally, the Ukrainian crisis is resulting in a Trans-Atlantic consolidation on one end and a Sino-Russian axis at the other. The big powers are all involved in this emergent scenario. While there might not be any major conflict involving these powers, proxy wars between them through third nations is likely to endure. Further, there will be great contestation and competitive trends to gain geopolitical ascendancy over each other economically, culturally, and ideologically. In a world where energy and resources are at a premium, there will be jostling for garnering these resources to gain an edge. As global warming and climate change occur, new avenues for strategic competition will open up, and new challenges of sustainability will emerge. In this volatile scenario, the centrality and importance of India for global peace, stability and growth will continually grow. In all great power contestations, India matters. Already there are clear indications of this trendline. The West, Russia, and China are making a concerted effort to keep India on its side in the current geopolitical situation. Israel, Japan, and the Middle East find comfort in India due to its stability and economic prospects. They are making significant overtures already. The neighbours also realise that the answers to most of their problems, including a hedge against China, lie in India's growth and strength. When seen in holistic terms, India will sit at the high table on most global issues irrespective of whether the UN is reformed. India needs to prepare strategically for the high table and take its expertise in multilateralism to the next higher level.

A Poser for Armed Forces: In this strategic landscape, the requirement of strong Armed forces is paramount. Often the question arises - are the Indian Armed Forces modern and robust enough to defend India in this complex strategic environment? The answer is yes. This was visible in Doklam and in Eastern Ladakh, where China baulked at conflict escalation due to the Indian ability to react and stand up to the situation. The next question is - is the Indian Armed Forces modern enough for a growing international power destined to be the third-largest economy? The answer is no, not yet. Today, India's force structure is designed to combat the threat it faces. As India grows to be a regional power, it must gravitate to be a capability-based force to combat any threat anywhere in the region. The challenge before India is to overcome its internal issues and play to its strengths to rise and perform to its potential. The opportunity is there despite the complex strategic environment in which India exists.

Conclusion: India exists in a complex strategic environment. This environment is set for a major restructuring after the Ukrainian crisis. The change poses great challenges to India's finding its place in the new global order. At the same time, the oncoming churn also gives excellent opportunities for India to cement its place at the high table of global affairs. As India rises, the strategic opportunities and challenges will become even more complex. If India is to cement its importance and position in world affairs, it will have to handle the forthcoming complexity with the confidence of a great civilisational power.

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Section 2

NATIONAL SECURITY STRATEGY POST-COVID-19 – A REVISED CALCULUS

Maj Gen G Murali



2.1 Introduction

The magnitude of the Covid-19 crisis is beyond the perceptions nurtured by humanity on epidemics and pandemics despite numerous records in history. History provides enough proof to show that when they mix, isolated populations exacerbate the illness exponentially. Periodic Plagues in the Roman empire, the onset of new diseases in Europe via Asia, and diseases carried to America by Columbus and his successors testify to the problem due to migration. The celerity of the spread of the Covid-19 virus could directly result from globalisation and interdependence. The pandemic is causal to the fear among health practitioners, policymakers, security experts and politicians alike. Within the previous century alone, three influenza pandemics in 1918, 1957 and 1968 contributed to millions of human fatalities and caused widespread social and economic disruption (Adam Kamradt-Scott & Colin McInnes, 2012).

Theory, practice, and policy formulations about security have changed over time. Security is no longer confined to the portals of military and territorial protection. Health issues are currently cited, joined amongst several non-traditional security concerns that embody the environment, energy, food, and migration (Adam Kamradt-Scott & Colin McInnes, 2012). Governments worldwide have increasingly seen

pathogens as public health problems and national security threats. Many states have incorporated disease threats and responses into their national security strategies. In the process, security policy communities have taken on new and important roles in national-level preparations for (and responses to) pandemics (Adam Ferhani & Simon Rushton, 2020)[2]. A dichotomy exists between the need for global cooperation with national borders becoming less critical and the protectionist tendencies of each nation closing itself out to the rest of the world. An examination of the World Health Organization (WHO) regulations of 2005 (International Health Regulations- IHR) explains the dichotomy prevailing today and the cause of realignments in International Relations (IR).

"The purpose and scope of these Regulations are to prevent, protect against, control and provide a public health response to the international spread of disease in ways commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade". (IHR Article 2, 2005).

The current crisis has shut the borders of many countries and economically damaged trade, commerce, and travel. The 2005 IHR aims for a borderless Global health exchange of information and remedies for health issues. The maxim, 'virus knows no borders,' is true. However, the solution to pandemics also requires nations to adhere to the IHR of sharing information, not be secretive about it, and respond to each other's requirements with political maturity, transcending the belief of cooperation as interference. The disregard and defiance of IHR by member nations have resulted in seeding distrust among nations. The pandemic has resulted in discursive perceptions of one nation due to the protective tendencies and absence of effective global leadership in handling the crisis. Threats instead of cordiality, absence of information sharing, and fake news have become causal factors for reassessments in IR.

This article examines the global pandemic caused by SARS-CoV-2 and how it impacts the internal security of the state and, consequently, national security, as well as international relations (IR). It brings to focus the primacy of human security and the need to review the National security strategy for the future. The article's research methodology is based on the accepted theories of security studies and medical research on Post Traumatic Stress Disorders (PTSD), psychiatric morbidity and related subjects in arriving at a correlational aspect of framing health as a security issue. The Covid outbreak has drawn attention to health threats from emerging and re-emerging infectious diseases and the latent traditional security concern of biological weapons and bioterrorist attacks.

2.2 The Historicity of Pandemics as a Security Threat

Diseases and natural disasters have been the biggest threats to humanity since time immemorial. The Black Death of the fourteenth Century claimed more lives than any military conflict before or since, while the great influenza epidemic of 1918-20 killed far more than the Great War that it closely followed (Peter Hough, 2017). The link between trade and the spread of disease is a fact and has conditioned the responses we are witnessing in the Covid crisis. Two causes of pandemics as an existential threat globally influenced the concept of health as a human security issue. First is the timeline of Influenza from 1557 until 2009 (H1N1 Pandemic) with a recurrence gap of approximately 40-50 years. The Spanish Flu caused

widespread deaths across nations, suggesting an existential threat to humanity and forming the narrative for including diseases as a security issue. Second, the potential use of virus strains (especially airborne and contact driven) in disabling troops in the war. The magnitude of the crisis as a national security risk did not dawn on the political class then.

Recently, the HIV/AIDS crisis established its global nature in public health and impacted essential security agencies such as the armed forces. Disease induced The Clinton administration formally designated the disease as a threat to national security (Barton Gelman, 2000). In a 2002 speech, Colin Powell stated that AIDS destroys nations and societies and is a security issue (Colin Powell, 2002).

Recently, the HIV/AIDS crisis established its global nature in public health and impacted essential security agencies such as the armed forces. Disease induced The Clinton administration formally designated the disease as a threat to national security (Barton Gelman, 2000). In a 2002 speech, Colin Powell stated that AIDS destroys nations and societies and is a security issue (Colin Powell, 2002).

The communicable diseases of the past, and the analysis of the havoc they can cause, influenced two narratives: the historicisation of pandemics as a security threat and the narrative of new security risks. The realist theory of the military nature of security gave way to the non-military factor of health and human security as equally important components of national security.

2.3 Perceived Vulnerabilities and Threats due to Human Behaviour

Vulnerability is an internal state of an individual or group that is either inborn or acquired due to circumstances such as epidemics or hunger. Vulnerability sets off a set of behaviour amongst affected people or individuals. The German-Jewish philosopher and sociologist Helmuth Plessner explains the theoretical basis for human behavioural aspects. A 1931 study, 'Macht und menschilche Natur' by Plessner, mentions that man is not principally anti-social. However, the necessity of self-preservation, primarily due to the basic needs of food, shelter, and clothing, which are essential to survival, inevitably leads to conflicts of interest.

Psycho-social Vulnerabilities: In September 2005, the 46th Directing Council of the Pan American Health Organization (PAHO), under the leadership of Dr. Lee Jong-wook, Director-General of the World Health Organization (WHO), warned all the attending Ministers of Health from the Americas about the risk of a threat with incalculable health, social, and economic consequences. He stated that "failure to take this threat [avian influenza pandemic] seriously and prepare appropriately will have catastrophic consequences." He also called the certainty of a world avian flu pandemic a "critical moment," an event of enormous consequences in which "no Government, Head of State, or Minister of Health can afford to be caught off guard." He continued, stating that "every country must also have a communications strategy. It should be ready and able to inform the public about the pandemic, what is happening, and what to do" (PAHO.org, 2006).

Ecological Epidemiology studies people, especially displaced persons (Murali, 2018). It determines how environmental exposures impact human health. A LANCET study of 24 papers on the psychological impact of quarantine reported adverse psychological effects, including PTS

symptoms, confusion, and anger (Brooks, Rebecca et al., 2020). For people with preexisting mental health conditions, a pandemic can further heighten their anxious thoughts and compulsive behaviours (Monica Schoch-Spana, 2020).

Several studies on contagion in society have revealed impacts on demography, psychological upheavals, economic activities, and governance. The psychological repercussions of contagion typically include significant levels of emotion (notably fear and anxiety) that impede Pareto-optimal rationality in decision-making at both the individual and the collective level (Donna Stroup, 2010). Such emotion is primarily a product of uncertainty and inaccurate risk estimation (Andrew, Smith, 2009). Novel pathogens such as SARS-CoV-2 generate profound negative morbidity, mortality, uncertainty, and fear. These destabilise markets and undercut international trade and commerce.

2.4 National Security Implications

Epidemics are health emergencies which threaten human lives. Invariably, countries' resources will appear insufficient. A major epidemic also brings in psycho-social disturbances that exceed the population's capacity to handle the situation, and the entire population' could experience extreme stress. Some psychological manifestations are transitory due to living through the traumatic experience a few can turn pathological. Most visible were the migrant workers' crisis, the social stigma attached to covid cases and defiance by some sections of society in adhering to the norms announced by the Government. Cases of arson by the workers in Surat and consequent arrest (Times News Network, 29 April 2020). are a result of psychosomatic reactions created by the epidemic situation. Indian rural folk have shown a remarkable understanding of the present situation, as seen from the interaction of the PM with Panchayat leaders.

In the context of the present crisis affecting the entire world and the perceived threats due to human behaviour, any threat to the internal security of a state emanates from two principal issues. One, the vulnerability of the people and two, the psychiatric morbidity leading to irrational behaviour affecting societal instability. Under such circumstances, the cohesion of the political elite on matters of national importance is a foundational prerequisite for nation-building, and absence is a security concern. The nation is faced with organising a strategy for tackling the pandemic with limited resources, attempting to solve the livelihood problem of the poor in a shutdown economy which can cause a sclerotic effect on the state apparatus of governance. It is an extreme situation of 'Life vs Livelihood' and imposes an emergency environment in the country.

Security concepts have evolved from state-centric (Traditionalist theories) to states and humans as conjoined nation-state entities. Idealism and Constructivism promote the idea of morality in acts of war and seek justification for military intervention. They uphold the validity and need for territorial integrity and military power but emphasise human security. The WHO constitution states, "The health of all peoples is fundamental to the attainment of peace and security and depends upon the fullest cooperation of individuals and States" (WHO, Constitution, 1946). The principal aim of the UN was to ensure military stability, and the security of states was to be ensured through the security of the people. Liberalism propagated a theory of just wars, humanitarian intervention, and distributive peace as its agenda to guide the subject of national security and International relations (IR). The WHO charter is in full conformity with the theory of Idealism.

India's Ancient Literature: Insofar as India is concerned, microbial infections and the way out are given in our ancient scriptures. The Arthashastra, written around 4 BC, is elaborate on calamities. That which deprives (Vyasyati) a person of his happiness is termed vyasana (vices or calamities) (Shamasastry, 1951). The descriptions of ill effects of manmade or natural calamities include oppression by chiefs, and officials, harassment of the population, civil strife, traders exploiting the situation for extraordinary profit and others. We are witness to most of the aspects mentioned above of calamities today. According to Kautilya, these phenomena affect the welfare and contentment of the people and thereby weaken the nation. Kautilya's response to unforeseen calamities is also a pointer to how the state prioritised human and socioeconomic welfare issues. Kautilya writes, "In times of calamities, the land should not only be capable of sustaining population but also outsiders, when they come into the kingdom, in times of calamities." Kautilya did foresee the linkage between natural disasters and potential conflicts and epidemics, and environmental security came under state security (Medha Bisht, 2016). Thus, the welfare of the people also included taking adequate health safety measures, as it was directly linked to the state's prosperity, stability, and security.

Similarly, during famines, grains from royal stores were distributed, exemption of taxes was made, public works like road constructions were started for the unemployed, the rich were heavily taxed, and help from foreign countries was also sought (Sinha, 1971). Kautilyan realism explains not only the methods to assure political stability and internal security of the kingdom but also talks of methods to subvert foreign states. He identifies sociological and psychological motives that can be exploited to recruit 'agents of influence' (Subrata Mitra, Liebig Michael, 2017). Persons with wounded honour or maltreated (religious persecutions); persons living in fear (pandemics and disasters); Persons driven by greed or affects (addiction to money and power); and persons with unfulfilled ambitions (leftists and rightist groups) are potential targets for spreading dissension. A pandemic and disasters (natural as well as manmade) are prime situations for creating an environment that drives some sect of the population towards being such potential targets. In today's world, we can add fake news as another dimension to the causal factor affecting the minds of the population.

Securitization of Health: Diseases as a security issue are non-military. It is a process that leads to identifying an existential threat and establishing state policy. The inspiration for debating the issue is taken from the Copenhagen school's securitisation theory. It is based on a concept developed by Barry Buzan (1983) in his book People, States, and Fear. The concept brings political, military, societal, economic, and environmental sectors into focus on the national security landscape. The theory differentiates the state and sovereignty as different entities and assigns the state as the referent objects to the military sector and sovereignty to the political sector (Shahin Malik, 2015). Securitisation was dependent upon stages which included, first, a declaration by the elites that an issue was a security problem, and second, an acceptance by the audience that the issue is indeed an important one (Weaver, as cited by Shahin Malik, 2015, p.80). Labelling a pandemic as a security issue takes it beyond the political discourse and ensures exceptional actions are undertaken. Handling a national crisis moves from being a set of reactions to premeditate and well-thought-out timely actions and interventions. One can draw a simile to the methodical actions the armed forces took in preparing for an imminent response to a territorial or terrorist threat. The threshold to labelling a threat as a security issue was the term 'existential' or 'extreme."

The empirical evidence of the SARS-CoV-2 and its impact on humanity does not require any debate on it being a security threat, unlike the historicity and empirical factors of other diseases such as Ebola, MERS and others. CNN reports, As of Wednesday morning (22 April 2020), 26 Navy warships were affected by the virus. 3,578 US service members have tested positive for the virus, including two deaths. Nearly 800 of those cases have come from the outbreak aboard the aircraft carrier USS Theodore Roosevelt where one sailor also died (Starr Barbara CNN, 22 April 2020). On 24 April, a US Navy destroyer (USS Kidd) performing a counter-narcotics mission was hit by an outbreak of at least 18 coronavirus cases (Starr Barbara CNN, 26 April 2020). This ship was taken off duty, and precautionary measures were taken, including a crew change. The US Pacific Fleet commander had remarked that this would delay the deployment of their ships. Beyond the practical goal of maintaining readiness, there is a growing understanding that the nature of the US military, what it does, and the concept of what constitutes a national security threat may be changed by the pandemic. In an operationally active scenario, such disruptions will be unacceptable and detrimental to handling a warlike situation. Indian armed forces have very few covid +ve cases, and none of our combat duty ships is affected operationally. The virus threat has a definite impact on our troops engaged in our highly active borders and does impose certain cautions and precautions in the conduct of operations.

Bioweapon Hypothesis: In an explosive interview, Dr. Francis Boyle, who drafted the US Biological Weapons Act, gave a detailed statement admitting that the 2019 Wuhan Coronavirus is an offensive Biological Warfare Weapon and that the World Health Organization (WHO) already knows about it (Dr. Francis Boyle, 17 March 2020). He believes the virus to be potentially lethal and an offensive biological warfare weapon or dual-use biowarfare weapons agent genetically modified with a gain of function properties.

The bioweapon hypothesis is a speculative aspect yet gains traction when seen through the prism of the nature of the virulent virus. Misinformation is unavoidable in today's globalised world, especially instantaneously affecting social media platforms. The news of the US funding the Wuhan virus laboratory adds the subtle element of suspicion, enough for the media jockeys to spread disinformation. Conspiracy and counter-conspiracy theories will abound in such situations and only stir murky waters and not identify the cause or a conclusion for the future of humanity. Central to the weaponisation of biological agents is that a virus such as a corona can be weaponised, effectively used to disable troops and large sects of the population. We must guard against this and treat it as a security issue gains force.

International Relations (IR): IR encompasses the management of the long-term ecological, political, and financial effects of the world economy and the short-term effects of poverty, starvation, and disease (Peter Sutch & Juanita Elias, 2007). IR has undergone a metamorphosis into a form of global governance, International Law, and national policy calling for a collective response to threats to Human security. Concurrently there is also resistance to the dilution of national sovereignty required for this change. The COVID-19 crisis is a testament to this dichotomy between the requirements of openness and enhanced cooperation in dealing with a pandemic and the ground realities of resistance in accommodating changes to policies by nations necessitated in handling the crisis.

Every global crisis impacts international relations. To say that the SARS-CoV-2 virus appears to have turned the world upside down would be an understatement. Every crisis has empowered and given renewed directions to world bodies and changed laws and policies. 9/11 strikes and the financial crisis

of 2008 are cases in point. What has affected the relationship among the polities of nations? There are two fundamental reasons which have disrupted the traditional theories on IR. First, globalisation and the interdependence of economies as a way of life have been affected seriously. Second, the inability to cope with the crisis led to protectionism and the closure of borders to overcome the crisis. The fallout is reduced mutual trust, trade wars, belligerence and irrational exposition of territorial rights, and an absence of global leadership. The crisis has also exposed chinks in bilateral relations. Kautilya and the Realist theory on IR say that the world will be anarchic. We are witnessing economic anarchy in the world of International power politics.

India's Diplomacy: India's immediate aid to neighbour countries reinforced the Government's commitment to neighbour first policy and set the path for regional stability and cohesion in preference to multilateralism. The Prime Minister and the External Affairs Minister have played their role effectively and dispassionately. The convening of the SAARC forum to address the pandemic was a first by any leader to bring together regional alliances in collectively addressing the situation and struck a chord among the global community, winning accolades for India. India helped its immediate neighbours and many countries of the EU, USA, Middle East nations, and Afghanistan with medical aid. India has taken an opportunistic initiative in Asia and requires following it up by strengthening other alliances such as BIMSTEC. Its existing arrangements with ASEAN, with specific reference to Cambodia-Laos-Myanmar-Vietnam (CLMV) sub-region, needs special attention. Similarly, the pending MCG working group on health and revival of the pandemic management vertical in the agenda must be prioritised. The world is moving towards smaller regional groupings, with self-sufficiency driving the agenda.

The China-India Stand-off: Jayadeva Ranade (June 2020), former Additional Secretary and President Centre for China Analysis, opines that the present stand-off is to test India's military preparedness, political will, and resolve. What stands out is India's relative degree of assertiveness, confidence, and arrogance, which was absent in the previous regimes. The conciliatory mood has given way to aggressive replies and countermoves. Is it related to COVID-19? Yes and No. India's coalition diplomacy, coupled with its leadership in marshalling global response and providing medicines, is a 'new normal and a threat to China. China prefers India to be a subordinate partner in Asia and world affairs. A resurgent India threatened its ambitions and spoke on its concept of subjugation of peripheral nations. No, because India took no direct or oblique action on the COVID issue compared to the rest of the world. Mohan Malik (June 2020) relates the present crisis to China's 'baser instincts' – Larger territory, absolute power, and obeisance from all. China longs to be Number One (Zhongguo di Yi) (Malik, June 2020).

Chinese belligerence has also thrown opportunistic carrots. In a recent statement, ASEAN denounced the Chinese attitude in the South China sea. The official statement of the Chairman of ASEAN after the 36th ASEAN summit,

"We reaffirmed that the 1982 UNCLOS is the basis for determining maritime entitlements, sovereign rights, jurisdiction, and legitimate interests over maritime zones. The 1982 UNCLOS sets out the legal framework within which all ocean and sea activities must be carried out. We emphasised the importance of non-militarisation and self-restraint in the conduct of all activities by claimants and all other states, including those mentioned in the DOC that could further complicate the situation and escalate tensions in the South China Sea". (H.E. Dato Lim Jock Hoi, Chairman ASEAN June 2020).

It is considered a strong reiteration of sovereignty coming from ASEAN since the statement is not negotiated among the member nations. Information on the expedited delivery of weapons and equipment by France, Israel, the USA, and Russia shows solidarity with India. Australia announced a new assertive defence plan consisting of long-range strike capabilities and cyber warfare efforts. A change is likely amid the heightened tensions and realignments due to China's pandemic and irrational consistency. What and how is a matter of educated guess.

The economy forms the backbone of any nation. The future of IR would be decided by this factor alone. The pandemic has undoubtedly underscored the need for effective global cooperation. New relations based on such cooperation are likely to emerge. The UK's Labour comment on the Indo-Pak conflict as a measure of reestablishing good links with India is an example. However, the shape of the world after the pandemic remains subject to political will, leadership, and the ability of international actors to cooperate (Perthes Volker, 2020). China has displayed irrational aggrandisement acts on its borders with almost all its neighbours. It is prudent to study the possible changes rather than being definitive about them. These changes would spur the international community to realign itself.

2.5 Way Forward

Brian W. Flynn (1997) explains the psychological responses and interventions required pragmatically, based on experience with disaster mental health. Among his conclusions are the following:-

(a) Counselling interventions are essential and effective. The traditional intervention method for mental health cases is providing a diagnosis first. In disaster situations, individuals are considered competent to cope and therefore are known to follow coping strategies. Emancipation is the key.

(b) Directive care (state intervention), organising tasks of communities and their homes through counsellors, and active and repeated listening (announcements) are other methods to follow.

(c) Discouraging blame, educating people on realistic expectations, and the establishment and institutions taking the lead in organising referral and recovery services are essential game changers.

A comprehensive Outreach, Consultation, and Education strategy must form the basis of a plan of action. Brian (1997) also mentions additional lessons on the display of human resilience, the behaviour of blaming the intervention actions by Governments, comfort derived by those affected through religious beliefs to overcome the present, and a cause of hope for the future, and the importance of symbolism and rituals as a major healing value.

How India Tackled the Pandemic: Given India's orientation on security matters, it is crucial to view disruptions to society due to health and human security as essential parameters of national security. The present crisis has thrown an opportunity to address our strategic needs of security and be 'Atmanirbhar' (in the words of The Hon'ble Prime Minister) on all fronts. There were significant, timely and enforcement measures that stand out as benchmarks for the world to tackle such pandemics in the future. Notable aspects were as under: -

(a) Taking the leadership and responsibility to tackle the issue by the Prime Minister's Office, coopting the Ministry of Health and Ministry of Ayush. A war room situation was established, which helped

understand, analyse, and disseminate information. Decision-making was at the highest level and ensured the implementation of actions.

(b) The decision to manufacture the vaccine was risky, yet the go-ahead with scant data proved correct, and India became a net provider to the world.

(c) Involving and promoting indigenous medicines through the Ministry of Ayush to develop immunity.

(d) Reaching out to the population with correct information and motivating them to follow the guidelines was evident in how the Indian population followed the rules set to protect themselves. An emancipated population understands and ensures national security. The outreach by information also required enforcement measures.

(e) Control of predatory tactics in the pricing of medical supplies and treatment by state intervention and enforcement.

(f) Data management through established national portals and app-based models for spreading awareness to the population.

Notwithstanding the adaptive measures taken in tackling the pandemic, a few suggestions in this regard are as follows: -

(a) Divergent social groupings and communities have different understandings of scientific knowledge. India needs a 'Pandemic Plan', which elevates such a pandemic to a state of extreme National emergency and forms part of their National Security Strategy. A pandemic plan must keep communication (simple short messaging to manage the perceptions of the population) and establish a command & control team at District levels as priority functions. A command and control set-up consisting of Health, Disaster Management and Ministerial reps must be automatically formed in emergencies under the PMO. Such an organisation must establish a two-way channel between the state and Centre and percolate to the District level. A Standard Operating Procedure (SOP) with simple yet clear instructions with the executive authority duly ratified by the Parliament must be made. Its execution can be authorised by the Govt when needed.

(b) Data management is key to managing perceptions, information, and the emancipation of citizens. An 'Information Operations unit with Public opinion analysts should form the core organisation of our National Security Advisor (NSA). Such an organisation can be superimposed during emergencies and be the information arm of the PMO.

(c) Pandemics and health-based emergencies should be included in the role of NDRF and SDRF. They must have a self-sufficient infrastructure to deal with pandemics, and state governments should be able to deploy them during disasters and emergencies.

2.6 Conclusion

Health has taken primacy in state affairs ever since the SARS-CoV-2 struck the world community. Nations struggle to solve the rapidity of the spread of the virus and its alarming morbidity. A strategy to tackle the virus is evolving, and the race to produce a vaccine is driving the pharmaceutical industry and has become

a priority for all nations. The fear and uncertainty among the people have caused irrational behaviours affecting the societal fabric and internal security environment. The vacillating strategy between 'life and livelihood' by governments created a fundamental shift in trade and commerce, affecting the economy of most nations.

A pandemic situation calls for a 'Pandemic plan' within the confines of a National Security Strategy. Globally, the referent object for security has undergone a radical transformation from mere military connotations to the broader and deeper meaning associated with national existence. The COVID-19 virus pandemic re-emphasises the paradigm enlargement of the ramifications of a wide variety of issues on International Relations and National Security. The psycho-social responses evoked are globally similar and discernible. An imperative for countries worldwide now shifts to treating this challenge as an opportunity to cooperate and consult on tackling the public safety and health aspects of such occurrences and ponder on them as National Security problems. These would require ingenious and replicable answers in the political and social realms, both nationally and internationally. A national plan with a renewed focus on human security with health as a subset is an immediate step required to be taken. Health for all is a maxim that can be adopted in our security strategy.

The subject of international security and sustainable development is extraordinarily wide-ranging and involves three crucial issues to be addressed; how to live (development), how to live with each other (security) and how to live with nature (sustainability). Kautilya's philosophy is based on the concept of Trivarga – Artha (material well-being) and Vriddhi-(sustenance or livelihood), Dharma (righteousness on all actions) and Kama (desires). A pragmatic application of Kautilyan philosophy is a viable solution to any crisis.

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PART 2

DOCTRINAL THINKING

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Section 3

ROLE OF THE CHIEF OF DEFENCE STAFF IN THE CONTEXT OF CIVIL-MILITARY RELATIONS IN INDIA

Brig L.C. Patnaik



3.1 Introduction

The Indian Armed Forces have been a powerful instrument of nation-building since the country achieved its Independence after nearly three centuries of colonial rule. It has stood the test of time and faced numerous challenges to keep the country united against fierce destabilisation attempts. It went into battle soon after Independence, when it had not even settled down to reorganise itself post- Independence. The Indian Armed Forces have made supreme sacrifices to preserve the unity and democratic fibre of the country. It has challenged the country's external and internal threats, creating a suitable environment for our nascent democracy to gain roots and for our Republic to progress on the principles and vision of our Constitution. The Armed Forces' success in effectively countering the security challenges with four full-scale wars, proxy wars, internal rebellion, insurgency, and terrorism has resulted from solid civil-military relations since Independence. The professional understanding between political leaders, civil servants, technocrats,

and civil society has matured through various institutional mechanisms and principles enshrined in the Constitution.

The mechanism that purports the right balance between the ideological values of civil society and the corresponding military professionalism defines the state of civil-military relations (CMR) in any country. The legacy of a colonial past overshadowed the tenor of India's relationship between military and civilian authorities. The systems created by the Government of the newly independent Dominion of India are still in vogue (Chandrashekhar, 2017, p. 30). The fabric of such a relationship of the Indian Armed Forces with the multiple organs of the Govt, while remaining wholly apolitical, is a lesson for many young nations trying to grow on the pillars of democracy (Wilkinson, 2016, pp. 3-5).

The creation of the post of Chief of Defence Staff in 2018 has been one of the most appropriate measures to strengthen the mechanism of higher defence organisations in the country. Linked to almost all the security challenges the country has faced since Independence, are the flaws in the higher defence mechanism of decision-making or inadequate synergy with civilian authority. These flaws have caused frequent misunderstandings amongst the strategic establishments, both political and military.

3.2 Working of CMR in Independent India

Post –Independence, there was a lack of expertise at the political and military level for higher defence management. General Hastings Lionel Ismay's proposal, duly passed by a cabinet resolution on 25 Sep 1947, based on the corporate principle of collective accountability and decision-making, found its way into the higher defence organisation of the country. In the Indian context, war management since Independence has been a subject of dispute and discord between the military and the civil administration.

Post-independence, there was the issue of a lack of expertise among Indian military officers as also civilians dealing with defence matters. The first Governor General of independent India, Lord Louis Mountbatten and his Chief of Staff, General Hastings Lionel ""Pug" Ismay, were instrumental in creating the current system (Chandrashekhar, 2017, p. 30).

India constituted the Defence Committee of the Cabinet on 30 Sep 1947. The members were the Prime Minister, External Affairs Minister, Home Minister, Defence Minister and Finance Minister. The three Defence Chiefs were in attendance as also the Defence Secretary and Adviser (Finance) (Chandrashekhar, 2017, p. 32).

Prof. Amit Mukherjee believes that while the committee system was sound on paper, the leadership style of Nehru in the early years of Independence did not allow it to work effectively (Mukherjee, 2020, p. 61). However, while the Dominion government did not create a CDS post at the time, it is reported that Lord Mountbatten believed it would be appropriate a decade later when the Navy and Air Force would have officers of similar seniority to the Army. Lord Mountbatten would make repeated suggestions to successive Indian governments in this regard (Mukherjee, 2020, pp. 50-54).

China War 1962: There had long been an unwillingness by the Indian political establishment to take expert opinion of the Armed Forces on military and strategic risks. The Indo-China War of 1962 was a watershed where these weaknesses surfaced in real terms. Gen Thimayya, then Chief of Army Staff, had given his honest, professional advice on the Chinese military intention and the potential threat on the Indo-

Chinese border. Prime Minister Pandit Nehru set aside his advice as he wanted to pursue a policy of peace and appeasement based on the Panchsheel Agreement of 1954.

There were also considerable differences between Defence Minister V.K. Krishna Menon and the COAS. A particular bone of contention was the promotion of three-star-level officers, including the next COAS (Subramaniam, 2016, pp. 221-222), (Wilkinson, 2016, pp. 127-129). An immediate consequence of this defeat was increased defence spending. Prof. Wilkinson quotes a book by Maj Gen P.S. Bhagat wherein two major lacunae identified are militarily inefficient command and control systems and the development of strategies by civilians without involving the military in a timely way to think out their implications. Notwithstanding these issues, there was a conscious decision not to appoint a CDS (Wilkinson, 2016, pp. 129-131).

Indo-Pak War 1965: Although India was successful in this war, there were instances of poor leadership both by civilians and military leadership. Further, there was poor interservice coordination (Mukherjee, 2020, pp. 69-70).

Indo-Pak War 1971: On the contrary, Mrs. Indira Gandhi gave a free hand to General (later Field Marshal) SHFJ (Sam) Manekshaw to manage the war of 1971 with Pakistan without much political interference. This freedom of action led to one of the finest military victories in the annals of military warfare (Subramaniam, 2016, pp. 340-343). This war saw cordial civil-military ties with the political leadership, military and bureaucracy working closely. However, scholars have varying views on effective jointness among the Armed Forces (Subramaniam, 2016, pp. 359-363), (Mukherjee, 2020). This apparent success in one war did not translate into institutionalised substantive policy changes (Mukherjee, 2020, pp. 79-80).

The idea of appointing General Manekshaw as CDS was reportedly mooted at that time but failed since neither the other Armed forces nor the bureaucracy favoured the idea (Wilkinson, 2016, pp. 138-139). Lord Mountbatten reportedly encouraged Mrs. Gandhi to appoint a CDS (Mukherjee, 2020, p. 76).

Air Marshal Arjun Subramaniam highlights the role of India's strategic community led by K. Subrahmanyam in making hawkish pronouncements that guided India's war efforts (Subramaniam, 2016, p. 341). These hawkish pronouncements would be significant since K. Subrahmanyam would later head the Kargil Review Committee that recommended greater Integrated and Joint Defence, including the CDS post (Kargil Review Committee, 2000).

Kargil War: We can see that this war in 1999 is the maturation of civil-military relations in India. Politicians could decide on the conduct of war earlier seen as purely military. Moreover, the three service chiefs worked in tandem. There was praiseworthy teamwork, wherein civilians made strategic decisions, and the military had tactical autonomy (Mukherjee, 2020, pp. 87-88). This war was a milestone that led to the appointment of the Kargil Review Committee (KRC) (Mukherjee, 2020, p. 89).

Galwan Crisis: The Indian Government seems to have forgotten the bitter lessons of the Kargil war and the recommendations of the Kargil Review Committee and repeated the mistakes mentioned earlier in handling the Galwan Crisis with China.

Historical Western Examples: In other parts of the world, civilian assertiveness grew with the democratic structure evolving in many Western and European countries. When viewed from the larger perspective of management of the war, by the end of the 19th century, democracy got established in the

world's most advanced countries, namely the USA, Germany and the UK. In these countries, too, there have been considerable differences of opinion between the military and civilian leadership.

In the UK, when Winston Churchill, as the Minister of Navy, overruled Admiral Fisher's professional view of launching a naval operation through the Dardanelles Straits into the Black Sea to attack Turkey, an ally of Germany, it led to the worst naval disaster in the British naval history (Gough, 2017).

Towards the end of the Second World War, Gen Mc- Arthur was dismissed by President Harry Truman as he questioned the supremacy of the civil authority by suggesting a full-scale invasion of Manchuria (China) after the Korean War (Harry S. Truman Library and Museum, 2017).

3.3 Creation of Chief of Defence Staff (CDS)

The Government created the Chief of Defence Staff (CDS) and the Department of Military Affairs (DMA) in 2019. It is to be a four-star post with the emoluments of a service chief (Press Information Bureau, 2019).

The incumbent Chief of Army Staff, General Bipin Rawat, was appointed as the first CDS (Press Information Bureau, 2020)

Kargil Review Committee: These reforms started due to the recommendations of the Kargil Review Committee and the Group of Ministers (GoM) headed by then Deputy Prime Minister Shri L K Advani (Dua, 2019). The Kargil Review Committee highlighted several lacunae in the structure and working of the armed forces in India (Kargil Review Committee, 2000). Subsequently, the GoM recommended the creation of a Chief of Defence Staff (Government of India, 2001, p. Para 6.19)**.**

The focus of the recommendations was primarily to improve jointness in operations, training, procurement, and staffing. Despite the Indian Armed Forces' apolitical character, secular orientation, and contribution to fighting the adversaries to protect sovereignty and nation-building, there has been much mistrust between the several national security organs. We understand well that we cannot predict the nature of war in future in absolute terms. However, organisational reforms, doctrines and equipment profiles must match contemporary advancements in modern-day warfare.

HQ IDS: Based on the KRC recommendations, the Government set up the Integrated Defence Staff in 2001 vide Government of India, Ministry of Defence letter number MoD/IC/1027/32/IDS/5843/2001 dated 23 Nov 2001 (Integrated Defence Staff, 2001). The Government also created the post of Permanent Chairman, Chief of Staff Committee (PC-COSC) and HQ IDS under COSC. The creation of HQ IDS laid a strong foundation for jointness among the Services. It hoped to address the mistrust.

Nevertheless, in the absence of a permanent incumbent of COSC, the organisation suffered from the implementation of significant recommendations made by the IDS to the Govt. As Air Chief Marshal Arup Raha, former Chief of Air Staff and Chairman of COSC, highlights, the CDS should be deeply knowledgeable about the capabilities and options of all three services, individually and jointly. The CDS should ensure equality among services so that national security is a shared responsibility of the three forces (Raha, 2022).

There have been calls to create a CDS since the days of the KRC (Dua, 2019). All three stakeholders resisted this. Politicians were not keen to tamper with the existing civilian control of the military. Armed

Forces Services did not see jointness as essential. Bureaucracy did not want to change procedural rules (Mukherjee, 2020, p. 91). Notwithstanding this, there has been an evolution in thinking across the board.

Doctrines: The IDS has a DCIDS Doctrine Organisation and Training Branch (HQ IDS, 2022). Under this post, a Directorate of Doctrine has drafted several doctrines for the effective functioning of integrated warfare (HQ Integrated Defence Staff, 2022). In 2006, HQ IDS promulgated the first Joint Doctrine for Indian Armed Forces.

In 2010 the IDS adopted the Joint Doctrine for Perception Management and Psychological Operations (HQ IDS, 2010). The IDS also adopted the Joint Doctrine for Air Land Operations in the same year (HQ IDS, 2010a). The HQ IDS released the second Joint Doctrine of the Armed Forces in 2017 (Headquarters Integrated Defence Staff, 2017). The Joint Training Doctrine was adopted (HQ IDS, 2017). These Doctrines were moved towards the effective functioning of joint and integrated defence.

The CDS Post: The Joint Doctrine has an entire chapter on Higher Defence Organisation (Headquarters Integrated Defence Staff, 2017, p. Ch 4). This Chapter can be said to lay the foundations for the post of CDS. It was created in 2019 primarily to address the abovementioned anomalies of higher defence management and ensure optimal war preparedness. It is, however, the result of evolution and reforms that started in 2001 (Athreya, 2020). While there was the conceptual and organisational framework of a CDS, the Doklam standoff and earlier events in Myanmar, Uri and Balakot drove the political leadership to impose jointness in the Indian Armed Forces (Gnanaprakasam, 2022, pp. 4-5).

The CDS is a single-point Advisor to the Government regarding the tri-service commands, namely Strategic Forces Command, Andaman and Nicobar Command, Space, Defence Cyber Agency, and Special Operations Divisions. CDS is also required to provide professional guidance and support to the three Services and the COSC in joint training, intelligence, communication networks, budget management, procurement, HR issues, International Military Cooperation, HADR and aid to civil authorities (Press Information Bureau, 2019).

As Secretary Department of Military Affairs (DMA), he is required to deal with the policies of the MoD, coordinate with other Ministries like Railways, Shipping, National Highways, Home Affairs (NSG, Paramilitary Forces, Central Police Organizations, National Disaster Management Authorities and Intelligence agencies), Civil aviation, MEA, HRD and Telecommunication.

The responsibilities will increase when the proposed joint operational commands like the Air Defence Command, Maritime Command, Integrated Theatre Commands (ITC), Joint Training Command and Operational Logistic Command are finally created (Kumar & Sodhani, 2022). Seeing the global scenario, the Ukraine War shows the need for Integrated Theatre Commands (Kumar P. R., 2022).

3.4 Decision Making Architecture in National Security.

The Joint Doctrine lays out the organisational structure of security decision-making (Headquarters Integrated Defence Staff, 2017, p. Ch 4). Decisions on all issues dealing with National Security are vested with the Cabinet Committee on Security (CCS), consisting of the Prime Minister, Defence Minister, EAM, Finance Minister and National Security Advisor (NSA). The role of the CDS/ Service Chiefs in recent national security challenges in the aftermath of the Pulwama terrorist attack and Chinese incursion in

Ladakh has proven the efficacy of CDS as a single-point military advisor. Furthermore, they integrated the Service Chiefs into the decision-making matrix of national security. CDS /Service Chiefs are requested to attend to provide professional military advice if required (Headquarters Integrated Defence Staff, 2017, pp. 32-33).

Civil-Military Relations: The Joint Doctrine (in Appendix B) lays out the principles of CMR. It accepts civilian control over the Armed Forces. Further, essential elements like warfighting strategies, procurement, planning, and nuclear and defence diplomacy are highlighted (Headquarters Integrated Defence Staff, 2017, pp. 59-60).

There is a mention of Higher Defence Institutions. The relationship between the political leadership and the military has much to do with the quality of professional interaction between the Prime Minister, the Defence Minister, the Service Chiefs, and the CDS. The CDS, being mandated as Secretary DMA to coordinate with various ministries of the Govt of India, also plays an important role in coordination with the National Security Council, National Security Advisory Board, and the NSA.

The role of the Defence Secretary and the Secretary of Defence Production, and the Chairman DRDO (Secretary Level) are critical to fine-tuning the relationship of the defence minister with the Service Chiefs and the CDS.

The Defence Minster is the fulcrum of setting the tone for a sound and orchestrated civil-military relation of the entire organisation. The Defence Minister needs to display a sense of pragmatism and, where required, overrule the bureaucracy and convincingly put across issues of national importance and the strategic necessity to the Cabinet Committee on Security (CCS). In post-independent India, the nation has not been very fortunate to have such Defence Ministers, barring a few, to display such pragmatism and comprehension of strategic and national interest to convince the CCS of the needs of the Armed Forces.

This anomaly has led to a severe lack of trust and a perception deficit in the overall security structure of the country (Raha, 2022, pp. 270-271). Hence, the Prime Ministers have to frequently intervene to restore the bonhomie in the larger interest of national security.

NSA or CDS: The Chief of Defence Staff post had not found favour with the Govt, despite its strong recommendation in K Subramanyam's Kargil Review Committee Report and partial reference in the Naresh Chandra Committee Task Force report. It was apparently due to a perceived clash of responsibilities between the NSA and the CDS. In 2018, the Government set up a new body called the Defence Planning Committee (DPC) under the NSA. The Members include the three Service Chiefs and the Secretaries of Defence, Home, and Finance. The CISC is the Member Secretary, and the HQ IDS provides the secretariat to this committee (Dua, 2019, p. 65). The DPC has four sub-committees dealing with drafting the national security strategy, drawing up a capability development plan, conducting defence diplomacy and encouraging defence manufacturing in the country (Behera, 2018).

These were primarily some of the tasks mandated for the CDS by various committees. The Indian NSA is also mandated to meet other countries' NSA independently or on the sidelines of various vital meetings. The NSCS provides secretarial support to the NSA on all security and strategic matters. The Govt has upgraded the post of NSA to a Cabinet Minister. The qualitative professional interaction between the NSA as Chairman of the Defence Planning Committee and head of the National Security Council, with the military leadership has a direct bearing on the military capacity building and efficacy of joint coordination and planning during major national and international security crises.

Protocol Issues: The CDS being of the same rank as the Service Chiefs, is equivalent to the Cabinet Secretary, while in his dual role as Secretary DMA, he holds the post equivalent to a Defence Secretary. This anomaly posed many misgivings and ill feelings during ceremonial functions, where the Defence Secretary had to stand at No five after the CDS and the three Service Chiefs. There is a long-term issue regarding the status of Armed Forces officers vis-à-vis civilian bureaucrats (Mukherjee, 2020, p. 93). This issue will affect staffing in the DMA since Armed Forces officers of the flag ranks (Brigadiers/Major Generals/ Lt Generals and equivalent) may find it difficult to fit into the civilian bureaucracy. There are also tenure issues for Armed Forces officers posted in the DMA. These need to be coordinated to meet those of civilians (Menon, 2020, pp. 8-9).

3.5 Emerging Issues

Late General Bipin Rawat, the former CDS, had correctly analysed the limitations of the country's defence potential. Accordingly, he ushered many initiatives to transform the Armed Forces to prepare it for the 21st-century warfare. Certain aspects that merit attention are given in succeeding paras.

Theatre Commands: The CDS was mandated to establish ITCs (Integrated Theatre Commands) and other joint commands in the next three years. However, there were many professional disagreements with the Air Force for establishing integrated Air Defence Command and with the Navy for the integrated Maritime Command. The creation of an Air Defence Command has become singularly controversial, with strongly opposing views even within the strategic community (Chadha, 2021, pp. 93-105). There were considerable differences even in benign joint training and communication issues (Chadha, 2021, p. 55). It is important to consider the professional views of the Air Force and Navy, primarily based on assessed military objectives in war, resource constraints and the capacity of existing higher leadership to undertake professional decisions of joint warfare. There will need to be a significant change in management and reorientation of human resources, doctrine and training policies. The Government will need to make budget allocations (Singh, 2021).

Inter-Ministerial Coordination: The office of the DMA has made considerable progress in establishing the necessary mechanism of coordination with other Ministries. There is a wider realisation that National Security is today multi-dimensional, involving cyber, economy, food, energy, disasters etc. The DMA has an important role to play in finding an adequate level playing field in interaction with other Ministries and Departments of the Govt in sectors of responsibilities specifically assigned to them while ensuring the sectors assigned to other Secretaries of the MoD are not overlapped.

Post the First CDS: The first CDS, Gen Bipin Rawat, died on 8 Dec 2022 in a crash of an Indian Air Force helicopter (News Services Division, 2021). The untimely passing of General Bipin Rawat was a big shock to the country and the institution of the CDS. The Government solemnised his funeral procession with grace and high military decorum, befitting a serving General (Doordarshan National, 2021). Instead, the previous Govts had not even extended such honour to Late Field Marshals Manekshaw or Cariappa. However, the post remained vacant for eight months after Gen Rawat's death. The Government has appointed Gen Anil Chauhan, PYSM, UYSM, YSM, SM, and VSM as CDS on 30 Sep 2022. He was the former General Officer Commanding-in-Chief of the Eastern Command and a former Director General of Military Operations (DGMO) (Ministry of Defence, 2022). Post-retirement,

he was Military Adviser in the National Security Council Secretariate (NSCS) and National Security Advisory Board (NSAB). This is the first time an Army Commander (Lt General) has been elevated to a General rank post-retirement by amending the eligibility criteria for the post of CDS. Notwithstanding his elevation post-retirement, he remained fully updated with the transformation and modernisation of the Armed Forces due to his previous assignment. It is recommended that the following issues are given priority by the new CDS:

(a) The vision and doctrine of employment and deployment of land theatre command considering the emerging dimensions of continental challenges. The assertive and, at times, aggressive posture of our northern adversary can only be ignored at the country's peril. Loss of sovereignty in any measure can have serious consequences for the political leadership with attenuating effects on the country's progress and development and its position in the comity of nations.

(b) The transition of the centre of gravity of threat perception to maritime and coastal dimensions to offset or countervail a continental threat assumes significance due to emerging geo-political and politico-military alliances with other friendly countries. Hence joint operability with other Armed Forces, especially with the Navy and Air Force, will be of paramount importance. Such synergy cannot be achieved without internal jointness amongst the Services.

(c) Asymmetric, Cyber and Space warfare have evolved with the rapid development of technology in the last two decades. The Armed Forces must closely work with multiple agencies of the Govt and other Govts for intelligence sharing, frequency matching and aerial divisions for space warfare. The proposed Air Defence Command and Space Command will be essential to address the multi-dimensional threats.

(d) Resources of the Air Force and its ability to distribute its meagre resources are a matter of concern. The IAF's capabilities are yet to meet its basic operational needs. The CDS will need to concentrate on employing assets like Airborne Warning and Control System (AWACS), Airborne Early Warning and Control System (AEW&CS) and air-to-air refuellers to the proposed Integrated Theatre command, Maritime Commands, Air Defence Commands, strategic targeting, and counter-air operations. A very close coordination with the air assets of all three services is essential to optimise the creation of the joint commands. This challenge needs to be apprised to the CCS for necessary budgetary allocation and inter-ministerial support

(e) Role of Strategic Forces Command is likely to be a game changer in the Indo-Pacific. The CDS needs to integrate the strategic special forces capabilities of all three Services and, if need be, of the Para-Military and Police Forces of the States to effectively meet the challenges in the oceans and the land. Hence, adequate focus on its capability development and employment doctrines is required to be prepared.

(h) Secretary, Department of Military Affairs (DMA) has been vested with responsibilities of HR management of higher leadership of all three Services. This is a very delicate matter considering the deep selection process that the Armed Forces undertake to select its officers for higher responsibilities. It needs the highest amount of transparency and probity with a robust grievance system. Transformation to the selection system of officers, Confidential Report assessment system and optimal employment of non-empanelled officers are some of the issues that need to be taken on priority.

3.6 Conclusion

India is racing to fill the transformational gap with the rapid military modernisation of our adversaries beyond the physical domains of air, land, sea and space and shift the battle domains to electromagnetic and information environments, cognitive dimensions and cyberspace. Proposed rapid transformation spearheaded by the former CDS can get derailed as there remains a vast chasm between tactical service narratives and strategic requirements. India should attempt to make the creation of the CDS and DMA a Goldwater- Nichols Movement and move towards joint warfighting (Gnanaprakasam, 2022). Chris Dougherty of the Centre for New American Security recommends "India to take a deep dive into tenets of organisational theory and joint principles (Dougherty, 2019).

Principles of Jointness, as enunciated by Captain Robert C Rubel, a former US Navy fighter pilot, also recommends in his Hierarchy Principle that the "degree of jointness is inversely proportional to the number of command echelons" and warns about 'Integration' fraught with hazards (Rubel, 2002). Logistics can become cumbersome, and formation efficacy can be impaired, despite the additive effects of attached elements (Pillai, 2022)". Hence, the CDS must take note of the overall nuances of jointness in the context of subcontinental realities and moderate the creation of proposed joint/integrated command structures with consensus and due diligence.

Deployment of technologies like edge computing, artificial intelligence, and machine learning at tactical and operational levels, as seen in the recent war in Ukraine, has helped quickly identify the enemy, even hiding in civilian areas and bringing down rapid destruction without much collateral damage. Technology deployment must ensure success in multi-domain operations, ignoring the mindsets of single-service parochialism, and improve essential competencies in modern battle spaces, including the grey zone. There is a need to synergise the civilian-military interface for optimal technology deployment.

It is for the Govt to ensure that the institution of the Chief of Defence Staff (CDS) remains fully functional to meet the strategic security needs of the country in this century. As India is rapidly moving to become one of the top five economies of the world, exhibiting its unfathomable resilience against adversities of the pandemic, natural disasters, and threats to sovereignty, it is imperative that our organisational limitations in higher defence leadership are addressed with maturity by the political authorities and the bureaucracy. This, in fact, would be the litmus test of civil-military relations in the post-independent India.

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Section 4

HIGHER DIRECTION OF WAR IN INDIA

Maj Gen AK Chaturvedi, AVSM, VSM (Veteran)

*"Higher Defence Management usually conjures images of only the military, but this is incorrect as Defence Management encompasses much more. No doubt, the Indian military is a significant player in this endeavour, but unless all Instruments of the Nation are brought together, the concept of Higher Defence will remain incomplete" (**Oberoi, 2015**)*

- Lt Gen Vijay Oberoi (Retd)



4.1 Introduction

Warfare has evolved over a period of time. It is no longer unidimensional. Now it entails the application of the comprehensive national power (CNP) of a country against the CNP of its adversary. The victory comes to that side which can optimise its resources better and sustain the conflict for a period longer than the anticipated time for which the adversary can retain the capability to respond effectively. This flags the critical aspect of the organisation necessary to control/ command the engagement. This organisation should be such that it can operate efficiently in terms of resources and can exploit those resources optimally for a coordinated response to achieve its strategic objectives.

It is often said that the result of the 1962 War with China could have been different if India had decided to use its Air Force (IAF) against the advancing Chinese troops and disrupt the logistic supply chain of the advancing troops. However, hesitation on the part of India in that war to use IAF in an offensive role resulted in India paying a hefty price. Although it would amount to being wiser in hindsight, it probably happened for four reasons. Firstly, there was a disconnect between the political objective (trying to avoid enlarging the scope of war and fear of Chinese retaliation) and the military objective (the need to disrupt Chinese advance). Secondly, the Armed Forces probably had not war-gamed the consequences of the employment of the IAF (as such, they did not push too hard to use IAF for offensive tasks). Thirdly, absence of a robust mechanism of consultation between the political decision-making and the military advice within the Defence Services (Subramaniam, 2016). All these indicate an absence of a well-oiled decision-making mechanism wherein all relevant inputs are processed on a real-time basis to arrive at a response strategy which calls for the optimal application of all available resources. History is replete with such examples wherein the outcome of an engagement was decided based on the capability of a country to employ all possible resources with due coordination under an inspiring leadership and a clear-cut military objective which is in sync with the political directive.

India fought the 1971 War with due coordination under a decisive political leadership and a great military leader, General (later Field Marshal) Manekshaw, who coordinated well with the other two Services under the equally inspiring leadership of Admiral SM Nanda and Air Chief Marshal PC Lal. Although the Services were not yet integrated, good coordination between the Defence Services and Services and the political decision-making helped India to defeat Pakistan comprehensively (Subramaniam, 2016, pp. 362-363). It is important to realise that the political objective was apparent during this war. Enough efforts prior to the war had been made to garner global support by the Prime Minister herself and efforts by the Ministry of External Affairs (MEA), which finally resulted in a Treaty of Peace, Friendship, and Cooperation signed between India and the erstwhile Soviet Union in Aug 1971, which was enough of a shield against the likely US response, in case of hostilities.

The decision-making was also collective. In this connection, the advice of the then Raksha Mantri (RM), based on the assessed response of China and that of the Army Chief about the timing of the launch of the offensive, was considered by the PM. The outcome of the operations was, beyond doubt, on account of excellent cooperation and coordination between the three services. It must be noted that though no formal mechanism existed for the higher directions of war, the seamless integration of the higher direction of the war was due to an astute political sagacity and an excellent personal chemistry/ commitment to the national cause between the service chiefs.

Post-1971, once again, the three Services returned to prepare for future wars as per their respective perception of the future battlefield and their respective roles in the execution of the war. Although there was a Chiefs of Staff Committee (COSC) whose Chairman used to be a four-star officer (Senior most Service Chief), the position was not a statutory office. However, it was a title held by the senior most serving military officer. Thus, this position was held by the seniormost service chief (seniority reckoned from the date of assumption of the office of the Chief) of any of the three services of India at a point in time. The Chairman used to chair the COSC and served as the principal adviser to the PM and the RM. In the absence of any statutory authority, it had its limitation. This limitation did impact the coordination among the three services to achieve the due synergy for an integrated response. At best, it was an ad-hoc arrangement which functioned based on the sagacity of the three Service Chiefs.

4.2 Responsibility for the Defence of India

Defending India is the responsibility of the Government of India (GoI). The Supreme Command of the Armed Forces vests in the President. The responsibility for national Defence rests with the Cabinet (further delegated to the Cabinet Committee on Security). This is discharged through the Ministry of Defence (MoD), which provides the policy framework and wherewithal to the Armed Forces to discharge their responsibilities. The Defence Minister (known as RM) is the head of the MoD. The MoD is responsible for obtaining policy directions from the Government on all Defence and security-related matters and communicating them for implementation to the Services Headquarters, Inter-Services Organisations, Production Establishments and Research & Development Organisations. It is also required to ensure the effective implementation of the Government's policy directions and the execution of approved programmes within the allocated resources. The MoD consists of; the Department of Defence (DOD), the Department of Defence Production (DDP); the Department of Defence Research & Development (DDR&D); the Department of Ex-Servicemen Welfare and Finance Division. The Department of Military Affairs (DMA) is the sixth department, which was added in 2019. It is headed by the Chief of Defence Staff (CDS) as its ex-officio secretary. The DMA provides integration between the armed forces of the Union and the Ministry of Defence. (Ministry of Defence, 2022).

4.3 Historical background

A Military Department was created as part of the Supreme Government of the East India Company in 1776. The primary function of this department was to sift and record orders relating to the Army issued by various Departments of the Govt of East India Company. With the Charter Act of 1833, the Secretariat of the Government of East India Company was reorganised into four Departments, including a Military Department, each headed by a Secretary to the Government. For administrative convenience, it was divided into four Commands viz. Punjab (including the North West Frontier), Bengal, Madras (including Burma) and Bombay (including Sind, Quetta and Aden).

The Army in the Presidencies of Bengal, Bombay & Madras functioned as respective Presidency Army till April 1895, when the Presidency Armies were unified into a single British Indian Army. The supreme authority over the Indian Army vested in the Governor General-in-Council, subject to the Control of the Crown, exercised by the Secretary of State for India. Two Members of the Council were responsible for military affairs, one of whom was the Military Member who supervised all administrative and financial matters. At the same time, the other was the Commander-in-Chief, who was responsible for all operational matters.

It must be noted that even in the beginning, thought was on integrated management of the Armed Forces. The Military Department was abolished in March 1906, and it was replaced by two separate Departments, the 'Army Department' and the 'Military Supply Department'. In April 1909, the Military Supply Department was also abolished, and the Army Department itself took over its functions. The Army Department was redesignated as the Defence Department in January 1938. The Department of Defence (DOD) became the MoD under a Cabinet Minister in August 1947 (Ministry of Defence, 2022).

Organisational Set-Up and the Growth of the Setup over the Years: After India's Independence, the MoD was created under the charge of a Cabinet Minister. Each Service was placed under its Commander-in-Chief. In 1955, the Commanders-in-Chief were renamed the Chief of the Army Staff, the Chief of the Naval Staff and the Chief of the Air Staff, respectively. In November 1962, a Department of Defence Production (DDP) was set up to develop and produce defence equipment. In November 1965, the Department of Defence Supplies was created to plan and execute schemes for import substitution of defence requirements. These two Departments were later merged to form the Department of Defence Production and Supplies (DDP&S). In 2004, the name of DDP&S was changed to the Department of Defence Production (DDP). In 1980, the Department of Defence Research and Development was created (DODR&D). While In 2004, the Department of Ex-Servicemen Welfare was created. Another Department, i.e. Department of Military Affairs (DMA), was created in December 2019 (Ministry of Defence, 2022). The Defence Secretary functions as head of the DOD and is additionally responsible for coordinating the activities of the five Departments and the finance division in the MoD.

Is the Defence Secretary Responsible for the Defence of India- Myth or Fact? There is a need to dispel the myth that the Defence Secretary is responsible for the country's Defence. In this connection, the Transaction of the Business Rules-1961 and Allocation of the Business Rules -1961 amended from time to time are relevant. As per Rule 3 of the Transaction of Business Rules 1961, all business allocated under the allocation of business Rules shall be disposed of by or under the general or special directions of the Minister In-charge (Cabinet Secretariat, 2020). According to the Allocation of Business Rules- 1961, as amended up to 30 Dec 2019, the DOD is responsible for the Defence of India and every part thereof, including preparation for the Defence (Cabinet Secretariat, 2019). Thus, the responsibility of Defence is that of the RM and not that of anyone else.

Origin of National Security Architecture: In December 1998, the Government of India set up a 'Special Task Force headed by Shri K. C. Pant, the then Deputy Chairman of the Planning Commission, to recommend a national security management system for India, drawing upon the experience of such systems in other countries. The Task Force suggested a three-tier structure consisting of a National Security Council (NSC), a Strategic Policy Group (SPG) and a National Security Advisory Board (NSAB) (National Security Advisory Board, 2017). The recommendation of the Task Force was approved.

4.4 Kargil War and Review Committee

In the year 1999 CE, the Kargil War happened. By now, the battlefield had substantially changed due to revolutions in Military Affairs (RMA). The introduction of new and better equipment revolutionised the system of Intelligence and Surveillance. However, at this point, the Indian Armed Forces had been suffering from acute equipment shortages. Although India managed to force the intruders to vacate the heights occupied by the latter, it was more on account of the personal valour of the troops, the commitment of the junior leadership, a professional offensive operation by the IAF and the maritime blockade to choke trade routes to Pakistan. However, many gaps were noticed in the organisation of the Armed Forces, like its linkage with the MoD, the acquisition system for the equipment and the infirmities in the intelligence acquisition, to name a few. Also, the perceptual incongruence in the strategic response to existing/

developing security situations between the Services was quite wide. No wonder Airforce and Navy had their perceptions and their concept of response.

Kargil Review Committee (KRC): The GoI and the MoD realised that there were many areas which needed improvement to get ready for technology-driven battlefields of the future, where all elements of power will have to be coordinated to present a seamless response. Post cessation of hostilities, a review committee was set up by the GoI on 29 Jul 1999, just three days after the declaration of the end of the Kargil War. The Committee was aptly named KRC. The Committee had a twin mandate "to examine the sequence of events and make recommendations for the future". (Kargil Review Committee, 2000). Sri Brajesh Mishra, the National Security Advisor, then assisted in establishing the KRC (Gupta, 2012). The composition of the KRC was as follows: -

1. Sri K Subrahmanyam- Chairman.
2. Lt Gen KK Hazari- Member.
3. Sri BG Varghese- Member.
4. Sri Satish Chandra- Member Secretary.

Some of the important observations of the KRC were as follows: -

1. The original framework was suggested by General Hastings Ismay, the Chief of Staff to Lord Mountbatten at the time of Independence. Lord Mountbatten, Governor General at that time, forwarded this framework with his recommendation to the Government of India (Chandrashekhar, 2017, p. 30). This framework was approved by the GoI and became the basic structure on which India's Defence was based. It remained in place for a long time and has undergone minimal changes since its incorporation.
2. The security environment of India has been such (unstable borders with both China and Pakistan) that India had to go through the Indo-China war of 1962, the Indo- Pak war of 1965 and the Indo-Pak war of 1971. However, the original framework continued to remain in place, despite changes happening in the equipment profile, means of mobility, intelligence acquisition & Surveillance and communication systems, to name a few areas.
3. India went through nuclear tests on two occasions (1974 and 1998), which added a new dimension to India's capability. However, several sanctions were consequently imposed against India on both occasions. These sanctions impacted India's efforts to get battle ready to face challenges to her National Security through conventional means.
4. A significant development during this period (1989 onwards) was the rise in an insurgency in the State of J&K with abetment from Pakistan. The cross border terrorism developed into a major cause of concern and forced India to divert substantial effort and resources to deal with this new operational challenge. India had to form a dedicated organisation (Rashtriya Rifles) to deal with the scourge of terrorism (Subramaniam, 2020).
5. During the same period, the world saw many technology-driven revolutions in military hardware, which could impact future warfare. However, somehow India needed to catch up with RMA. The reasons were many. Some of the important ones were; firstly, a war against terrorism called for different kinds of preparation, organisation and equipment profile. Secondly, India was initially

recovering from a drought-affected economy, and suddenly in 1991, the Indian economy was hit by a major financial crisis. The situation was terrible to the extent that India was forced to mortgage gold reserves to escape the crisis. As such, the Government's emphasis then was more on welfare schemes rather than defence preparation.

6. Although some incremental changes to the National Security Framework took place occasionally, no significant reforms were introduced. Probably, Defence, then, was not considered a priority sector. The incremental changes referred to above were generally introduced after the India-China War of 1962. These were:-
   - Firstly, the introduction of a system of defence plans based on the projected requirement for a period of the next five years.
   - Secondly, specific organisations like; DDP and, after that Defence
   - Research and Development organisations (DRDO) were added to the MoD.
   - Thirdly, respective Service HQs established Planning cells/ planning units, and
   - Finally, in 1988, the Directorate General of Defence Planning Staff (DGDPS), composed of officers of various services, was formed to synergise defence planning under the Chiefs of Staff Committee (COSC) (Kanwal, 2013).

Needless to reiterate, the Kargil war's outcome was more based on reasons other than an efficient organisational response. As referred earlier, some of the crucial infirmities experienced at that time were; an intelligence failure, shortage of equipment and finally, less than effective coordination among the three Services. Pakistan was defeated due to grit, determination and outstanding professionalism displayed by units/sub-units and individual valour. IAF and the Indian Navy played important roles in breaking the will of the intruders, and Indian diplomacy played a significant role in helping India to get the global opinion veering in India's favour. (Subramaniam, 2020, p. Ch 16).

Action on KRC: Overall, the KRC recommendations were in many areas. To review the recommendations of the KRC, the CCS ordered a Group of Ministers (GoM) comprising the ministers of home affairs, Defence, external affairs and finance as members. The NSA then was also part of this GOM as a special invitee. The Cabinet Secretariat was tasked to provide necessary secretarial support to the GOM (Government of India, 2001, p. Para 6.19). The GOM established many Task Forces (TFs) based on the recommendations of the KRC. The areas assigned to various TFs were Intelligence, Internal Security, Border Management and the Management of Defence. Based on the deliberations/ recommendations of these TFs, the GOM came out with its report titled "Reforming the National Security System" (Rana, 2016). The report was finally presented to the PM on 26 Feb 2001 (Government of India, 2001). The report reviewed the national security architecture. A large number of recommendations were made by this report, especially those related to the creation/ establishment of organisations which have already been implemented. Some of these were as follows: -

1. Institution of the appointment of a full-time NSA (HQ IDS, 2017).
2. Establishment of the National Technical Research Organisation (NTRO) (Bedi, 2008)
3. Establishment of Integrated Defence Staff (IDS) HQ with the Chief of Defence Staff (CDS) as its head (the Integrated Defence Staff was established vide the Government of India, Ministry of Defence letter

No MoD/IC/1027/32/IDS/5843/2001 dated 23 Nov 2001 (Integrated Defence Staff, 2001)., However, the appointment of the CDS still needed to be cleared at that time. The Chief of Staff headed it to the Chairman of COSC (CISC). This appointment was tenanted by a three-star officer of the rank of an Army Commander or an equivalent officer from the Indian Navy (IN) or Indian Air Force (IAF).

4. Establishment of a Defence Intelligence Agency (DIA) under HQ IDS (HQ IDS, 2017, p. 43).
5. Establishment of a think tank named Centre for Joint Warfare Studies (CENJOWS, 2022)
6. Formation of Andaman and Nicobar Command (ANC) is a Tri-service Command based at Port Blair, which has IG Indian Coast Guard (ICG), Port Blair, under its command (IDS, 2022).
7. Strategic Force Command (SFC).
8. Nuclear Command Authority (NCA) (HQ IDS, 2017, pp. 36-37).
9. Department of Ex-Servicemen Welfare in the MoD.
10. The Defence Technology Council (DTC) (HQ IDS, 2017, p. 32).
11. The Defence Acquisition Council (DAC) (HQ IDS, 2017, p. 48).

These organisations indeed added value to the inputs for the RM. These inputs from various organisations were collated at HQ IDS. Thereafter presented to the Chairman of the COSC and, after that, to the RM. However, herein lay a catch. The Chairman COSC did not have statutory powers, which flagged the need for the CDS as a vital link between the Services and the RM and through RM to the CCS.

4.5 Subsequent Developments

On July 2007, the Standing Committee on Defence of the Ministry of Defence (SCOD) presented a report titled "Review of Implementation Status of the GoM Report on Reforming National Security System in Pursuance to Kargil Review Committee Report—A Special Reference to Management of Defence" as a follow up to the Kargil Review Committee report and the Group of Minister report (Standing Committee on Defence, 2007). Some of the important issues flagged by this report were as follows: -

1. While approving the recommendations of the GoM, the recommendation concerning the institution of CDS was recommended to be referred to other political parties for broader consultation and consensus building. There was a lack of consensus, which kept the matter pending for the next 12 years. Finally, the appointment of CDS was cleared by the CCS only on 24 Dec 2019. CDS is meant to be the Chief Military Advisor to the RM. Besides that, the primary roles of the CDS are to be the permanent Chairman of the COSC and Secretary DMA.
2. KRC had observed a serious lack of synergy amongst the three services and also a lack of coordination between the Armed Forces and Civil Authorities-
    a. The integration of three services still needed to be completed, though certain jointness indeed had come in the form of Joint Commands like ANC, SFC and HQ IDS, but much more was needed. Services had their mindsets, many times based on narrow parochialism. Therefore, the integration could either be done through an act of Parliament or a govt order. In the USA, it was done through the Goldwater Nichols Act -1986 and in the UK, another democracy, through central legislation. The system in both countries has stood the test of time. In the US, it has been in vogue for over 36

years. In the case of the UK, it has been there for 58 years). The best thing is that their systems have evolved over a while, and as such, all possible infirmities have generally been fully addressed. In the case of non-democratic countries, the integration was done by government order, as was done by the People's Republic of China (CMC Report of 2019).

b. Although Service HQs have graduated on paper from attached offices to the status of Integrated HQ of MoD, in reality, more progress has yet to be achieved so far as the integration is concerned. This integration will likely be possible once the concept of cross-staffing in MoD is implemented.

3. DIA, formed under the HQ IDS, coordinates with R&AW, NTRO and IB, among other intelligence agencies- This arrangement appears to be making steady progress. However, coordination with the intelligence branches of the various Service HQs and other CAPFs operating in the area needs to be more seamless. Here again, the analytical part of JIC needed to have assessed the Chinese intentions during the summer of 2020 when they intruded in Galwan and on the Northern Bank of Pangong Tso.
4. The GOM had recommended that the Defence Secretary officially be designated as the Principal Defence Advisor in Standing Order. However, this recommendation has yet to be rightly approved by the MoD. (Standing Committee on Defence, 2007, p. 15)- With the activation of DMA, it is also not required because, in that case, the existing confusion between the responsibilities and accountability of DMA and DOD is likely to get accentuated.

National Security Task Force 2011-:popularly known as the Naresh Chandra Committee (NCC) was constituted by the GoI in July 2011, and the Committee submitted its report to the then PM at the end of May 2012. After that, the report was handed over to the National Security Council Secretariat (NSCS) to process. The mandate of the NCC was to focus on all kinds of external threats, internal challenges, and external resource constraints that could affect India's development and the threats to the strategic infrastructure, physical as well as cyber. Naresh Chandra chaired the NSTF, former Cabinet Secretary, former Service Chiefs Admiral Arun Prakash and Air Chief Marshal S Krishnaswamy, Ambassador G Parthasarathy, former R&AW Chief KC Verma, former Director Intelligence Bureau PC Haldar, former Chief of the Department of the Atomic Energy Anil Kakodkar, former Home Secretary VK Duggal, Brijeshwar Singh, a former civil servant, former police officers D Sivanandan, RV Raju, Lt Gen VR Raghvan, economist Suman Berry and journalist Manoj Joshi. (Joshi, 2014).

As far as organisational issues were concerned following recommendations are of relevance (Joshi, 2014): -

1. It related to the appointment of a Chief of Defence Staff (CDS)- Keeping in view the lack of consensus on the institution of the appointment among the political parties and also a perceptual incongruence among the services, the NCC recommended that the Government should create the position of a Permanent Chairman of the Chiefs of Staff Committee (COSC). This would provide a fourth four-star officer to the COSC, who would be primus inter pares among the chiefs of staff of the three services. He would be assisted by a 3-star chief of staff heading the existing Integrated Defence Staff (IDS) (Joshi, 2014, p. 2). It is the same that finally came up in Jan 2020.
2. Yet another important recommendation has been for integrating the armed forces headquarters with the MoD related to functional integration and cross-staffing, which would see military personnel

included in the chain of command of the Defence Secretary's office and civilian officers in the Service headquarters. The leaked portion of the NCC noted that the Defence Secretary "needs to have a good mix of uniformed personnel and civilians at all verticals. Preferably, a special cadre of Defence specialists should be introduced into the civil Service to ensure knowledge build-up among the civilian staff." (Joshi, 2014, p. 3). However, nothing much appears to have been done in this direction). The 'Us' and 'They' syndrome still exists in this domain. Here it should also be noted that at the decision-making level in the MoD (Joint Secretary level), the decision-making will only be disjointed if a specialised cadre is created. Delays would be expected because most decisions will be made from the mindset of avoidance of 'Fear of Failure'.

3. While the task force did not delve too deeply into the functioning of India's foreign policy, the Ministry of External Affairs (MEA), and the institutions associated with it, it did make recommendations for better coordination and management of politico-military issues involving the MEA and MoD (Joshi, 2014, p. 4). A cell acting as an interface between the MoD and the MEA must be created within the MoD. It can be staffed by MEA personnel from the. This cell should also have certain Service officers who can help the MoD and the MEA to progress the needs of import of the equipment more efficiently. Please note that this cell should be in addition to the DG acquisition.

4.6 Recent Developments

Finally, the PM announced the decision to institute the position of CDS during his Independence Day speech on 15 Aug 2019 from the rampart of the Red Fort. Following the announcement, a committee was announced on 23 Aug 2019 under the NSA, consisting of the Cabinet Secretary, the Defence Secretary and the Chairman of COSC, among others. This Committee would decide upon the powers of the CDS. It was to submit its report within six weeks (Gupta, 2012). The Committee completed its task by November 2019 and submitted the report for the consideration of the CCS. Finally, CCS 24 Dec cleared the appointment (Press Information Bureau, 2019). Late General Bipin Rawat, PVSM, UYSM, AVSM, YSM, SM, the then COAS, was appointed as the first CDS with effect from 01 Jan 2020 (Press Information Bureau, 2020).

Role and Responsibility: The CDS is a dual-hatted appointment. As the permanent Chairman of the COSC, the CDS will be expected to promote jointness and integration. He is also the principal military adviser to the Raksha Mantri. The CDS will now have a tenured appointment up to the age of 65 years. The scope of his work is as follows: -

1. All purely military matters, including the territorial Army, jointness in tri-service matters about Training, transport, staffing, logistics, communications, repairs & maintenance and even jointness in procurement is part of the DMA's charter and by implication by the CDS hereafter.
2. The CDS is also a member of the Defence Planning Committee (DPC) and the Defence Acquisition Council (DAC). In addition, he will function as the military adviser to the Nuclear Command Authority (NCA).
3. He is required to ensure optimal infrastructure utilisation, facilitate restructuring military commands, establish joint/theatre commands, promote indigenisation and work on "out-of-area contingencies". Preparation of strategy papers and rationalisation and reforms in the functioning of the armed forces would be part of his mandate.

Status of the CDS in Hierarchy of the MoD: The appointment of the CDS heads of the recently created DMA within the existing establishment of the MoD. This department is in addition to the existing departments of; the Department of Defence; Department of Defence Production; Department of Ex-Servicemen Welfare, the DRDO and the Department of Defence Finance. However, the status of the CDS is at par with the Service Chiefs and, as such senior to the Defence Secretary. As such, the CDS, as head of the DMA, reports to the RM directly. As explained earlier, this arrangement could create confusion at the functional level, where a certain synergy is necessary between DMA and the Department of Defence, headed by the Defence Secretary himself. Probably GoI was also seized with the issue, and the post remained vacant for over nine months after the tragic death of the first CDS Gen Bipin Rawat. After due deliberations, finally, GoI changed the criteria in Jun 2022 for the appointment of the CDS. As per notifications issued by the MoD on 07 Jun 2022, officers from all three services are required to meet the two qualifications broadly: first, an officer must be either serving or retired, in the rank of general or lieutenant general or their equivalent in other two services and second, his age should be below 62 years on the date of his appointment. Also, the GoI reserves the right to extend the tenure of the CDS to a maximum of 65 years (All India Radio, 2022).

Finally, with effect from 28 Sep 2022, Lt Gen Anil Chauhan, PVSM, UYSM, AVSM, SM, VSM (Retired) assumed the appointment of the CDS in the rank of a General (Four-star), with the same powers as was the mandate of his predecessor (HQ IDS, 2022).

The appointment of General Anil Chauhan is being interpreted differently, depending on whether one is with the decision or against it. Those who are with the decision feel that it is the prerogative of the GoI to have rules for the CDS as they deem appropriate, so long it helps in selecting the right man for the job, and deep selection is always better. Those who are cynical about the change in rules and selection of the new CDS suspect that the new set of rules has been made essentially to facilitate the selection of Gen Chauhan. Only time will tell whether the decision to appoint Gen Chauhan resulted from a well-considered policy or whether new rules were formed to facilitate Gen Chauhan's selection. Here it must be considered that while Gen Chauhan has very impressive credentials, like his predecessor, he also needed to gain experience working in a Tri-Service environment. Such a limitation will have inevitable repercussions for dealing with situations needing a tri-services response. It is recommended that the MoD consider another rule, which stipulates that those officers with the potential to grow to senior ranks should have exposure to appointments in a Tri-service environment at various stages of their careers. An empowered CDS must be essential not only to advise the RM and through RM to the CCS on all issues related to the Defence of the country across the entire spectrum. He also enjoys credibility while dealing with Services other than his Service.

Be as it may, the fact remains that filling this appointment will once again give impetus to the structural reforms which are essential for the better and more effective management of Defence in the country and enhancing the jointness among the services for enhancing operational effectiveness. It must be noted that many of these tasks, like Theatre commands, were at various stages of implementation during the tenure of the Late Gen Bipin Rawat but had come to a grinding halt when Gen Rawat died in a tragic accident.

4.7 CDS Vs Defence Secretary: Need for Clarity!

The gazette order dated 30 Dec 2019 amended the relevant 'Rules of Business. As per this order, four responsibilities of the DOD were allocated to the DMA. These were matters related to the three Services, the respective Service HQs, the Territorial Army and works related to the three Services. As such, the CDS was responsible for non-capital procurement, promoting 'Jointness in Procurement' among the three Services, 'Training, less management of the National Defence College (NDC, 2022) and the Manohar Parrikar Institute of Defence Studies and Analyses (MPIDSA, 2022), operations and encouraging the use of Indigenous equipment (Cabinet Secretariat, 2019).

However, the Defence secretary retained the policy matters and major equipment procurement. Here it needs to be noted that as per the amended charter of the 'Raksha Vibhag (MoD)', the "Defence of India and every part thereof including defence policy and preparation of a defence and all such acts as may be conducive in times of war to its prosecution and after its termination to effective demobilisation", continues to remain with the MoD/DOD.

To further add to the confusion, while all departments in the MoD are headed by a secretary-level officer, with the Defence Secretary being first among the equals, the CDS heading the DMA has been accorded the status of the Cabinet Secretary, like three Service Chiefs and he has been mandated to report to the RM directly.

The following areas need clarity:

1. The arrangement is such that the Defence Secretary still has primacy in running the MoD. This division of responsibility is rather messy. The MoD is responsible for the Defence of the country, and the Defence Secretary being head of the DOD, de facto, becomes responsible for the Defence of the country. Such a state will result in a clash of accountability vs responsibility between the CDS and the Defence Secretary.
2. Procurement is a monolithic activity. Therefore, it would be better if all kinds of procurement were assigned to one agency. Here it needs to be also considered that the equipment required is a function of the operational tasking. Since operational responsibility is with the CDS, the entire procurement should be part of the charter of the responsibility of the CDS.
3. Keeping NDC and the MPIDSA with the Defence Secretary makes sense because both these institutions deal in areas of Training which are often beyond military matters.

4.8 Current Higher National Security Set up in India

Cabinet Committee on Security (CCS): Although the President of India is the supreme commander of the Indian Armed Forces, the supreme decision-maker in India is the Prime Minister. He heads the CCS, comprising ministers of Defence, home, external affairs and finance. The National Security Advisor (NSA), a cabinet minister, also attends the CCS meetings and assists the CCS in decision-making. The NSA also oversees the working of the Research & Analysis Wing (R&AW) and the Intelligence Bureau (IB), the two intelligence agencies for external and internal intelligence, respectively. Cabinet Secretary and Defence Secretary are also attendees of the CCS meetings.

National Security Council: The National Security Council (NSC) is an executive government agency tasked with advising the Prime Minister's Office on national security and strategic interest. It is the apex body of the three-tiered structure of India's national security management system. Although the PM heads this organisation, the NSA is responsible for today's functioning of the Council.

Strategic Policy Group (SPG): The Strategic Policy Group is the first level of the three-tier structure of the National Security Council. It undertakes the Strategic Defence Review, a blueprint of short and long-term security threats and possible policy options on a priority basis. Overall it forms the nucleus of the decision-making apparatus of the NSC. The NSA is the Chairman of the group. It consists of; the Vice Chairman of the Niti Aayog, the Cabinet Secretary, CDS; the three Service Chiefs, the Governor of the RBI; Secretaries; Defence, Home Finance and External Affairs, the Head of R&AW; DG DIA, Director IB, Chairman Central Board of Direct Taxes, Secretary Defence Production, Scientific Advisor to the RM and Chairman of the DRDO, Secretary Atomic Energy, Secretary Space and Chairman ISRO (HQ IDS, 2017, p. 33).

As can be seen, the composition of this group is meant to provide linkages between the Armed Forces and the Bureaucracy. The aim and scope of this group entail providing advice on security matters and nuclear issues to the PMO and the CCS, and the composition ensures that the advice is comprehensive.

National Security Advisory Board (NSAB): The National Security Advisory Board (NSAB) consists of a group of eminent national security experts outside the Government. Members are usually senior retired officials, civilian and military, academicians and distinguished members of civil society, drawn from the society and having expertise in Internal and External Security, Foreign Affairs, Defence, Science & Technology and Economic Affairs. The frequency of the board meetings is at least once a month. However, if required, it can meet more frequently. The mandate of this body is to provide a long-term prognosis and analysis to the NSC and recommend solutions to the issues referred to it. Initially, the tenure of the Board was fixed as one year. However, since 2004-06, it has been revised to two years (National Security Advisory Board, 2017). A total of 14 eminent persons are appointed as members of the NSAB. Since 2018, it has been headed by Sri PS Raghavan. NSAB has done some great work in Past. The First NSAB was constituted in 1998. Late K Subrahmanyam headed it. This Board produced a draft Nuclear Doctrine for the country in 2001, a Strategic Defence Review in 2002 and a National Security Review in 2007 (Economic Times, 2018). This body of experts, who are not part of the govt machinery, is an excellent arrangement to provide independent input to the country's highest decision-making body.

National Security Council Secretariat (NSCS): The NSA is responsible for the day-to-day working of the NSC. NSCS also provides secretarial support to the CCS. The appointment of the NSA was established on 19 Nov 1998. Before that, these activities were overseen by the Principal Secretary to the Prime Minister. Membership of the NSC includes members of the CCS, the NSA, deputy NSAs and the Vice Chairman of the NITI Aayog. The Prime Minister chairs the NSC. The NSC has further been empowered since 2018. The NSC now has three Deputy NSAs, a Military Advisor and a Maritime Coordinator. The senior Deputy NSA also acts as the Secretary of the NSC. He also handles subjects related to technology, emerging technologies, Intelligence, the Indian Space Research Organisation (ISRO), National Technical Research Organisation (NTRO), a technical intelligence agency, Cyber

Security and 5 G technology. In this connection, it must be noted that a dedicated Cyber Security Advisor works directly under the NSA. The second Deputy NSA is for internal security. He heads the task force on policy planning, counter-terrorism, border area development, internal security, Central Armed Police Forces (CAPFs), maritime security and affairs related to J&K. The third Deputy NSA handles Strategic affairs, including maritime security (it may be noted that this task is different from the task assigned to second Deputy NSA who handles operational issues, whereas the scope of the work of third Deputy NSA is in the strategic domain.), maritime issues in QUAD, Colombo Security Conclave (meant for Indian Ocean Security) and international affairs (major issues). The fourth vertical under NSC is the office of the Military Advisor. The Military Advisor handles Net Assessment, future military technologies, neighbourhood and strategic issues in the military domain. Realising the importance of the maritime domain in the overall security matrix, another vertical in the NSC has recently been added, and that is of Maritime Coordinator. This office handles maritime security, liaises with the coastal states, and coordinates maritime cyber security with different states and ministries. The composition of the NSC reveals that almost all aspects of security have been addressed, and this agency provides inputs to the PMO and the CCS on a real-time basis.

Joint Intelligence Committee (JIC): The JIC analyses intelligence data from foreign and domestic Sources. The JIC works under the cabinet Secretariat (HQ IDS, 2017, p. 33). For this, they receive data from IB, R&AW and the Directorates of Army (Military Intelligence), Naval Intelligence and Air Intelligence. Placing the JIC under the cabinet secretariat makes sense because the information from MAC and other police/ CAPF organisations is also compiled here.

Cyber Security: In recent times, cyber security is assuming great importance. It would be recalled that during the Kargil conflict, Gen Pervez Musharraf, on a visit to Beijing, was given a call by the then Chief of the General Staff of Pak Army, Lt Gen Mohammad Aziz Khan, to report to him about a meeting chaired by the PM Nawaz Sharif. The latter said that during the meeting, the Pakistani Air Force and Navy chiefs had complained to PM Nawaz Sharif that Gen Musharraf had kept them in the dark about the invasion of Kargil heights. The R&AW intercepted this telephone conversation. This was significant evidence to support that the intruders in Kargil were indeed Pak Army personnel and not mujahedeen (Raman, 2007). India has no dedicated Cyber Security Regulation and is also not well prepared to deal with cyberwarfare (Das, 2014)., However, India has formulated the National Cyber Security Policy 2013 (Ministry of Electronics and IT, 2013). It has yet to be implemented.

A beginning has been made at the NSCS level, where the Office of National Cyber Security Coordinator has been entrusted with formulating the National Cyber Security Strategy. It is done through The National Cyber Coordination Centre (NCCC), an operational cyber security and e-surveillance agency in India. It is intended to screen communication metadata and coordinate the intelligence-gathering activities of other agencies. The purpose of the NCCC is to help the country deal with malicious cyber activities by acting as an Internet traffic monitoring entity that can fend off domestic or international attacks. The NCCC deals with cybercrime prevention strategy, investigation training and review of outdated laws. Cyber security surveillance helps in framing India's cyber security policy. It aims to protect cyberspace, including critical information infrastructure, from attack, damage, misuse and economic espionage.

Further appreciating the criticality of cyber security, the security establishment of India 2014 established the National Critical Information Infrastructure Protection Centre under the NTRO, which was mandated to protect critical information infrastructure. In 2015, the Office of National Cyber Security Coordinator was created to advise the Prime Minister on strategic cyber security issues. In the case of the nodal entity, India's Computer Emergency Response Team (CERT-in) is playing a crucial role under the Ministry of Electronics and Information Technology (Ministry of Home Affairs, 2018).

Cyber Security is increasingly becoming very important, and implementing the Cyber Security Policy has to be the highest priority. On 15 Jun 2021, the Government of India launched the Trusted Telecom Portal signalling the coming into effect of the National Security Directive on the Telecommunication Sector. Consequently, from 15 Jun 2021, the Telecom Service Providers are mandatorily required to connect only those new devices designated as 'Trusted Products from Trusted Sources' in their networks. (National Security Council Secretariat, 2021).

HQ Integrated Defence Staff (IDS): This organisation is meant to act as a point organisation for building joint Manship among the three services, integrating policies and doctrine, integration in warfighting and procurement. It is headed by the CISC, which enjoys a status equivalent to that of the Vice Chief of a Service. The organisation has representation from all three services, MEA, DRDO and DoD and Def (Finance). The envisaged role of the HQ has been to be an interface between Services and the MoD. The CISC is also a member of the COSC and DAC. Presently ANC and DIA work under its command, but a C-in-C heads ANC, and a certain dichotomy in the working relationship does remain. Its tasks entail; higher defence planning, the conduct of joint Training within the services and with the foreign armed forces, coordinating humanitarian Assistance and Disaster Relief (HADR), coordinating acquisitions and capability building, coordinating the Training in the tri-services institutions like an NDA, Defence Services Staff College (DSSC), College of Defence Management (CDM) and School of Foreign Languages, financial planning and budgeting of the tri-service organisations, looking after international cooperation as mandated by the foreign policy of India and finally coordinating medical support through DGAFMS (IDS, 2022).

There is a definite requirement to empower this organisation, as the KRC and the GOM recommended. Although, now, except for ANC, no other active command is being controlled by this organisation. However, as more Theatre Commands arise, the HQ IDS' relevance will increase. An important step which the HQ IDS has already initiated is the finalisation of the Joint Doctrine of the Indian Armed Forces in 2017 (HQ IDS, 2017). It provides foundations for greater integration and interdependence to achieve higher interoperability and compatibility within the Armed Forces.

Nuclear Command Authority (NCA) and Strategic Forces Command (SFC): The NCA of India is responsible for command, control and operational decisions regarding India's nuclear weapons programme. It comprises a Political Council headed by the PM and an Executive Council headed by the NSA (HQ IDS, 2017). On 04 Jan 2003, the CCS constituted the Political Council and the Executive Council of the NCA. The Executive Council gives its opinion to the Political Council, which finally has the authority to order a nuclear strike when deemed necessary (Prime Minister's Office, 2003).

All nuclear assets are held under the charge of the SFC, which is responsible for managing and administering all tactical and strategic nuclear assets. The SFC itself works under NCA. The directives of the NCA are to be operationalised by the SFC, which is manned by the Service personnel. under the

control of a C-in-C SFC. As can be seen, India's nuclear assets are totally under civilian control with a clear command and control mechanism to prevent any unauthorised or accidental use.

4.9 Global Examples

Therefore, the integration could either be done through an act of Parliament or a govt order.

United States of America: In the USA, it was done through **Goldwater Nichols Act 1986- The Goldwater- Nichols Department of Defence Reorganization Act** was signed by the President of the United States of America, Ronald Reagan, on 10 Oct 1986 (United States Congress, 1986). It made the most sweeping changes to the US Department of Defence since it was established under the National Security Act of 1947 by reworking the command structure of the US Military (Gnanaprakasam, 2022, pp. 46-47). It increased the powers of the Chairman of the Joint Chiefs of Staff. It implemented some of the suggestions from the Packard Commission, commissioned in 1985 (President's Blue Ribbon Commission on Defense Management, 1986).

Among significant changes brought in through this act was streamlining the military chain of command, which runs from the President through the Secretary of Defence directly to the Combatant Commanders bypassing the Service Chiefs. Secondly, Service Chiefs were assigned an advisory role to the President and the Secretary of Defence and were responsible for training and equipping personnel of the unified Combatant Commands (Gnanaprakasam, 2022, pp. 46-47). Needless to add, it has worked well for the US Armed Forces and, as such, should give Indian Armed Forces confidence that it would work for them too.

United Kingdom: The overall structure of Defence in the UK continues to be maintained so that the identity of the three separate Armed Services into which individual Servicemen and women are recruited is maintained, and they continue to belong throughout their military careers. However, the decision-makers in the UK had decided a few years back that in the light of changing face of future battlefields, the 'Defence' needs would be required to be addressed by a tri-Service response.

The Chief of the Defence Staff (CDS) is the professional head of the British Armed Forces. The post was created in 1959 to reflect the new conceptions of joint operations that had come to the fore in World War II. Prior to the creation of the post, one of the three members of the Chiefs of Staff Committee was appointed Chairman. From 1965 until 1997, the Chief of the Defence Staff was a five-star post. Thereafter, it was a four-star post (Forces War Records, 2022). The four-star posts are the CDS, Vice CDS, Chief of General Staff, First Sea Lord, Chief of Air Staff and Commander Strategic Command (Ministry of Defence, 2020, p. 9). The UK has three separate services: Army, Navy, and Air Force. There is also a Strategic Command and Defence Nuclear Organisation.

In this connection, it needs to be noted that since 1959 most of the progress in this direction has been due to initiatives of the central machinery for achieving this through the concentration of policy-making in the MoD Headquarters, with military and civilian staff working in an integrated manner.

Change has also come in the pursuit of efficiency in the management of Defence, culminating in a hierarchical budgetary structure that delegates executive responsibilities and control of resources from the centre to commanders and managers who are given clearly defined objectives.

4.10 Conclusion

India has indeed moved from the national security framework she inherited at the time of Independence. Over a while, specific structural reforms have been introduced from time to time, especially post-Kargil war, when many reforms were suggested to improve the National Security Architecture by the KRC. While on the face of it, India has a reasonably good framework to respond to emerging and evolving geostrategic and operational developments on account of RMA. However, the devil lies in the detail. The recent standoff with China flagged the weakness in the Intelligence acquisition and response based on it.

Similarly, even eight months after the sad demise of the first CDS, the criticality of this void appears to be lacking. The dwindling Air Craft fleet and delay in finalising the MMRCA Deal shows that the weapon acquisition process still has its problem areas. Non-finalisation of the Theatre Commands, which the late CDS was progressing, flags the fault lines between the perceptions of different Services about the impediments to the integration of services which is quite detrimental to the attempted jointness. The Civil-military integration in MoD is also far from satisfactory.

It needs to be appreciated by all stakeholders that the shape and contours of battlefields are continuously changing due to RMA. Therefore, the response strategy will have to be based on the application of the CNP. One of the major problem areas is a lack of strategic culture in the country. Therefore, all decision-makers must formally be educated on the strategic issues. In this connection, there is a case to enlarge the scope of Training at the National Defence College. Also, there is a need to build a specialised cadre of bureaucrats who serve in the MoD. The integration issue related to Civil-military integration in the MoD and among the services appears to be an issue left to them. It is unlikely to reach any logical conclusion. It has been the experience of all democracies that this issue can be tackled only through an act of Parliament. Even in the US, it could be implemented only once President Ronald Reagan signed the Gold Water Nichols Act of 1986.

In view of the above discussion, not only the recommendations of the KRC and the consequent GOM must be implemented at the earliest, but the likes of MPIDSA and CENJOWS are strengthened to continuously deliberate on evolving technologies, geostrategic environment, Indigenous military-industrial complex and related issues to review the mechanism of the higher direction of war to remain current at all times. In this context, having think tanks outside New Delhi is essential. The opening of STRIVE (STRIVE, 2022) in Lucknow and the IIRF (IIRF, 2022) branch in Bangalore is essential steps in this direction.

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PART 3

NUCLEAR WEAPONS

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Section 5

MARITIME NUCLEAR POWER CHALLENGES AND STRATEGIC MARITIME POWER

V Adm Vijay Shankar

5.1 A Thesis

In the absence of a universally accepted system of administration and authority, the Nation-State will remain key to global governance. As an innate corollary, the rivalry between states is intrinsic to international relations. In the extreme, this may lead to armed conflict when diplomacy fails to reach an amicable resolution. Since the Second World War, policymakers have had to contend with two significant trends that have transformed perspectives on warfare; firstly, the advent of nuclear weapons and the theologies that advocated use was driven by the folly of mutually assured mass annihilation (Castillo, 2021). Secondly, the reality that military force as an extension of policy had certain definite limits. This suggests an understanding that may be summarised in the pithy thesis:

Within change, uncertainty, and realism, dynamics that condition conflicts are predicated on two faces of warfare, the Primary face as defined by conventional forces and the Shadow face as circumscribed by strategic nuclear forces. Application of the former is an active art, while the latter destroys purpose & therefore scripts the perimeter and imposes cut-offs.

What is notable is the discernment between conventional forces and nuclear forces. The former is concerned with achieving a political purpose, while the latter is its destruction.

5.2 In Our Times

In approaching the subject, it would be appropriate first to establish the context as we attempt to outline the significant characteristics of our times, then move on to the dominant crises that afflict it as distinguished by a revisionist China's contrived sense of entitlement and a perverse self-decreed destiny that it seeks to fulfil. At the centre is what China considers its "hundred years of humiliation" (between the Opium Wars of 1839 to independence in 1949) that the colonising west subjected it to, which it believes the world must recompense for (Kaufman, 2010). The period post-break-up of the Soviet Union is remarkable for the derangement of a world order that was precipitately put together in the wake of the Second World War.

The antagonistic coexistence of ideologies and tensions between nations at the end of that War, the hostile blocs that developed and the advent of nuclear weapons ushered in the Cold War and placed before the world the chilling prospects of global annihilation. This rivalry was played out against the backdrop of all-consuming rancour and was waged on political, economic, and propaganda fronts but had limited recourse to direct armed East-West confrontation other than by proxies. Nuclear weapons determined the nature of order and scripted where thresholds lay.

The settings have since morphed into multi-polarity and left emerging powers to wrestle with the strategic environment, significantly so with the nuclear tangle that confronts India (Shankar, Subcontinental Nuclear Instability: The Spiralling Nightmare, 2015). The challenge of uncertainty has moved into the hydrosphere and has dominated relations in the Indo-Pacific maritime space that today is the pivot of global commerce and energy flow. Stability from the Indian perspective suggests the importance of reinforcing the status quo by bringing to bear the weight of democratic forces that support a rule-based order.

5.3 Crises of our Era

When the Cold War sputtered out in 1989, it left an exhausted inward looking-world ripe for the rise of a new order. Chinese leadership saw in the state of global affairs the opportunity to extract compensation for its "century of humiliation". It knuckled down to apply its seemingly enormous labour supply to exploit western consumerism and diverted the earnings (as only a totalitarian regime could) to building comprehensive power. The economic and political demise of Soviet-style communism and its embrace of capitalism deepened without slackening its authoritarian control over the military, trade, and industry. Profit by any means became the leitmotif. It gave a new twist to the meaning of communism with "Chinese characteristics" as it rejected ideas of common ownership of the means of production and all thought of a classless society.

The obsession with the continuity of political dispensation and nationalism in a techno-globalised environment set into motion dynamics that put society on a probable collision course with the Communist Party of China.

In such a milieu, only the illusion of a return to the grandeur of the "Middle Kingdom" and an erasure of the "Hundred Years of Humiliation" could salvage the dispensation. And so sets in China's strategic narcissism, marked by outrageous territorial and maritime claims in the Himalayas and the South and East China Seas. Significantly, it energised a belligerent revisionist predilection for the current world order (Paul, 2020).

The new pivot of geopolitics and geo-economics has undoubtedly swivelled to the Indo-Pacific and the need for more acknowledged governance rather than disruptive unilateral takeovers. China claims all of the South China Sea despite their case having been disparaged by the Hague-based Permanent Court of Arbitration in 2016, which rejected China's rights of sovereignty as lacking a basis in international law. Five other littoral governments, Brunei, Indonesia, Malaysia, Taiwan, and Vietnam, dispute China's wide-ranging nine-dash line and its bid to transform what is a part of the "global commons" into proprietary seas.

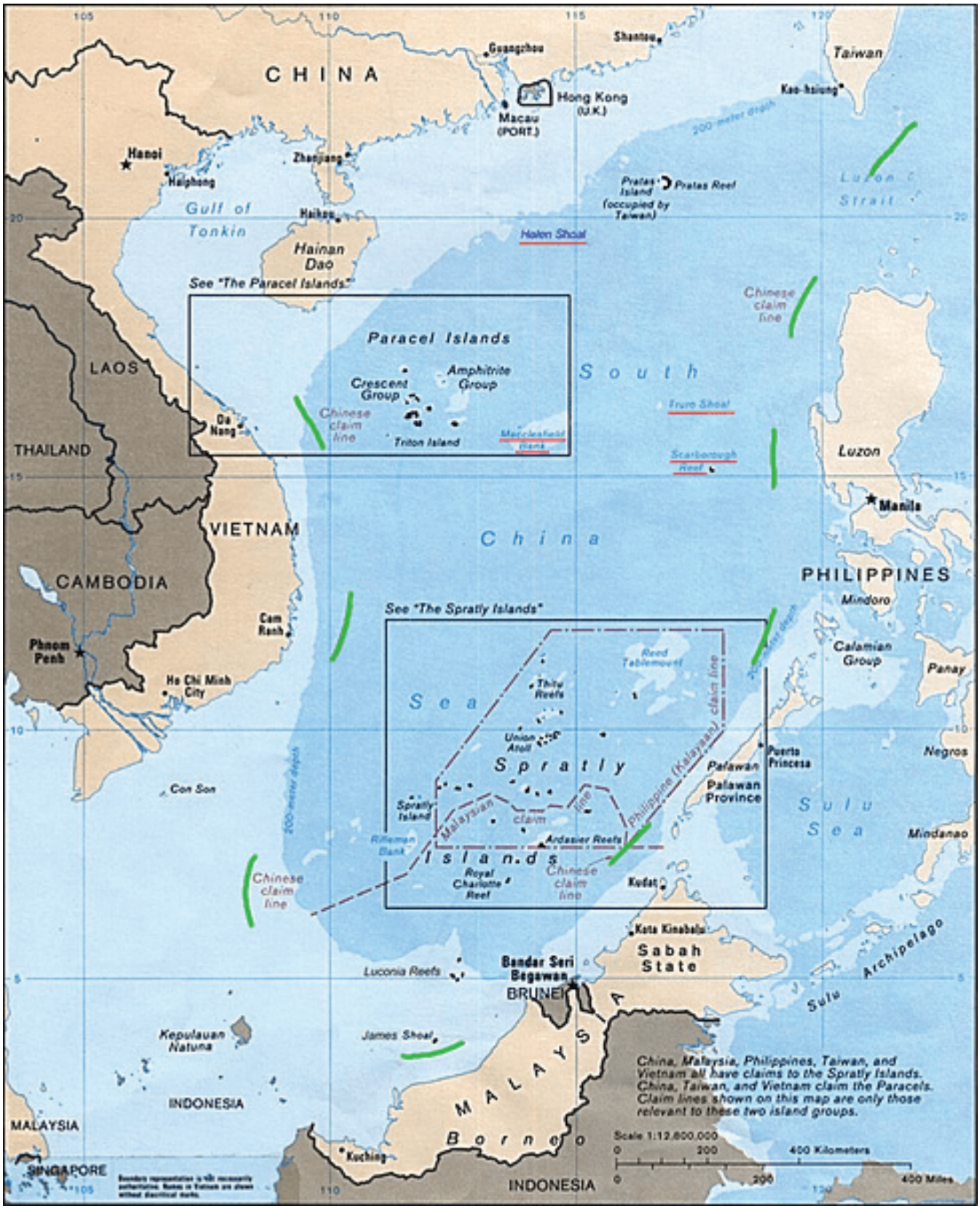


Figure 5.1: **The Nine-Dash Line**: China's Illicit Claim in the South China Sea (Wikimedia Commons, 2021)

Two dynamics drive the strategic culture of the Chinese leadership — Confucian ideology and Realpolitik — the former is the legacy of China's past, and the latter draws strength from the rigidity of a totalitarian dispensation, its invulnerability to questions and its propensity to 'power-politics'. This presents a dangerous cocktail. Confucian thought treasures virtue and conservatism; it depends mainly on the sagacity of the autocrat to speak for society. Another aspect of Confucian thought is memories of a Sino-Centric order in East Asia with tributary states (Rolland, 2020, pp. 122-126).

However, for an unrepresentative nationalistic state, Realpolitik places power and the threat of its use central to international relations. Beijing's grandiose territorial claims and the leadership's strategic culture provide incentive and contrivance for conflict. All the while, forces let loose by globalisation and climate change rapidly wear-down grandiose illusions of power. In reality, China is far from being a natural hegemon in Asia. Japan is hostile, South Korea wary, and Southeast Asia primarily nervous about China's expansionism. India is building sea power and coalescing with like-minded groups to counter China's aggressive policies.

No country has benefited more from the free and open international system than China. It has witnessed dazzling prosperity. However, even as the Chinese people aspire to free markets, justice, and the rule of law, the leadership of the Chinese Communist Party (CCP) undermines the international system by manipulating its freedoms and international laws while simultaneously eroding the values and principles of the rules-based order (Kraska, 2015). It is the circumstance that gave China its growth that it now covets to dismantle and revise.

5.4 Contours of the Strategic Space

The strategic environ within which Xi Jinping launched his "new era of rejuvenation" envisages revised order, self-promotion and self-centred security (Paul, 2020). China has made palpably clear that the instruments of influence are financial inveiglement, de-bunking established norms, military coercion and manipulating instabilities; the 'Belt and Road Initiative is an illustration of how these instruments can be worked (Narasimhan, 2020) (Jie & Wallace, 2021). Beijing is inexorably being drawn into what appears to be an inevitable clash with forces that uphold the status quo.

Tensions in the Indo-Pacific are particularly compelling as China attempts to control Choke Points and the arterial sea lines of communication that run through it. BRI attempts to overcome the Malacca Dilemma (Chauhan, 2020). After all, China's "Malacca Conundrum" is as much a cause of disquiet to global stakeholders as it is to Beijing (Joshi, 2020). The said concern ought to be the reason to uphold the principle of customary international law of "Freedom of Navigation" in the Global Commons as defined by the High Seas, Atmosphere, Antarctica and Outer Space.

Nevertheless, China chooses to claim portions of these seas as proprietary waters and establish military bases to hold sway over them. China has continued to militarise the South China Sea by placing anti-ship cruise missiles and long-range surface-to-air missiles on the disputed Spratly Islands and employing paramilitary forces in maritime disputes vis-à-vis other claimants (Paul, 2020, pp. 124-126). In the air, the People's Liberation Army Air Force has increased patrols around and near Taiwan using bomber, fighter, and surveillance aircraft to routinely violate Taiwanese air space (Kaushal & Cranny-Evans, 2021). China additionally employs non-military tools coercively, including economic heft during periods of political tensions with countries that China accuses of harming its national interests.



Figure 5.2: China's Belt and Road Enterprise: *A predatory debt trap?* (World Bank, 2018)

Source *https://www.worldbank.org/en/topic/regionalintegration/brief/*

5.5 The Nuclear Tri-Polar Tangle

China's strategic collusion with Pakistan and its untrammelled nuclear proliferation in that country has the makings of a nightmare for strategic planners. There is a continued collaboration between the two countries (Nayan, 2021), while Afghanistan's situation has further queered the pitch. That State', after the utterly confused withdrawal of US and coalition forces, has moved a step closer to the status of a terror state. The Afghan Taliban and their Pakistani army patrons are today back in Kabul. Pakistan's army Inter-Services Intelligence (ISI) has backed the Taliban since the group's origin in the 1990s. Under intense pressure and fear of facing the wrath of a US invasion in September 2001, Pakistan, its ISI and the Taliban ran helter-skelter to the safety of its borders. The strategic similarity to the US withdrawal in August 2021 is (uncanny (Riedel, 2021). The ISI has quickly renewed its support of the Taliban, planted its co-conspirator from the Haqqani network in the council of control, and the puppet show has re-started. The Taliban victory in Afghanistan will have significant consequences for Pakistan, all of which portend danger. Most perilous is when the Afghan-Pakistan situation is seen from the perspective of the AQ Khan affair that still defies closure, even after his death (MacCalman, 2016). One cannot fail to discern the ominous prospects of the transnational illicit nuclear networks re-opening their counters to Jihadists. Pakistan, a state armed with nuclear weapons without a declared nuclear policy, presents a nightmarish problem to strategic planners. Its nuclear weapons are "India-specific"; both the Custodian and Controller of the weapon are embodied in the military, thereby discounting the possibility

of restraint and, much more importantly, their military strategy of first use of nuclear weapons is in bed with Jihadists. Pakistan has inexplicably made the 'nuclear overhang' so fragile that its deterrence value is not apparent. In the meantime, the largest anti-state jihadi group in Pakistan, Tehrik-e-Taliban Pakistan (TTP), has skewed the internal balance of power and moved closer to its declared aim of founding a sharia-based Islamic state; in the process, tightening bonds with the Afghan Taliban and the deep state in Pakistan (Sayed, 2021). The horror of radical Islam possessing nuclear weapons is looming on the sub-continental horizon.

Rationally, no nuclear policy, by nature of the weapon involved, can conceivably be inclusive of terror groups, nor can it fuse Custodian and Controller of nuclear weapons in one without seriously compromising a nuclear deterrent relationship. Nevertheless, the strategic predicament posed by Pakistan is perverse for their policy on select terror groups, such as the Lashkar-e-Tayyiba (LeT), Haqqani network, TTP, Jaish-e-Mohammed (JeM) and others. It has always been that they are instruments of state policy.

The absurd reason proffered is their zeal to fight the external enemies of Pakistan while undermining fissiparous religious elements within. Thus, emerges the twisted logic of a terror attack triggering a nuclear exchange. The question now remains: when militants fundamentally inimical to the Indian State (Israel and the US, too) shed the need for subterfuge and quite openly enter Pakistan's national politics, is "responsible nuclear stewardship" a prospect at all? Rather, does not this new dimension of political cosiness make for a nuclear nightmare, where an opaque nuclear arsenal under military control is guided by a strategy that not only finds unity with state-licensed terror groups but has now unveiled a future for terrorists in politics? Indeed, the nuclear nightmare has begun (Shankar, The Dilemma of a Threshold, 2018).

Now, consider a second scenario: Pakistan promotes a terrorist strike in India and, in order to counter conventional retaliation, uses tactical nuclear weapons and then, in order to degrade nuclear retaliation, launches a full-blown counter-force or counter-value strike. This is an awkward but realistic recognition of the logic that drives Pakistan's nuclear policy.

Now, consider a second scenario: Pakistan promotes a terrorist strike in India and uses tactical nuclear weapons to counter conventional retaliation. Then, it launches a full-blown counter-force or counter-value strike to degrade nuclear retaliation. This scenario is an awkward but realistic recognition of the logic that drives Pakistan's nuclear policy.

The political mainstreaming of jihadists has enlarged and is in the process of creating a movement motivated by fundamental politico-religious ideology. A regime of this nature resident in a recognised state has brought to the fore how modernity and the political mainstreaming of jihadists is a doomed enterprise. And what of "responsible stewardship" of nuclear assets? It has thus far been argued the hazards of a political future for terrorists in Pakistan. In this reality, given access to a nuclear arsenal, do we not perceive its utilisation to prosecute jihadi objectives? The Pakistan military hardly minces its words on the use of jihadists and the latter's correlation with their nuclear policy (Rais, 2017, p. 6) (Shankar, No Responsible Steward of Nuclear Weapons This, 2018).

Moreover, what is the Pakistan-sponsored terror objective other than to weaken the democratic fabric of the Indian state, subvert society and bring about conditions for the secession of Kashmir? It is not a coincidence that these very same objectives are frequently mentioned in the military's strategic aims.

The latest National Security Policy mentions India occupying Kashmir (Government of Pakistan, 2022, pp. 35-36). There is also a mention of Pakistan having close ties with Afghanistan.

Decidedly, Pakistan has legitimate security interests, but when these interests are revisionist, be it an aggressive quest for strategic depth in Afghanistan or attempting to destabilise India through state-sponsored terrorists and propaganda.

To suggest a nuclear dimension to these dynamics is to plead a more profound stimulus than a politico-ideological pledge. What is emerging and must be recognised is that with Pakistan, there is a virulence that ought not to be allowed to thrive under the duplicitous belief that its nuclear arsenal guarantees that it can be both legatees of international largesse and continue to cavort with jihadists.

5.6 The Quad and AUKUS

The formation and management of alliances is a natural event in globalised circumstances with antagonistic inflections. The benign instruments of an alliance are diplomacy and statecraft to bridge differences in cultures, interests and ideologies, as well as accepting values; its coercive tool is power. The Indo-Pacific provides an arena where a contest of interests, values and Realpolitik is played out. The vision of the Indo-Pacific is a single strategic space where a change in dynamics in one area would inevitably affect the stability in the other. Two underlying incentives promote groupings in the region. Firstly, the United States, Australia, India, and Japan have a vested interest in upholding the rules and norms of the current order; augmenting existing institutions; ensuring freedom of navigation and trade; and promoting connectivity, economic development, and security within existing rules and standards. Secondly, this same group believes that China's rise and the reach of its Belt and Road Initiative (BRI) poses a disruptive threat to the region by attempting to carve out proprietary routes and establishing controlling nerve centres that could dominate commerce and energy flow (Kumar & Ghosh, 2020). For the past few years, this has encouraged India to increase engagement with Quad countries (Athreya R., 2021). India is, however, keen not to adopt an essentially anti-China policy and has been promoting the benign role of the Quad (Ranade, 2022) (Parmar, 2022). This is further reflected in the latest Quad summit (White House, 2022).

This has impelled nations abiding by the idea of a 'rule-based' order to one side against a revisionist China on the other. The coalescing of a trilateral alliance between Australia, the UK and the US (AUKUS) and participants of the strategic security dialogue between Japan, Australia, India and the US (Quad) introduces a new dimension of strategic commitment to this shared sense of purpose that aims at balancing Chinese hegemonic designs in the region. At the centre lies the resolve to sustain the status quo without giving in to China's aggressive policies. Indeed, such a cognate endeavour must cause serious damage to Beijing's pride and agency.

The AUKUS and the Quad have made it amply clear that countering China's assertiveness in the Indo-Pacific is the number one priority, and the member states will do whatever it takes to succeed (Ahmad, 2021). Ironically, Beijing's recent White Paper titled National Defence in a New Era outlined its territorial ambitions in the South and East China Seas, Yellow Sea, Taiwan and Ladakh and warned regional powers of its willingness to use force and use it first if its ambitions are threatened (People's Republic of China, 2019).

The more palpable part of the 'AUKUS' is the transfer of eight nuclear-powered submarines (SSN) to Australia by the US and the UK. The SSNs will not be available for the next decade and a half. However, they provide the basis for denial operations in these waters and give access to a host of futuristic capabilities. AUKUS' technology-sharing mission is complemented by the Quad, presenting a new security architecture that combines military, cultural and economic prowess amongst nations that share a vision of a free and rule-based Indo-Pacific. The determination to strategic confrontation against revisionism in the Indo-Pacific is thus emphasised. Balance of power adherents, with justification, consider a visible demonstration of collective power as the only way to dampen Beijing's belligerent expansionism.

That these initiatives have made China "edgy" is clear from their immediate declarations: China will certainly punish Australia with no mercy, and Australian troops are most likely to be the first batch of soldiers to waste their lives in the SCS (Global Times, 2021). President Xi Jinping vowed in July that those who get in the way of China's ascent would have their heads bashed bloody against a Great Wall of steel (BBC News, 2021).

5.7 The Indian Perspective - A Vexed Strategic Context

Whether the strategic burden to restrain China is better served by shifting from a hitherto largely continental outlook to an oceanic one must be weighing on the Indian planner's mind. Particularly in the Indo-Pacific, where committing to greater reliance on forming alliances to thwart regional revisionist designs is at the fore.

A singular feature of the deterrent relationship in the region is its character (Shankar, Staring Down an Abyss, 2011).

As is well known today, the collusive nature of the Sino-Pak nuclear relationship was fructified in the latter's nuclear weapons program (Small, 2015, pp. 27-46). In this context, the Sino-Pak nuclear weapons program must be seen as the two faces of 'Janus.' Therefore, it is logical to conclude that a doctrinal linkage exists between the two. This linkage permits a duality in China's nuclear policy; a declared No First Use can readily fall back on Pakistan's developing First Use capability as far as India is concerned.

The link between sub-conventional warfare and nuclear Warfighting is, at best, a tenuous one. Conceptually, no tinkering or reconstitution of nuclear policy can deter terror attacks. It is the policy that harbours terror groups as instruments of the state that must be targeted. Pakistan has today inducted tactical nuclear weapons (TNWs) into its arsenal to counter an Indian response to a terror strike (Sultan, 2021). This is an odd proposition since India does not differentiate between tactical and strategic nuclear weapons (this is not only stated by most scholars in the know but is also the bedrock of a nuclear deterrent relationship). Almost as if to suggest that they control the levers of nuclear escalation.

Also, TNWs involve decentralisation of control and dispersal, which dilute command and control and multiply the risk of the weapon falling into the wrong hands. In the end analysis, the use of nuclear weapons introduces a new and uncontrollable dimension. Logically, if a Pak-sponsored terror attack triggers a sequence of reactions, it must be clear that their nuclear red lines give space for a conventional response. After all, the premise that nuclear weapons seamlessly back a terror attack is not only ludicrous but is not even the Pakistan case.

For, when dealing with the threat of nuclear weapons, to suggest that ambiguity and first use provide options is to suggest that nuclear Warfighting, almost in conventional terms, is an option. This, by most, is a denial of the nature of nuclear weapons (characterised by mass destruction and uncontrollability) (Saxena, 2020).

India's nuclear doctrine was made public on 4th January 2003 (Prime Minister's Office, 2003). The doctrine presents two perspectives. The first part deals with 'Form'; nuclear exchange avoidance, credibility, and minimality are governing considerations. Sensitivity to the multilateral nature of settings and yet not showing diffidence to the existential nuclear challenges that mark the regional scenario is intrinsic to policy.

Credibility as a function of surveillance, effectiveness, readiness, and survivability completes the institutional structure (Nagal, 2020, p. 182). The doctrine provides alternatives and guarantees that the second strike would cause unacceptable damage. Also included are specific philosophical goals that underscore belief in the ultimate humanity of things.

The second part of the doctrine deals with 'Substance,' operationalising the deterrent and Command and Control as the main themes. Developing a 'triad' of strike capabilities (air, land, and sea) is essential so that credibility is neither compromised nor preparedness undermined. This continues to be an important part of deterrence (Kumar P. R., 2021)

As mentioned earlier, a clear division is made between the Controller and Custodian with multiple redundancies and dual release authorisation at every level. Command of the arsenal under all circumstances remains under a political prerogative, with alternatives provided for the nuclear command authority. To recapitulate, the salient features of the Indian nuclear doctrine are listed below:-

- Nuclear weapons are political tools,
- The nuclear policy follows a 'Punishment Strategy'. Its governing principle would be No First Use.
- Retaliation to a first strike would be massive and cause unacceptable damage.
- The use of chemical, biological or other WMD may invite nuclear retaliation.
- Nuclear weapons will not be used against non-nuclear weapon states.
- Unilateral moratorium against nuclear testing and continued stringent controls over proliferation.
- The goal of global nuclear disarmament remains.

As mentioned earlier, a deterrent relationship is founded entirely on rationality. On the part of the deterred, there is rationality in the conviction of disproportionate risks and on the side of the deterrent, rationality of purpose and transparency in confirming the reality of risks.

The exceptional feature of this cognitive transaction is that the roles are reversible with the crucial proviso that it is in the common interest to maintain equilibrium in the relationship. The determinants of a durable deterrent co-relation are for the association to withstand three pressures that are an abiding feature of contemporary politics in the region:

- The deterrent must be stable, which is implied the doctrinaire underpinnings; command, control and arsenal stewardship must be unwavering and transparent. Inconsistencies and opacity promote unpredictability, a speculative bulge in the arsenal and the temptation for pre-emptive action.

- Crisis stability entails the abhorrence of a predilection to reach for the nuclear trigger at the first provocation. In this context, decision time must give adequate leeway for recognition of having arrived at a 'red line' through transparency and unambiguous signalling.
- Technological intrusions place the planner on the horns of a dilemma. As a rule, technology's impact on the arsenal and command and control systems compresses time and increases overall effectiveness. This intrusion is inevitable. It is undesirable because it also invites covertness, whereas its impact demands transparency.

The three dynamics above have a common thread which could be exploited to enhance stability. This common thread is the need for transparency. During the Cold War, the two protagonists managed these dynamics through the brute power of arsenal, dangerous tripwire readiness and incessant provocative deployment. Any solution on these lines is neither exceptional nor tenable and, from a contemporary point of view, absurd. If stability is the aim, then clarity and precision in mutual dealings provide an opportunity to develop and solidify the deterrent relationship.

Against the reality of conventional War with its limited goals, moderated ends, and the unlikelihood of it being outlawed in the foreseeable future, the separation of the conventional from the nuclear is a logical severance. Nuclear weapons are to deter and not for use; the intent is the key; coherence and transparency are its basis. This must remain an abiding principle that should push leadership into a situation that abominates its use.

However, given the politics of the region, historical animosities, and the emasculated nature of civilian leadership in Pakistan, the dangers of adding nuclear violence to military perfidy are more than just an aberrated faith. Stability in this context would suggest the importance of reinforcing assured retaliation to nuclear violence while simultaneously harmonising with certain foundational rules of conduct.

5.8 The Quest for Strategic Leverage at Sea

Contemporary thought on maritime warfare has given strategic nuclear forces a restraining role to define and demarcate the limits within which conventional forces operate. The principal demand of the theory is to attain a strategic posture that would permit control of oceanic and littoral spaces for a designated period to progress and influence the course of the conflict. Control and security of control is the relationship that operationally links all maritime forces. Escorts provide the ability to accomplish control, while the Aircraft Carrier and its intrinsic air power assisted by strike and denial forces depend on the security of control.

Julian Corbett's formulation of Denial-Control-Power Projection (Corbett, 2018). It can be adapted in the present as 'control-for-causes' and is sophisticated for application in an era when calibrated escalation of power, coercive diplomacy, and sanctions, as opposed to a destructive and economically debilitating conflict, finds favour as a political tool. The current situation in Crimea, Syria, Iran, West Asia, and North Korea, weaponising of space, access denial strategies, disruptive control of cyberspace and indeed the South China Sea imbroglio is marked by just such 'Wars' where the principal tools are persuasive in their threat to dent the comprehensive adversaries power. Three factors play a disproportionate part in evolving such a strategy. First is the generation of strategic capability in all

dimensions. Second is the resolve to the power of national leadership. And lastly, is the state's ability to cope with and manipulate strategic outcomes. This blend of the abstract with the realist's point of view characterises contemporary warfare.

The quest for strategic leverage in the maritime domain is inspired by policy declarations such as the 'Look East (and now) Act East Policy.,' One challenge India faces is the spilling of land tensions into the sea. This has been observed in China and Pakistan (Athreya R., 2020, p. 46). India has long had close maritime diplomatic ties with several countries in the Indian Ocean region (Athreya R., 2020). This has been extended to Australia (Athreya R., 2020a). More recently, India cooperates with France, the UK, and several Commonwealth countries (Athreya R., 2021). The India-Africa Forum Summit builds close ties with African countries (Singh, 2021).

Current membership of the original ten ASEAN grouping plus six is symptomatic of shifting the strategic centre of gravity to the East. From a security angle, India, the USA, Russia, Japan, South Korea, and China provide the rationale for balance. This is also reflected in groupings like ADMM Plus and East Asia Summit (Ranganathan, 2020).

India, China, and ASEAN are set to become the world's largest economic bloc. The grouping is expected to account for about 30 per cent of the Global GDP and will quickly overtake the EU and USA economies (Cali, 2020). India-ASEAN trade and investment relations have been growing steadily, with ASEAN being India's fourth-largest trading partner. India's trade with ASEAN stands at US $ 81.33 billion, which is approx. 10.6% of India's overall trade. India's export to ASEAN stands at 11.28% of our total exports (Ministry of External Affairs, 2018). With such burgeoning stakes, strategic rebalancing in the region is a natural consequence. The expansion of the ASEAN and the creation of the ASEAN Regional Forum are also suggestive of the littoral's aspirations to counterpoise the looming presence of China.

5.9 Conclusion

The reality of the international system is the place that power enjoys in the scheme of assuring stability. Uncertainty in international relations often leads to unintended consequences. India's relationship with much of the world is robust. Through restraint, a pluralistic and popular form of governance, India has shown itself to be a responsible State that upholds the status quo yet invites change through democratic forces. Its rise, in the main, is welcomed and seen as a harmonising happening that could counterpoise China.

On the other hand, China is a declared revisionist authoritarian power that will impact globally, particularly in the maritime domain. It challenges economic orthodoxy and geo-political and security structures without bringing about a change. This cannot be allowed to pass devoid of a strategic riposte. The fear of War, to authoritarian regimes such as China, co-exists with belligerence and exalted nationalistic feelings that, while advancing concern of survival of dispensation, also boost profitable involvement in the incessant preparedness for War. Furthermore, herein also lies the necessity to rein in China through unified action that threatens regime existence by challenging its bellicosity in the Indo-Pacific.

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Section 6

PAKISTAN'S TACTICAL NUCLEAR WEAPONS: A CALCULATED BLUFF

Maj Gen M. Singh and Col V. Jaitly

6.1 Theoretical Framework

TNWs, less potent than strategic nuclear weapons, are intended to devastate enemy targets in a specific area without causing widespread destruction. The United States began developing lightweight nuclear warheads in the 1950s, one of the first such devices being the W-54 warhead, whose explosive force, or yield, varied from 0.1 to 1 kiloton. The W-54 was the main warhead used on the Davy Crockett nuclear recoilless gun, a portable warhead launcher that a single soldier crewed. The Davy Crockett could deliver a warhead to a target up to 2.5 miles away.

During the 1960s, the United States Navy and Marines collaborated on developing a tactical nuclear device called the Special Atomic Demolition Munition. The project called for a two-person crew to parachute from an aircraft carrying a portable warhead similar to the W-54. The crew would place the weapon in a harbour or another target reachable by sea. They would then swim to a small craft waiting offshore to pick them up. The nuclear device was set to explode after the crew was safely out of the blast area. These are no longer in use.

During the Cold War, the United States and the Soviet Union manufactured and deployed tens of thousands of TNWs; however, none were ever used in combat. One of the most dramatic effects of the end of the Cold War was that TNW faded into the background of military and political planning and rhetoric. Tactical nuclear weapons generally were first on the chopping block when United States President George WH Bush and Russia's leader, Mikhail Gorbachev, initiated sweeping unilateral and reciprocal nuclear arms reduction initiatives in the early 1990s. As a result, the combined number of tactical nuclear weapons in the US and Russian arsenals has declined dramatically from 20,000 to 30,000 in the late 1980s to less than 2,500 today.

In April 2011, Pakistan first tested its short-range Hatf-IX or NASR missile system. The test was interpreted as marking a shift in Pakistan's nuclear posture to full spectrum deterrence, which envisages a complete range of strategic, operational and tactical nuclear weapons that would give them deterrence over India's conventional edge.

Pakistan Army has tested the NASR several times since 2011, publicly talking about its Shoot and Scoot attributes that supposedly help deter evolving threats. Despite the many tests, it is still being determined if the rocket system is in service since it has remained undeployed. Through NASR, Pakistan is seen to be exploring the space for a flexible response which falls between a massive response and doing nothing. Lt Gen Khalid Kidwai, (Retd), Head of Pakistan's Strategic Planning Division, called NASR a force multiplier that will pour cold water on a cold start.

6.1.1 Research Objective

The paper's primary objective is to substantiate that Pakistan's TNWs are a Calculated Bluff and must be factored into our operational plans.

6.1.2 Data Collection and Data Analysis

The design followed for the research is Qualitative, supported by Quantitative research using probabilistic sampling. The primary qualitative data was collected from reputed articles, journals, theses, and reports on the TNWs of Pakistan. The data collected through research provided valuable insight into the technical parameters of NASR, the nuclear stockpiles of Pakistan, the command and control structure and their employment philosophy. The information was thereafter used to prepare two open-ended questionnaires targeting well-informed military officers of various Arms and Services with a total of 69 respondents. The data collected has been subjected to detailed statistical analysis to validate the research objective. For Qualitative research, books and publications, periodicals, internet articles and open-source documents available on the internet were used.

6.1.3 Structure of the Paper

The paper primarily focuses on four areas. Firstly, to draw out relevant lessons from the cold war experience of NATO and Warsaw countries regarding the employment of TNWs. Secondly, to understand the technicalities of NASR and its employment philosophy. Thirdly, to assess the feasibility of NASR being employed by Pakistan against any Indian offensive and carry out a likely damage assessment. And finally, to challenge Pakistan's claims regarding NASR vis-à-vis its technical capabilities, availability of fissile material, doctrinal dilemma, deception, and operational challenges faced while employing NASR to prove that NASR is just a force in being rather than a weapon of warfighting.

6.1.4 Summary

This article confronts Pakistani claims by doing an analytical and in-depth analysis of the capabilities of NASR, its employment philosophy, target analysis, and the impact of NASR on Battle Groups and other formations. The paper analyses the doctrinal, operational, tactical and technical challenges the Pakistani hierarchy will face in the employment of TNWs. Pakistan's claims of **'Pouring Cold Water on Cold Start'** are challenged analytically by its **credibility, utility, employability and operational effectiveness**. It arrives at a well-justified and logical conclusion that NASR is **just another calculated bluff**.

6.2 Introduction

1. TNWs, less potent than strategic nuclear weapons, are intended to devastate enemy targets in a specific area without causing widespread destruction. The United States began developing lightweight nuclear warheads in the 1950s, one of the first such devices being the **W-54 warhead**, whose explosive force, or yield, varied from 0.1 to 1 kiloton. The W-54 was the main warhead used on the Davy Crockett nuclear recoilless gun, a portable warhead launcher crewed by a single soldier. The Davy Crockett could deliver a warhead to a target up to 2.5 miles away.
2. In April 2011, Pakistan first tested its short-range Hatf-IX or NASR missile system. The test was interpreted as marking a shift in Pakistan's nuclear posture to full spectrum deterrence, which envisages a complete range of strategic, operational and tactical nuclear weapons that would give them deterrence over India's conventional edge.
3. Pakistan Army has tested the NASR several times since 2011, publicly talking about its **Shoot and Scoot attributes** that supposedly help deter evolving threats. Despite the many tests, it needs to be clarified if the rocket system is actually in service since it apparently remained undeployed to date. Lt Gen Khalid Kidwai (Retd), Head of Pakistan's Strategic Planning Division, called NASR a force multiplier that will **pour cold water on a cold start** (Ahmed, 2016).

6.2.1 The Cold War Experience

4. During the Cold War, the United States and the Soviet Union manufactured and deployed tens of thousands of TNWs; however, none were ever used in combat. One of the most dramatic effects of the end of the Cold War was that tactical nuclear weapons faded into the background of military and political planning and rhetoric. Tactical nuclear weapons generally were first on the chopping block when US President George WH Bush and Russia's leader, Mikhail Gorbachev, initiated sweeping unilateral and reciprocal nuclear arms reduction initiatives in the early 1990s. These were collectively known as **'Presidential Nuclear Initiatives** (Pomper, Potter, & Sokov, 2010). As a result, the combined number of tactical nuclear weapons in the US and Russian arsenals has declined dramatically from 20,000 to 30,000 in the late 1980s to less than 2,500 today.

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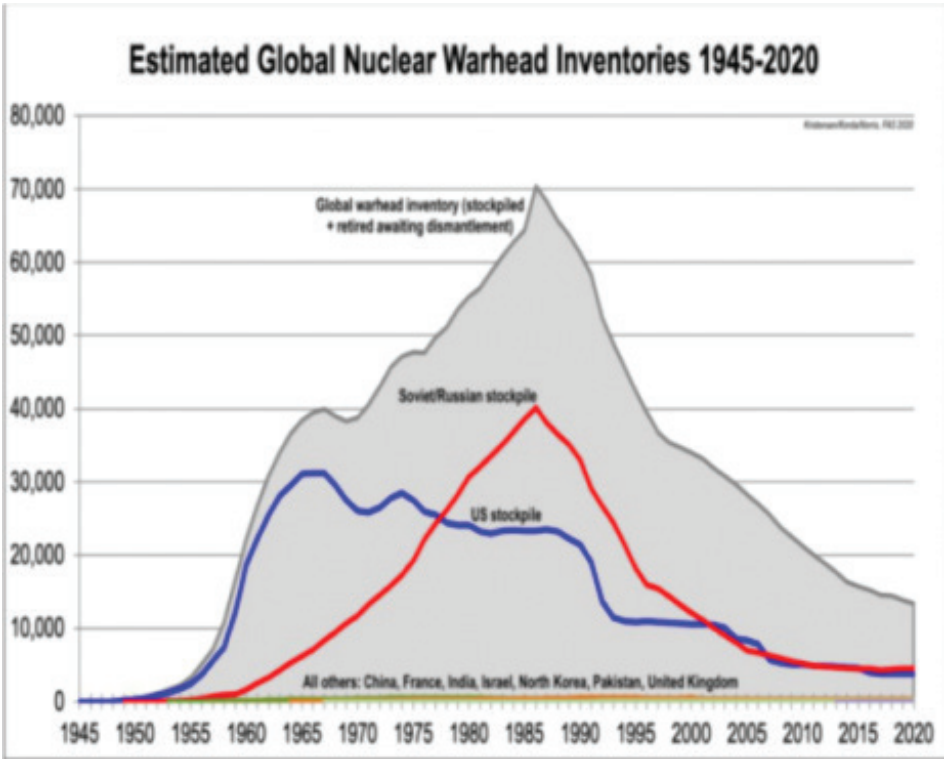


Figure 6.1: Reduction of Nuclear weapons post Cold war

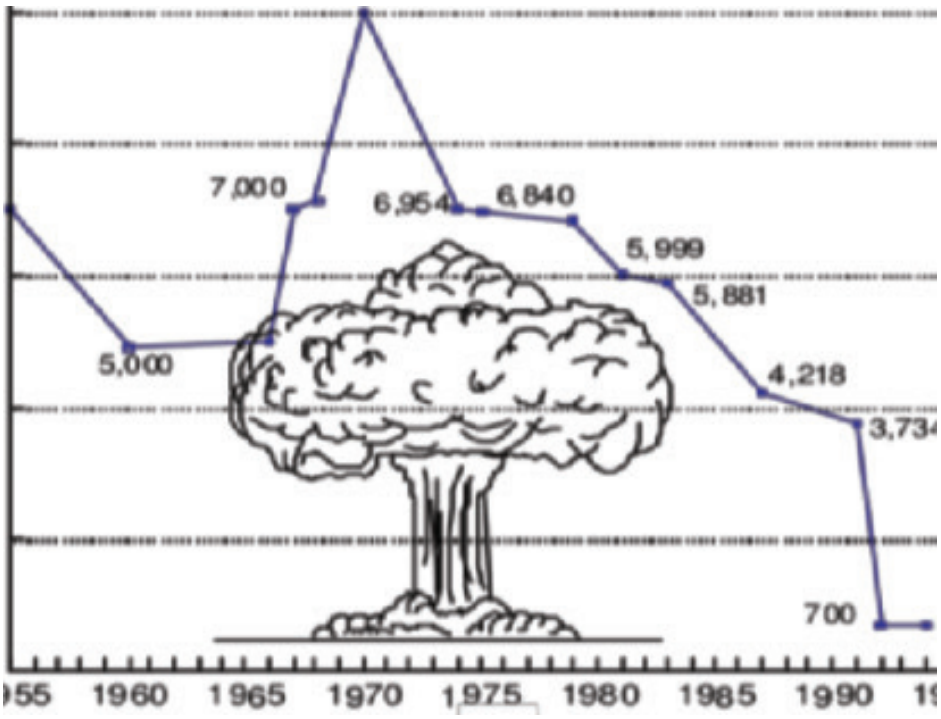


Figure 6.2: TNWs deployment in Europe

5. NATO Exercises CARTE BLANCHE (1955), LION NOIRE (1957), and SAGEBRUSH (1957) also concluded that **TNWs did not favour defence** (Schulte, 2012). Important lessons which stand out for the Indo-Pak scenario from the cold war experience are as under:-

   (a) **Deterrence Value.** TNWs **did not enhance deterrence**; on the contrary, the spiralling numbers created greater danger and fear (Nagal, 2016).

   (b) **Pre-Emption.** Deployment of TNWs provided the option of **pre-emption to the attacker** (Nagal, 2016).

   (c) **Control of TNWs**. The tactical commanders would inevitably seek very early release of TNWs, whereas prudence demands that the higher leadership delegates control of tactical nuclear weapons as late as possible. **This contrarian requirement was never acceptable during the cold war and will continue to create decision dilemmas in the Indo – Pak context.** (Nagal, 2016)

   (d) **Security.** The employment of precision-guided weapons by the adversary can damage or destroy stored TNWs well before they reach the TBA. (Nagal, 2016)

   (e) **Impact on Conventional Operations.** It was never conclusively established in any doctrine or strategy evaluation that TNWs would be decisive in war; hence, their **value remains doubtful.** (Nagal, 2016)

   (f) **Impact on Mechanised Forces.** TNWs would have limited effect on the mechanised forces designed to fight in a Nuclear, Biological, and Chemical (NBC) environment. (Nagal, 2016)

   (g) **Escalation Control.** There needed to be more understanding of how escalation control would apply or work to limit the exchanges to the battlefield. The fait accompli would result in a strategic exchange, thus, proving that TNWs do not solve the conventional predicament or dilemma. (Kanwal, 2000)

   (h) **Collateral Damage.** In Punjab's well-developed, semi-urban terrain on both sides of the Indo – Pak boundary, collateral damage would be unavoidable. (Kanwal, 2000)

   (j) **Budgetary Constraints.** TNWs are incredibly complex weapons that are difficult and expensive to manufacture, store and maintain under field conditions, requiring heavy logistic support. (Kanwal, 2000)

6.3 Pak TNWs: Technical Details and Deployment Philosophy

6. Since 1998, Pakistan's nuclear posture has experienced a metamorphosis from **minimum credible deterrence to a credible minimum and finally to full spectrum deterrence** with the development of the NASR system. Per the official statements issued by Pakistan's Inter-Services Public Relations (ISPR) Directorate, NASR was developed to add deterrence value to Pakistan's Strategic Weapons Development programme at shorter ranges. The NASR could carry nuclear warheads of sub-kiloton yield with high accuracy and has shoot-and-scoot attributes. (Inter-Services Public Relations, 2011). Most military strategists and decision-makers in Pakistan agree that TNWs complete so-called full spectrum deterrence and, as such, is a necessary counterweight to India's cold start or proactive military operations doctrine without crossing Pakistan's nuclear thresholds.

6.3.1 Pakistan's Concept of TNWs

7. Pakistan is replicating the earlier US concept of countering a stronger conventional force by the employment of TNWs as also from the Russian 'escalate to de-escalate doctrine. Pakistan's nuclear strategy is aimed at deterring a conventional conflict by maintaining a link between conventional escalation and nuclear weapons.
8. The aim of using TNWs is not wide-scale destruction of field forces but to warn India and the rest of the world that India is crossing the 'red lines' of Pakistan's nuclear threshold and intends to bring an immediate end to the conflict. As per Pakistan's perception: -
   (a) Use of a few TNWs would not be **deemed provocative enough by India** (and the rest of the world) to **merit massive retaliation**, albeit contrary to the Indian Nuclear Doctrine.
   (b) It would put Indian decision-makers in a dilemma **as the loss would not be substantial enough to risk** an all-out nuclear exchange.
   (c) The **international community would put pressure on India** against continuing the conventional campaign or taking the nuclear option and accept the damage caused by the TNWs.
   (d) The **Indian polity being mature, would choose war termination to nuclear escalation.**
9. Pakistan has developed the NASR weapon system to deliver its TNWs. They believe in achieving full spectrum deterrence against India's superior conventional forces and as a counter to the cold start doctrine (Inter-Services Public Relations, 2011).

6.3.2 10. NASR - Capability Assessment

(a) **General:** The Hatf IX ("**Vengeance IX**"), or NASR, is a **solid-fuelled** tactical ballistic missile system developed by the National Development Complex (NDC) of Pakistan. It was revealed after a test in 2011 and appeared to have entered service after extensive testing in 2013.

(b) **Capabilities:** The NASR is a **ballistic missile** which carries a **sub-kiloton tactical nuclear weapon** out to a range of 60 km. It is believed to be derived from the WS-2 Weishi Rockets system developed by China's Sichuan Aerospace Corporation (Ramanathan & Kini, 2019). Four missiles are carried on the same Chinese-origin 8x8 TEL as the Pakistan Army's A-100E 300 mm Multiple Launch Rocket System (MLRS), a Chinese version of the BM-30 SMERCH. The missile is believed to carry high-accuracy nuclear warheads of yields between 0.5 to 10 KT.

(c) **Design Challenges (Ramanathan & Kini, 2019)**: The simplest way for Pakistan to design an ultra-compact warhead on the NASR would be to obtain a design from someone else. China would be the most probable candidate. While such a transfer cannot be ruled out, it is still **unlikely that the Chinese could have provided Pakistan with an off-the-shelf design. The People's Liberation Army has no known nuclear-capable missiles with a similar range or payload**. Indeed, China has a no-first-use policy that eschews battlefield nuclear weapons. However, Pakistan is known to have received the **Chinese CHIC-4 bomb design,** which is a bulky design weighing approx 1,180 kg. It is believed that Pakistan may have reduced the weight of the CHIC-4 design down to about 500 kg or 250 Kg, however, the fact remains that **this design has never been tested (hot tests), and its reliability will always remain suspect**.



Figure 6.3: NASR on Display

(d) **Fissile Material: Plutonium or Uranium? (Ramanathan & Kini, 2019)** The design challenges faced by Pakistan in developing nukes for NASR are discussed below:-

(i) The NIAS published a study report which concludes that a **plutonium-based linear implosion device is best suited for the slim profile of the NASR missile**. (Nagappa, Vishwanathan, & Malhotra, 2013). However, there are two problems with this approach. First, since the linear variant needs twice the amount of fissile material as a spherical implosion system, Pakistan would run out of its estimated **plutonium stock** (as of 2013) after producing just 12 warheads. Secondly, any such device would be untested, and the reliability of such a device will remain questionable.

(ii) A recent assessment suggests **Pakistan's dwindling domestic supply of uranium** will limit its nuclear arsenal size to between 112 and 156 weapons. While such studies are necessarily speculative, Pakistan will likely be forced **to make hard choices when it allocates weapons-grade material among its growing array of missiles.** The scarcity of fissile material and the design sophistication of the warheads for various short-range missile systems will **eventually determine Pakistan's tactical nuclear force posture**. Pakistan is unlikely to compromise **its strategic nuclear stockpile for tactical nuclear weapons.** (Ahmed, 2016).

(e) **Command and Control of TNWs.**

(i) Pakistani officials have on several occasions emphasised that the National Command Authority (NCA) will maintain **assertive control** over any battlefield nuclear weapons, including the **NASR that would be forward deployed only during a crisis.**

(ii) Pakistan might have also sought to address command and control dilemmas by applying "**Centralised or Assertive Control and De-centralised or Delegated command**." This implies that the NCA will eventually allow a TNW to be employed during a battle but also that the local commander will decide other operational considerations and the choice of the target. A Pakistani-built **Permissive Action Link**, **or Pak-PAL**, consisting of a twelve-digit alphanumeric code, will prevent accidental or unauthorised launch. Pak-PALs are built into the weapon at manufacture, and launch codes follow the so-called two-person rule. Codes themselves are held by the NCA, which must then transmit the codes to a field commander in order for that commander to launch (Ahmed, 2016). Launch codes would be passed on to the local corps or divisional commander, under whose area or responsibility the TNW might be deployed, only once the NCA decides to employ these weapons. Senior Pakistani military officials claim that they have guarded against the possible breakdown of routine communications with multiple redundancies and backup communication channels to maintain contact with local field commanders. This system of **Pak-PAL and assertive control is conceptually different from NATO** of using TNWs in Europe, which was pre-delegation of authority for the use of TNWs to field commanders.

(iii) **Pre-delegation to field commanders** was an integral part of credible deterrence through TNWs when NATO deployed them in Central Europe during the Cold War, which is not the case with Pakistan TNWs, thus raising serious doubts about the effectiveness of TNWs for warfighting.

(f) **Integrating TNWs into War Fighting Strategy.**

(i) Pakistani officials insist that "they have integrated conventional military plans in a manner that assures safe deployment, retains assertive command and control, reliable communications, and assured effectiveness of TNWs in the battlefield". This, however, is in stark contrast to the NATO experience of not being able to develop either a doctrine or force structure for the effective employment of TNWs in the theatre of operations.

(ii) Strategic planners in Pakistan insist that the "NASR would not be targeted at populated areas inside Pakistan, and no Pakistani official [had] said the weapons would be used on the nation's soil."If short-range nuclear weapons such as the NASR are going to be effective counterforce weapons, they have to be deployed early enough to be usable against invading forces. If TNWs are deployed too late to be battlefield-effective, Pakistan's only option will be to escalate to higher-yield strategic weapons. (Ahmed, 2016).

(iii) The reliability and effectiveness of this link during the critical phase, either due to inclement weather conditions or any action by India, put a **big question mark on the effectiveness of TNWs as a warfighting strategy**. For TNWs to be effective, a foolproof, reliable, fully integrated, and automated **ISR system will be a prerequisite.** Pakistan will rely heavily on Chinese satellites for this confirmation prior to the employment of TNWs.

6.3.3 NASR - Feasibility of Employment

11. Pakistan has developed NASR as a TNW; however, its employability and effectiveness against Indian conventional forces will remain suspect because of numerous challenges like command and control, difficulty in transportation, security of missile warheads and launch system in operational conditions and others. Notwithstanding the above and assuming that Pakistan can overcome all these challenges and takes a call for the employment of TNWs, we must pragmatically examine the likely targets for TNWs to understand the possible implications.

12. **Envisaged Impact of Pak TNWs over Indian BGs:** A deeper analysis of some fundamental questions has been discussed in succeeding paras.

(a) If Pakistan decides to use TNWs (NASR) against Indian BGs, it would be faced with the dilemma of **where to employ these TNWs, i.e., desert, Semi-deserts, plains or mountains and use them across IB or on Pakistan soil**. The nukes and missiles will have to be staged forward in an operationally acceptable timeframe to be effective.

(b) **Preparation Time for employment of Pak TNWs.** The staging forward of NASR by Pakistan into TBA will take time. It will be fair to assume that NASR would reach the TBA only after **T + 24 H** ('T') is when the decision to use TNW is taken) and can only be fired after **T + 48 H**. Even in the best-case scenario for Pakistan, the earliest timeframe for preparation, move, deployment and launch of a TNW against an Indian Offensive will not be **before T + 12 H.** What will be the disposition of Indian Offensive forces then? Which will be the most appropriate target for Pakistani military commanders to choose?

(c) **Target Selection for TNWs:** The availability of limited NASR missiles with Pakistan would have forced her not to deploy them in TBA. Pakistan would be forced to stage them forward either to pre-designated sectors based on the threat perceived or read the battle situation and then stage them forward. In our opinion, the assessed probability of targets for the use of TNWs by Pakistan after staging them forward is as follows:-

S No	Terrain	Target Selection	Probability of Pak using NASR against Indian BGs
(i)	Desert	Across IB (in India)	IV
(ii)	**Desert**	**On IB**	**III**
(iii)	**Desert**	**Pak Territory**	**I**
(iv)	Semi Desert	Across IB (in India)	VII
(v)	Semi Desert	On IB	XII
(vi)	**Semi Desert**	**Pak Territory**	**II**
(vii)	Plains	Across IB (in India)	X
(viii)	Plains	On IB	XI
(ix)	Plains	Pak Territory	V
(x)	Mtn	Across IB (in India)	VIII
(xi)	Mtn	On IB	IX
(xii)	Mtn	Pak Territory	VI

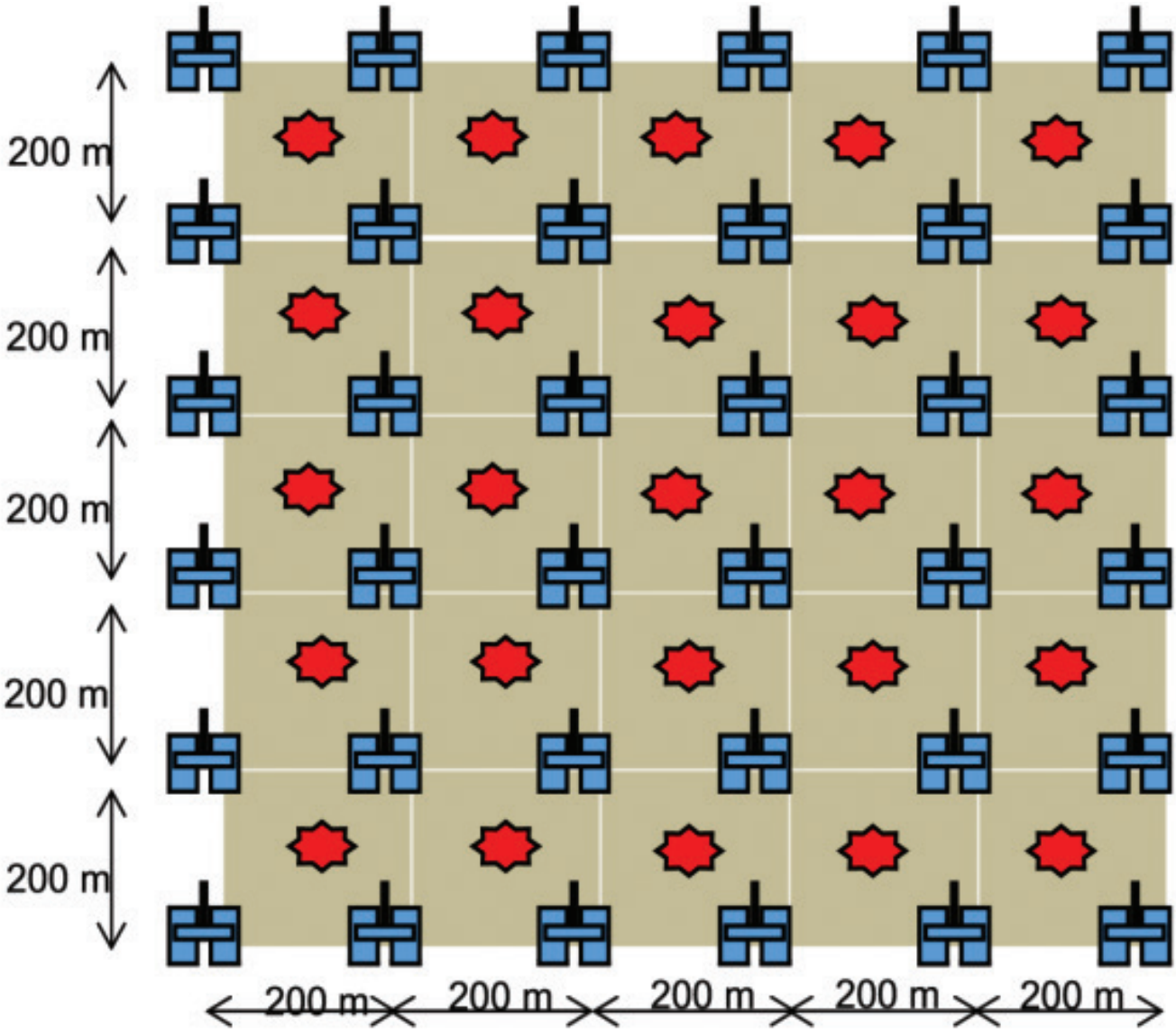
(d) **Pragmatic Analysis of Damage Assessment by NASR.**

(i) **Low Yield TNWs:** The energy released from a typical nuclear weapon can be divided into Blast, Thermal, ionising residual radiations and EMP. Any well-prepared enemy will structure his armed forces to operate under nuclear threat, which implies that the offensive thrusts would be primarily based on mechanised formations operating along with well-equipped infantry formations, thus minimising the impact of TNWs.

(ii) **Analysis of Damage Assessment by NASR:** Pakistan considers NASR a battlefield nuclear weapon; therefore, it is important to understand the weapon's potential damage against mechanised formation or IBG. **An overpressure of 3 atm is required to damage and incapacitate a tank**. A **one KT TNW blast at the height of 150 m by a NASR missile is likely to produce 3 atm of overpressure up to a horizontal distance of 170m from ground zero (**Nayyar & Mian)[19]. The assessed damage to the tanks of IBG because of this TNW strike will be minimal. In a worst-case scenario, assuming tanks to be 200 m apart, one NASR (1 KT) will be able to damage a max of two tanks. **25 NASR missiles (1 KT)** would be required to damage approximately 36 tanks in One Sq km.

(iii) **Impact of Pakistan Using TNWs:** Per the "Bulletin of the Atomic Scientists" report of 2018, Pakistan has 140 – 150 nuclear warheads, including TNWs. It also pegs the number of NASR warheads of yield between 5 to 12 KT as 24 only[20]. However, given the relatively **small size of the Pakistani nuclear arsenal, it would likely need to use up an estimated 60 per cent of its nuclear stockpile to disable a large-scale Indian advance.** (Kristensen, Norris, & Diamond, 2018)

(iv) **Effect of NASR on BG in Desert Trn:** Assessed damage due to NASR using a TNW of varying yields (3/5/2 KT) on the outskirt of Longewala, the Tanot Node, and the outskirts of RYK assessed using the Apps (Doomsday Calculator and NukeBlast). Assessment of damage is as under:-



.

Figure 6.4: **Damage Assessment by NASR (1 KT) on Tanks (tank to tank distance 200 m).**

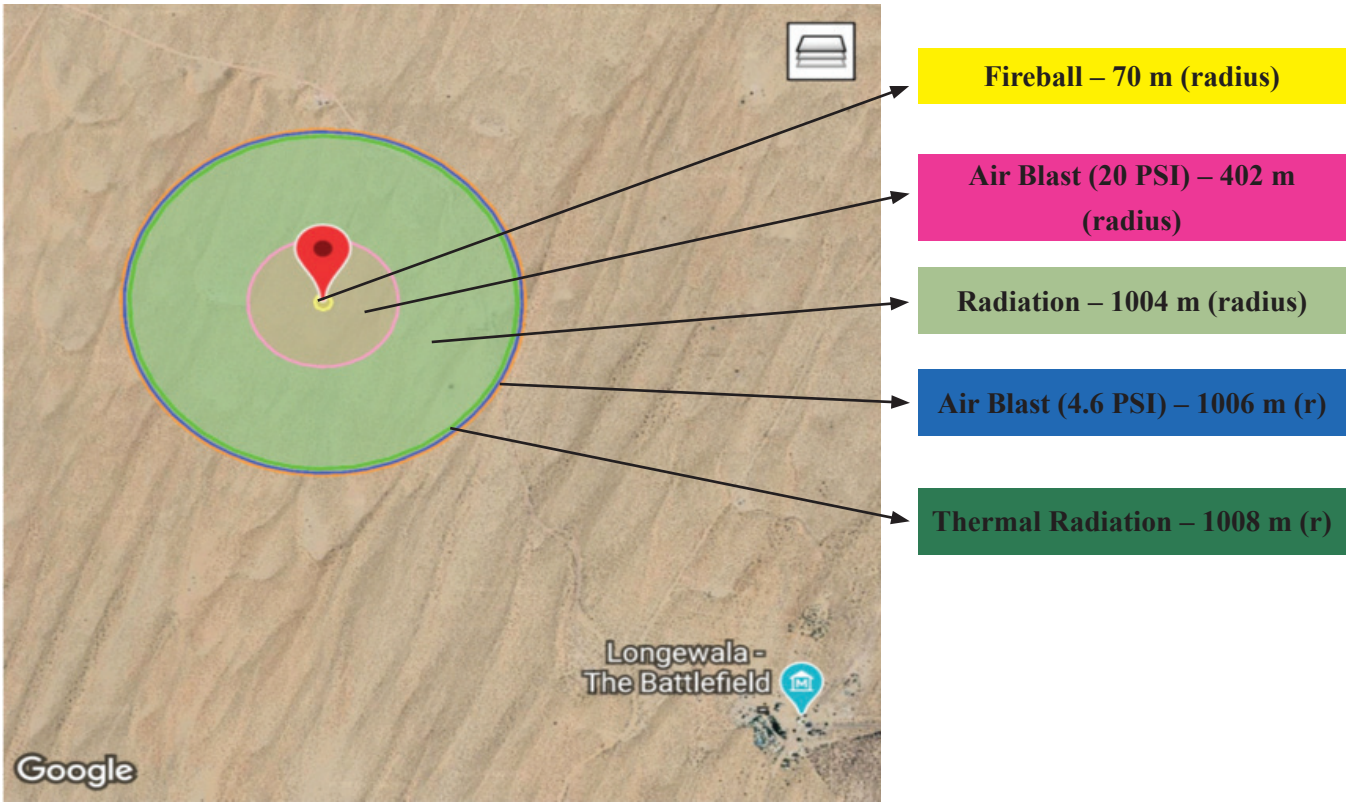


Figure 6.5: Effect of Ground Burst of NASR (3 KT) at Longewala

Calculation Results of Ground Burst of NASR (3 KT) at Longewala:

- **Ground burst** with a capacity of **3 KT.**
- Cloud height - **4100 m.**
- Cloud radius - **1300 m.**
- Depth of the funnel (depending on the soil) will be between **9 to 13 m** with a funnel radius of **20 to 34 m.**
- Visibility up to 12 miles.
- Impact at a distance of 500 m from Ground Zero:-
  - **Overpressure** (0.549 atm) - Possible eardrum rupture for unprotected troops; buildings/ bunkers will get damaged.
  - **Shock wave** will come through in **1.137 sec.**
  - **Fireball** radius **70 m.**
  - The dose of **initial nuclear radiation** (One minute after the explosion) will be from **3000 to 10000** rad.
  - Significant local fallout is possible.

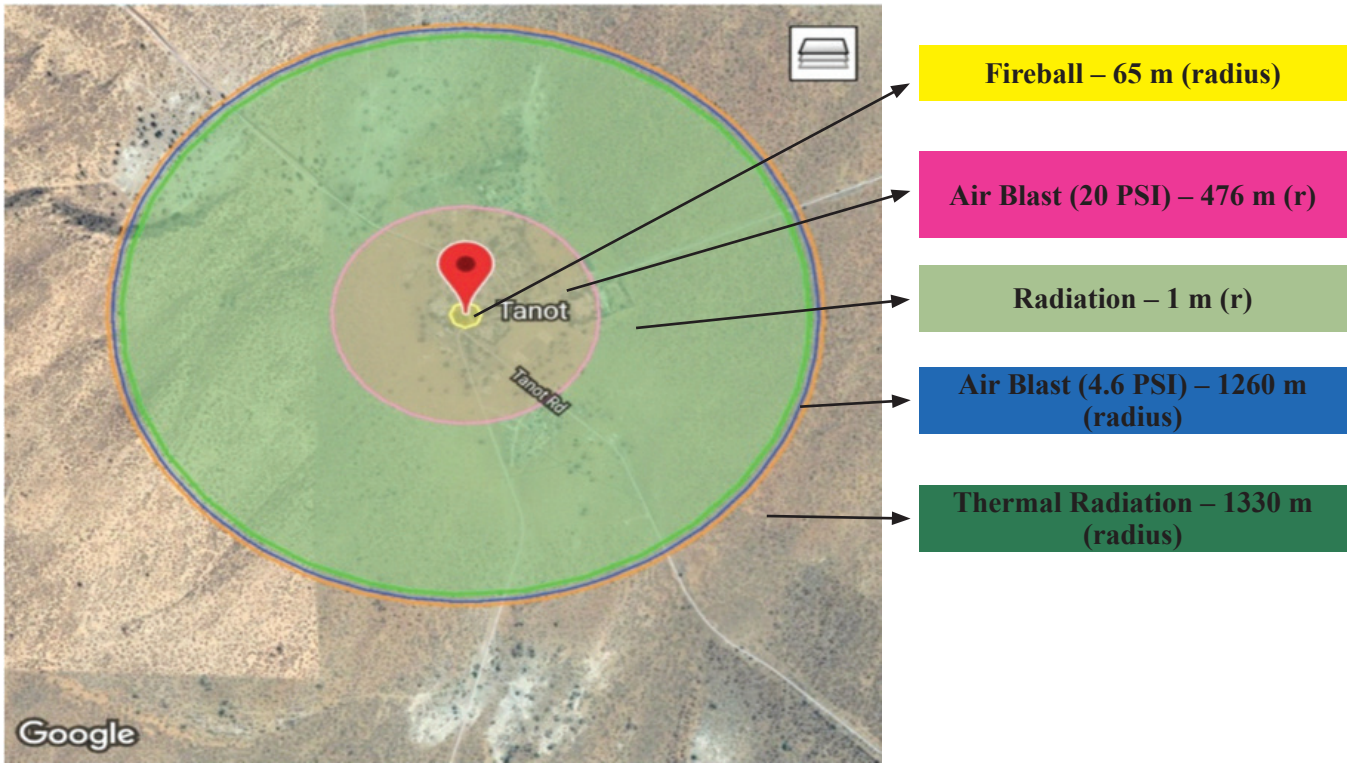


Figure 6.6: Effect of Medium Altitude Burst of NASR (5KT) at Tanot

Calculation Results of Medium Altitude Burst of NASR (5KT) at Tanot:

- **Airburst** with a capacity of **5 KT** occurred at an altitude of **515 m.**
- Cloud height - **4800 m.**
- Cloud radius - **1400 m.**
- Visibility up to - **12 miles.**
- Impact at a distance of **2000 m** from **Ground Zero:-**
  - **Overpressure** (0.16 atm) - Buildings will get damaged.
  - **Shock wave** will come through **5.679 sec**.
  - **Fireball** radius **65 m.**
  - The dose of **initial nuclear radiation** (One minute after the explosion) will be **less than 30 rad.**

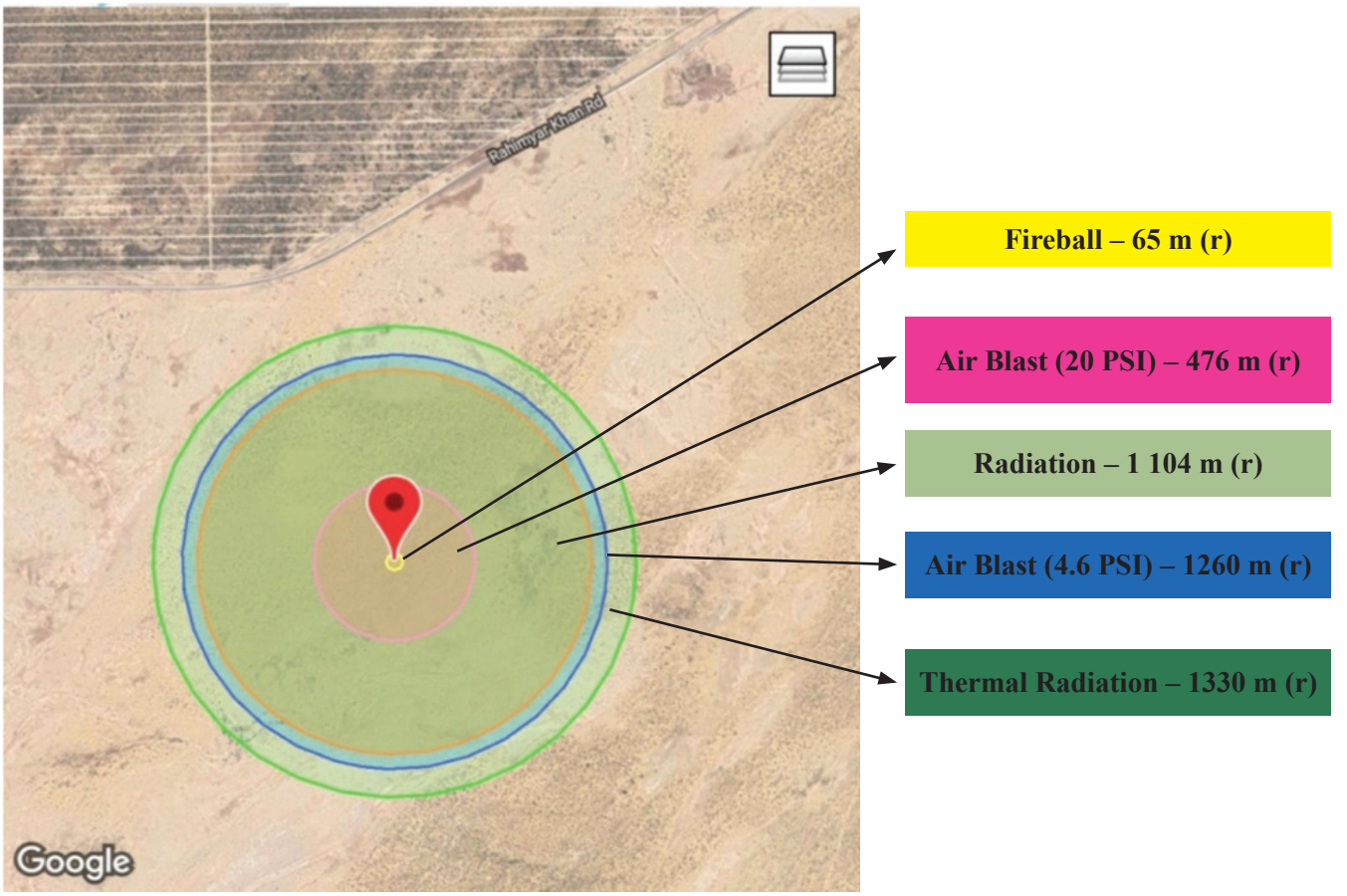


Figure 6.7: Effect of Ground Burst of NASR (2 KT) near RYK

Calculation Results of Ground Burst of Nasr (2 KT) near RYK

- **Ground burst** with a capacity of **2 KT**.
- Cloud height - **3600 m**.
- Cloud radius - **1200 m.**
- Depth of the funnel (depending on the soil) will be between 8 to 11 m with a funnel radius of 18 to 30 m.
- Visibility up to **12 miles.**
- Impact at a distance of **5000 m** from Ground Zero:-
  - **Overpressure** (0.149 atmosphere) atmosphere. Heavy consequences are not expected.
  - **Shock wave** will come through **14.41** seconds.
  - **Fireball radius 60 m.**
  - The dose of **initial nuclear radiation** (One minute after the explosion) will be **less than 30 rad.** No detectable clinical effects in humans.
  - Significant local fallout is possible.

6.4 Implications of Pakistan's Employment of TNWs on the Battlefield

13. The quantum of TNWs required to support its nuclear warfighting strategy can only be estimated based on the length of the frontier, the terrain suitable for operations, the degree of destruction sought on impressing forces and the depth to which such attacks will be conducted. Going by the NATO prescription, the numbers will be a few thousand; on the other hand, a few scores will certainly not be enough to stop the Indian armed forces' offensives. The required numbers must be more substantial, creating complex dynamics of security, footprints, signatures and delegation of authority.
14. Applicability of TNWs against IBGs across the border, which will give limited reaction time to Pakistani decision-makers, seems highly unlikely since these TNWs will require preparatory time, staging forward of missile systems into the theatre of decision, the delegation of command and control to field army, timely release of codes for the launch of TNWs, protection of TNWs against asymmetric threats and selection of suitable targets based on confirmed ISR.
15. Use of TNWs against IBGs within the Pakistan territory by a Division or Brigade Commander when Pakistani field formations are in contact with Indian troops will not be an easy decision, even for the formation commander who has been delegated the responsibility for use. The likelihood of TNWs being employed at bridgeheads is possible and is a lucrative target; however, even this option will result in substantial Pakistan Army casualties.
16. Accepting the scenario for the evaluation of employment of TNWs, it must emerge that Pakistan will have to use a vast number of TNWs at many places within Pakistan, the majority areas being Pakistani Punjab and moderately deep on the Pakistani side of the IB. The Indian Army is well-trained to fight through an NBC environment and conduct operations with its mechanised forces equipped with NBC-proof equipment. These operations will continue, notwithstanding the larger politico-strategic response at the national level.
17. The main effect of the TNW usage against India by Pakistan will be: - (Nagal, 2016)
    (a) Devastating large tracts of Pakistan's territory due to the nuclear fallout and direct consequences of nuclear explosions (heat, blast and radiation at scales comparatively lower than bigger weapons, but still substantial enough).
    (b) Radiation of a reasonably big area within Pakistan.
    (c) Unleashing radioactive clouds into the atmosphere, which will travel over other parts of the world?
    (d) Destruction of urban and rural areas in the vicinity of the area of operations.
    (e) Large-scale destruction of unprotected troops, but not mechanised forces.
    (f) Escalation from TNWs to strategic responses will result in large-scale destruction of counter-value targets, causing further problems of damage, death and radiation worldwide.
18. Compared to the days of the Cold War, technology has grown exponentially, improved and advanced C4ISR systems provide better transparency, and TNW forces deployed during the pre-war period will be detected to a considerable extent. TNWs differ from normal deployments for their locations in

depth, communications equipment, the pattern of deployment areas, air defence troops and security troops for ground protection. These unique features will give out specific signatures to satellites, air reconnaissance and Unmanned Aerial Vehicles (UAVs), communication detection equipment and intelligence/Special Forces. These possible deployment areas offer plausible options of counter-action to India in order to eliminate or disable their use before and during the war. This range from covert operations to destruction in nuclear retaliation and between cyber warfare, sub-conventional operations and pre-emption. The concept of conventional pre-emption significantly includes the application of force by the international powers to prevent a nuclear holocaust by removing the TNW capability from Pakistan.

6.4.1 Calling the Bluff

19. Pak views NASR as fulfilling its new nuclear concept of "full spectrum deterrence", a concept built on achieving deterrence to defeat India's conventional superiority. Pakistan's belief hinges on a perception that TNWs will not be provocative enough for a rationale and democratic India to respond with 'massive retaliation. Not only would the response pose a decision dilemma, but it also would not stand the scrutiny of world opinion. This premise, founded on a flawed perception, has already been put to rest by the statement of the Defence Minister of India, Shri Rajnath Singh, who stated, "**India may see a major shift in its policy of using nuclear weapons. Till today, our nuclear policy is 'No First Use'. What happens in future depends on the circumstances**". (India Today, 2019).

6.4.2 Doctrinal Dilemma

20. Pakistan's use of TNWs pre-supposes that India would be forced to fall back on flexible response options rather than **massive retaliation** as a response strategy (flexible response is the use of a variety of diplomatic, political & military strategies). This disregards India's stated policy on the use of nuclear weapons. It is fraught with risk and miscalculations.
21. If Pakistan's strategy is to use TNWs against advancing Indian IBGs as a **warning shot** or a tripwire to signal further escalation, then the likely result will be further escalation. Aside from moral ascendancy, a TNW affords the aggrieved party justification to shift the conflict space from military spaces to population centres**. It affords India as the aggrieved party to not only exploit the international sympathy but also retain the option of responding "using all available options and at a place and time of own choosing", which need not be the TBA**. **More importantly, the levers of escalation control are unwillingly handed over to India.**

6.4.3 Operational Challenges

22. On the issue of coordination & control of TNWs, AVM Kapil Kak argues that centralisation of decision-making in a tactical nuclear war game is difficult and risks the temptation of a Corps Commander from ordering the firing of a TNW "in a distressing operational situation with probably no contact with higher authorities". He quotes Henry Kissinger, who famously said, "**Not so much through the**

action of the Mad Major of the horrors of accidental war as through the best judgment of a hard-pressed officer in the confusion of combat" (Kak, 1998).

6.5 Conclusion

23. The NASR & other TNW threats from Pakistan against India's IBGs / Pro-Active Strategy doctrine, when examined in the backdrop of fissile material constraints, design challenges, number of warheads required for warfighting strategy, the duplicity of command & control and ISR capabilities of Pakistan undoubtedly raises many genuine doubts.
24. The delegation of authority to lower-level officers in a TNW scenario is inevitable. If not done at the opportune time, it reduces the probability of employment. It is evident that the TNWs will have a very limited impact on Indian mechanised forces but shall destroy large tracts of Pakistan's territory. Hence, Pakistani claims of "pouring cold water over cold start" is just bluster.
25. TNWs are not the panacea for all problems of the war zone. India has many options to deal with the threat, most significantly, to eliminate them by non-nuclear means before ground operations commence and ultimately employ the strategy of massive retaliation to cause unacceptable damage. Operational Commanders may be assured of the fallacy and ill-conceived logic of Pakistan's TNWs. **It is a bluff that needs to be called.**

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PART 4

GREY ZONE

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GREY ZONE OPERATIONS IN THE INFO SPACE DIMENSION: CALL TO ACTION FOR THE INDIAN ARMED FORCES

Section 7

Lt Gen R.S. Panwar

7.1 Introduction

In simple terms, Grey Zone Warfare (GZW) encompasses all the means states and non-state actors adopt in the operational space between peace and war to achieve politico-military objectives. Therefore, when viewed from a strategic perspective, one needs to analyse how the different instruments of comprehensive national power (CNP), succinctly captured within the Diplomatic-Information-Military-Economic (DIME) paradigm, may be leveraged by a state to conduct effective GZW. Also, since GZW innately dovetails into a state of all-out military conflict, the role of the Armed Forces is bound to be central to the conduct of GZW.

The character of military operations is undergoing a transformational change in the 21st Century. There are two main features of this change: firstly, military conflict is expanding from the traditional domains of land, sea and air to the newer space and cyberspace/ Infospace domains; and secondly, armed forces employ military capabilities increasingly for the conduct of GZW. Often discussed is the expansion of military operations into newer dimensions under the umbrella term Multi-Domain Operations (MDO). Information Operations (IO), in turn, are an increasingly important component of the MDO construct. This paper focuses on the employment of IO in the conduct of GZW.

Since the canvass of IO is vast, this work touches upon only a few conceptual and operational aspects, leading to specific recommendations in the context of the Indian Armed Forces. It commences with a brief overview of GZW, DIME and MDO and, against this backdrop, goes on to analyse the operationalising of IO in the Indian context.

At the outset, IO is an evolving discipline, and the terminology used in this work remains undefined in Indian doctrine. Since we widely accept that IO concepts and terminology have primarily originated in the US, this work derives meanings of terms from US DOD definitions. This work focuses more on discussing the concepts and less on professing any particular terminology. However, we can never discount the importance of the precise definition of terms in any military doctrine.

> The beginning of wisdom is the definition of terms. - *Socrates*

7.2 Grey Zone Warfare and the DIME Paradigm

7.2.1 *Grey Zone Warfare*

Although the term Grey Zone Warfare is widely used in the literature today, as yet, no national strategy or military doctrine appears to have defined it formally. A US Special Operations Command (USSOCOM) white paper of 2019 defines GZW as "competitive actions among and within state and non-state actors that fall between traditional war and peace duality" (Kapusta,2015). A more descriptive definition formulated by a RAND study (Lyle et al., 2019) is as follows:-

> *"The grey zone is an operational space between peace and war, involving coercive actions to change the status quo below a threshold that, in most cases, would prompt a conventional military response, often by blurring the line between military and non-military actions and the attribution for events".*

The above study also lists out several features which characterise GZW, as follows: grey zone (GZ) operations remain below the threshold that would justify a military response, unfold gradually over time, lack attributability (not applicable to all), use extensive legal and political justifications, stop short of threatening the defender's vital interests, are typically built around non-military tools, and target specific vulnerabilities in the targeted countries.

7.3 IO vis-a-vis the DIME Paradigm

A nation's power to impose its will and achieve its national objectives emanates from its CNP. In a popular conceptualisation, instruments of national power include diplomacy, information, military, and economy, collectively identified by the acronym DIME. Newer acronyms such as MIDFIELD, which add the elements of Financial, Intelligence, Law and Development, convey a much broader array of options for asserting national power (Department of Defense, 2018, pp. II-8).

In order to conduct GZW, it is these instruments of national power which must necessarily be employed. Different government agencies would create effects using these instruments as a national endeavour. Under the DIME construct, the Armed Forces are fully responsible for the 'M' component. They also play a significant role in wielding the '**(I)**' capability for furthering national objectives; IO refers to this component of DIME.

7.4 IO as Military Operations in the Information Realm

Having seen how we view IO as one of the components of CNP for the conduct of GZW, let us now contextualise IO within the spectrum of military operations. These days there is frequent reference in the literature to a five-dimensional battlespace construct comprising the land, sea, air, space, and cyberspace domains (Department of Defense, 2011). Of these, the recently added space and cyberspace domains uniquely characterise warfare in this Information Age. Although they use the terms dimension and domain

synonymously, there are several nuances beyond this paper's scope. While the first four domains are physical, cyberspace is a manufactured virtual domain. The cyberspace domain needs further elaboration. According to the Indian Army's Doctrine, Information Warfare comprises three primary components: cyber warfare, electronic warfare, and psychological warfare (Indian Army, 2018, p. 10).



It merits mention here that, in this paper, the use of the term Cognitive Operations is preferred over Psychological warfare for reasons explained subsequently. If the fifth dimension is restricted to cyberspace alone, then there is no field of play for the other two components of IO, namely, electronic warfare and cognitive operations. Although 'Information Operations' has gained currency only recently, we can trace its origins to the late twentieth century. In this context, it is interesting to note that in the 1993 seminal article by John Arquilla and David Ronfeldt, Cyberwar is Coming!, they used the term Cyberwar as a synonym for Information War (Arquilla & Ronfeldt, 1997). Using the term Cyber as the fifth dimension in a broader sense, then it may be better to rename this dimension as Info-space. Alternatively, there may be a need to factor additional domains into the battlespace manually. We can do this by adding the Electro-Magnetic (EM) and, perhaps, the Cognitive dimensions to the five-dimensional battlespace construct. The multi-dimensional battlespace construct also provides the fitting backdrop for discussing Multi-Domain Operations (MDO), which is innately a joint services notion (Feickert, 2021). In the Indian context, while the traditional domains of land, sea, and air, in terms of the charter, broadly map to the three Services, i.e., Army, Navy and Air Force, the space and cyberspace domains have more of a tri-Service flavour. Such a mapping may not be valid in the case of China, where it chartered Strategic Space and Cyberspace Operations to the recently raised PLA Strategic Support Force (PLA SSF) (Costello & McReynolds, 2018). Even in the US, where for instance, the US raised a Space Force to defend its interests in space (US Space Force, 2021). Under the relatively new paradigm of MDO, it is best to refrain from attempting to link domains to Services. This de-linking is implicit in a recent USAF definition of the domain, which seems to be precise and meaningful, and reads as follows:

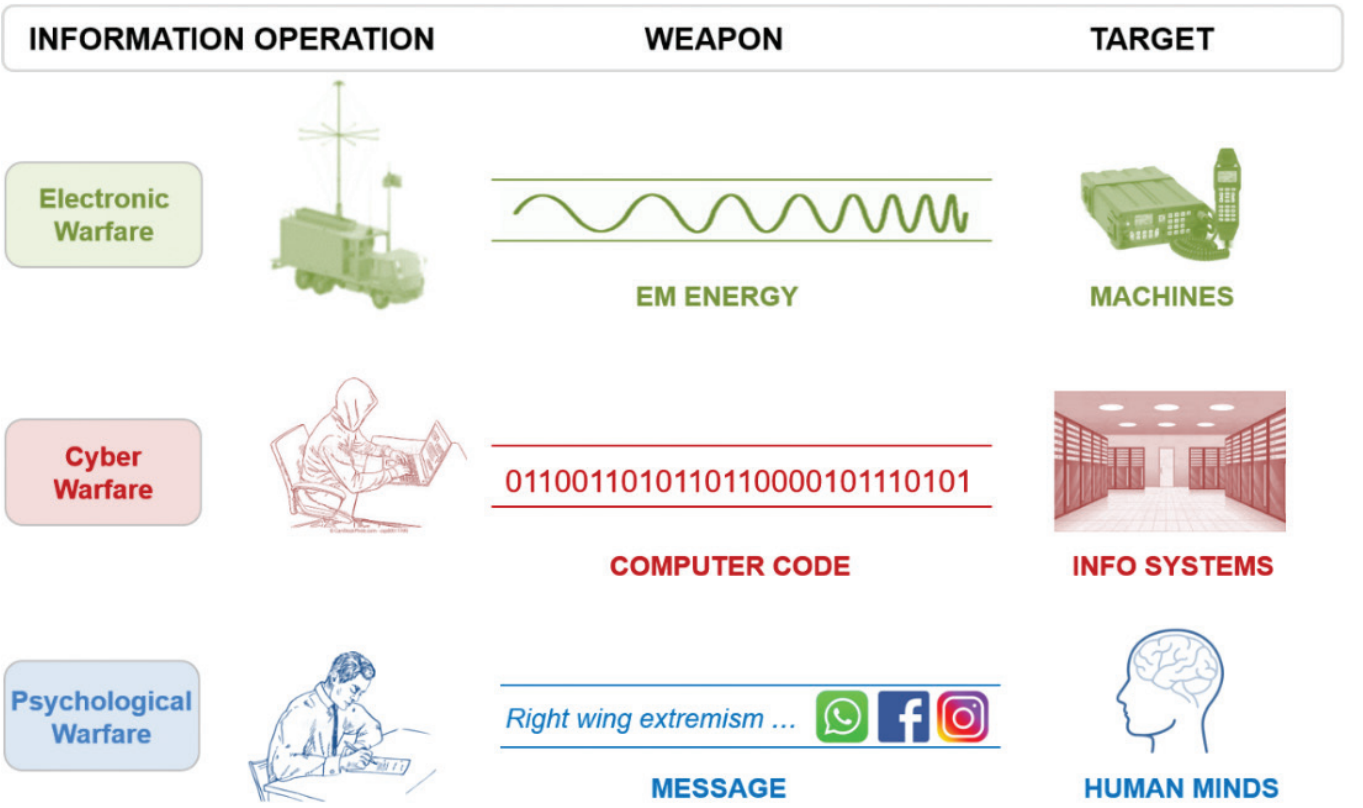
> *[A domain is] a sphere of activity or influence with common and distinct characteristics in which a force can conduct joint functions (Curtis E Lemay Center, 2020)].*

Whichever way we define a domain and conceptualise MDO in the 21st-century battlespace, it would be a mistake to underestimate the increasing importance of cyber, electronic and cognitive operations in modern warfare, wherein GZW is gaining increasing importance in the spectrum of conflict. Against this backdrop, we will discuss some significant issues related to IO in the following sections.

7.5 Information Operations: Concepts

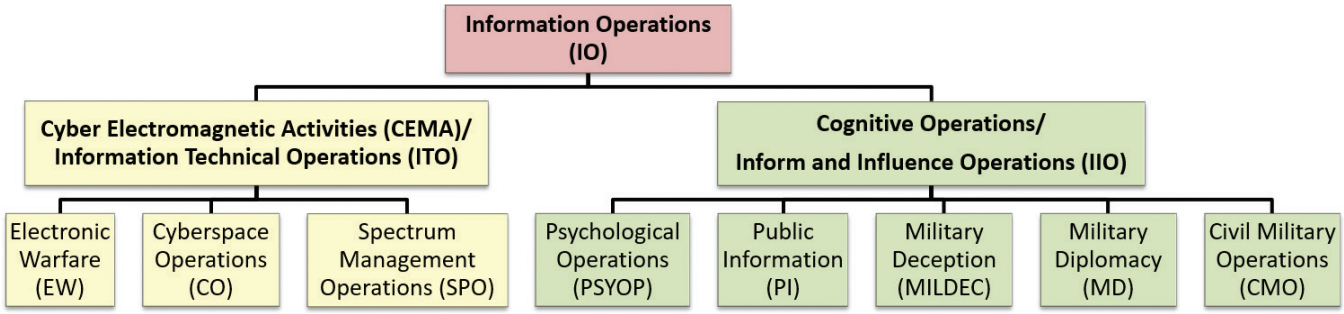
7.5.1 *Distinguishing amongst IO Components*

The figure below indicates a simple means of differentiating amongst the three primary components of IO: EW, cyber and cognitive operations. The weapon in the case of EW is EM energy which targets electronics in machines for cyber operations, and it is a piece of malicious code targeting data and software, and for psychological/ cognitive operations, the weapon is the message targeting human minds (Panwar, Convergence and Integrated Deployment, 2020)



Amongst these three, cyber and EW are more closely related. The US Army – although notably not the DOD – groups these two capabilities under Cyber Electro-Magnetic Activities (CEMA) (United States Army Combined Arms Center, 2014). China calls their synergetic employment Integrated Network Electronic Warfare (NEW) (Kanwal, 2009). Russia groups these two capabilities under information-technical and information-psychological domains, the two main strands of information warfare in Russian thinking (Giles, 2016).

A logical grouping of various IO capabilities is given below (Panwar, Grey Zone Operations in the Infospace Dimension: Imperatives for India, 2021).



7.6 *Cognitive Operations*

The term Cognitive Operations is considered preferable over Psychological Operations. Under this category, one can group several capabilities, vital amongst them being as follows: PSYOP are operations which convey selected information – not necessarily truthful – to foreign audiences in order to influence their behaviour; Public Information (PI) are actions aimed at informing foreign as well as domestic audiences; Military Deception (MILDEC) activities mean to mislead adversary military decision-makers deliberately; Military Diplomacy (MD) involves relationship building with foreign publics and military audiences, and Civil-Military Operations (CMO) are activities carried out to influence the civilian populace in an operational area to achieve the desired objectives (Headquarters Integrated Defence Staff, 2010). An example is the Army Sadbhavna projects in J&K, which are best characterised as actions that convey meaning. A 2013 RAND study uses the term Inform and Influence Operations (IIO) for this group of capabilities, with a nuanced difference between inform and influence components (Porche III et al., 2013). All the above IIO capabilities aim to create effects in the cognitive domain. Moreover, the literal meaning of the term *Psychological Operations* tends to convey a restricted scope analogous to its PSYOP component. For these reasons, the term *Cognitive Operations* seems more appropriate for referring to these capabilities as compared to *Psychological Operations*.

All the above IIO capabilities aim to create effects in the cognitive domain. Moreover, the literal meaning of the term Psychological Operations tends to convey a restricted scope analogous to its PSYOP component. For these reasons, the term Cognitive Operations seems more appropriate for referring to these capabilities than Psychological Operations.

7.7 CEMA and Cognitive Operations: Distinct Streams of IO

It is also essential to understand that CEMA and Cognitive Operations are two fundamentally distinct streams of IO, as this has significant implications for evolving organisational structures. While the conduct of CEMA requires base expertise in communication and computer science disciplines, the conduct of Cognitive Operations requires experts grounded in the social sciences.

It merits highlighting here that, in the author's opinion, each of the IO capabilities listed above requires specialists trained well beyond the basic disciplines, a fact that our Armed Forces need to recognise

adequately. The result is that a floating population of non-specialists is staffing IO appointments because officers are posted to these mostly on a one-off tenure, and non-specialists because they receive only limited training in these disciplines.

Against the above conceptual backdrop, the following sections discuss selected essential issues related to operationalising each of the three components of IO by our Armed Forces, commencing with EW.

7.8 EW Operations and CEMA

7.8.1 *EW, CEMA and EMSO*

In the above figure, we can observe the grouping of another function termed Spectrum Management Operations (SMO) under CEMA. This grouping is per US Army doctrine (United States Army Combined Arms Center, 2014). Another US DOD terminology widely used is Electro-Magnetic Spectrum Operations (EMSO), a US DOD conceptualisation comprising the EW and SMO functions (Chairman Joint Chiefs of Staff, 2020). In this section, however, the discussion is focused on the synergetic employment of cyber and EW capabilities.

7.8.2 *Integrated Employment of EW and Cyber Operations*

Both EW and CO comprise Attack (e.g., jamming/ DDOS attack), Defend (e.g., radio silence/firewall) and Exploit (e.g., electronic interception/ cyber espionage) sub-functions. Fundamentally, however, EW and cyber operations are quite different. The degree of convergence between them is governed by how closely the two capabilities need to work together to produce the desired synergistic effect. An excellent example of integrated employment for carrying out a cyber-attack on an adversary cellular network, as a first step intrusion into the network through the EM medium (EW function), would be needed before malware is injected (CO function) in the second step.

7.8.3 *Organisational Structure*

If EW and cyber capabilities are to be employed independently, joint effects may be achieved simply through staff coordination. However, more than staff coordination is required to execute tightly intertwined operations efficiently. One option is to raise CEMA units comprising both cyber and EW experts. However, these capabilities being fundamentally different, purity of units and cadre is desirable from a specialisation perspective (Panwar, Existing and Proposed Organisational Structures, 2020). If this is so, CEMA effects which require tighter cohesion, could be achieved by putting together mission-oriented cross-functional teams.

7.8.4 *Specialisation: An Imperative*

We cannot achieve the desired level of specialisation by posting personnel on one-off tenures. For officers, EW and cyber profiles must be created based on multiple tenures, while for other ranks creation of separate trades is warranted.

In order to implement these policies, we can avoid raising an altogether separate line directorate and cadre. We need to give ownership of these disciplines to specific existing line directorates.

For example, in the IA, the Corps of Signals and the Military College of Telecommunication Engineering (MCTE) are best suited for nurturing EW and cyber capabilities. While the charter for EW does rest with Signals, the same is different for cyber operations, which is still (inexplicably!) envisaged as an all-arms charter. Even in the case of EW, the existing HR policies could be more conducive to nurturing the desired degree of specialisation. In general, it is imperative to bring about transformative changes in HR policies to develop highly specialised skill levels needed in the EW and cyber fields across the board in all three Services.

7.9 Cyber Operations

7.9.1 *Cyberspace Governance: Role of the Armed Forces*

In the traditional domains of land, sea and air, our Armed Forces are equipped with both offensive and defensive capabilities and assigned the charter for protecting our national sovereignty in these domains. It is noteworthy that a similar charter does not extend to either the space or cyberspace domains. Expressly, concerning cyberspace, the charter today is limited to protecting military cyberspace, not national cyberspace. However, a limited mandate and some capability for conducting full-spectrum operations in cyberspace do exist with them.

Protection of national cyberspace, like the traditional domains, must necessarily be based on a strategy of active defence, which is contingent upon possessing the capability to carry out offensive cyber operations (Panwar, National Cyberspace Model and Cyber Defence Strategies, 2020). Also, for the Armed Forces to carry out effective MDO, this capability must become their responsibility exclusively. The PLA SSF and the US Cyber Command exemplify this thought process. In contrast, as per the Indian cyber governance model in vogue today, the primary charter for offensive cyber operations rests elsewhere. Similar remarks may be made with respect to the space domain.

Our cyber governance model requires a transformative change, and we must evolve a suitable response to the PLA SSF within the ambit of our Armed Forces. The urgent imperative of developing an early counter to the PLA SSF also dictates that we need to upgrade the Defence Cyber Agency (DCA) needs to be upgraded to a full-fledged tri-Service Cyber Command on priority, a recommendation made by the Naresh Chandra Committee as early as 2012 (Panwar, Contours of a Bricks and Clay Phased Approach, 2021)

7.9.2 *Skill Development*

The scarcity of high-end cyber skills for full-spectrum cyber operations in existing cyber organisations has always been a constraint. Raising the DCA has further accentuated this problem and will likely be the most daunting hurdle to overcome while raising a Cyber Command.

In the author's view, given the right HRD policies, the Armed Forces are best placed to recruit, train and sustain a specialist cyber cadre, better than any other agency. A requisite charter for such operations is absent within the Armed Forces. This absence of a requisite charter has resulted in a lack of adequate focus in this area. Therefore, cyber skill development within the Armed Forces needs to be critically

reviewed (Panwar, Cyber Skill Development in the Indian Armed Forces: An Exploratory Overview, 2020).

7.9.3 *Cyber Sovereignty*

In the context of protecting our national cyberspace, the contentious issue of cyber sovereignty also merits deliberation. Intimately tied to the idea of national sovereignty is the sanctity of territorial integrity. For the traditional domains of land, sea and air, territorial boundaries are well-demarcated. In contrast, we perceive cyberspace as a 'global commons' premised on the perceived universal right to the free flow of information. Nevertheless, given the strategic vulnerabilities emerging in cyberspace, India needs to seriously consider moving away from a 'global commons perspective to one based on' cyber sovereignty, as exemplified by the Great Firewall of China. Specifically, the need for firewalling at least our critical national cyberspace merits deliberation, which we may activate on a need basis as per national security dictates (Panwar, National Cyberspace Model and Cyber Defence Strategies, 2020).

7.10 Cognitive Operations and CIO

7.10.1 *Organisational Structures*

It has already been highlighted that CEMA and Cognitive Operations are fundamentally dissimilar in character, requiring different streams of expertise. It is important that, at all levels, the design of staff structures be premised on a clear separation of these two streams of IO. In line with this thought, it is proposed that ADG (IW) and ADG (Strategic Communications) should be re-designated as ADG (CEMA/ ITO) and ADG (Cognitive Ops/ IIO) respectively, with the two verticals merging under DG (IW), which should preferably be re-designated as DG (IO). Also, separate specialist staff appointments for CEMA and Cognitive Ops should be created down to Corps HQ.

As of now, no PSYOP units/ establishments are in existence. Cognitive operations are being undertaken by non-specialist staff officers posted at various headquarters on one-off tenures, thereby resulting in sub-optimal execution. There is an urgent need to raise field establishments for the conduct of these specialist operations. As a first step, a pilot tri-Service Cognitive Operations Unit should be raised, manned by personnel trained in the different cognitive disciplines (Panwar, Part II: Contours of a 'Bricks and Clay' Phased Approach, 2021).

7.10.2 *Skill Development*

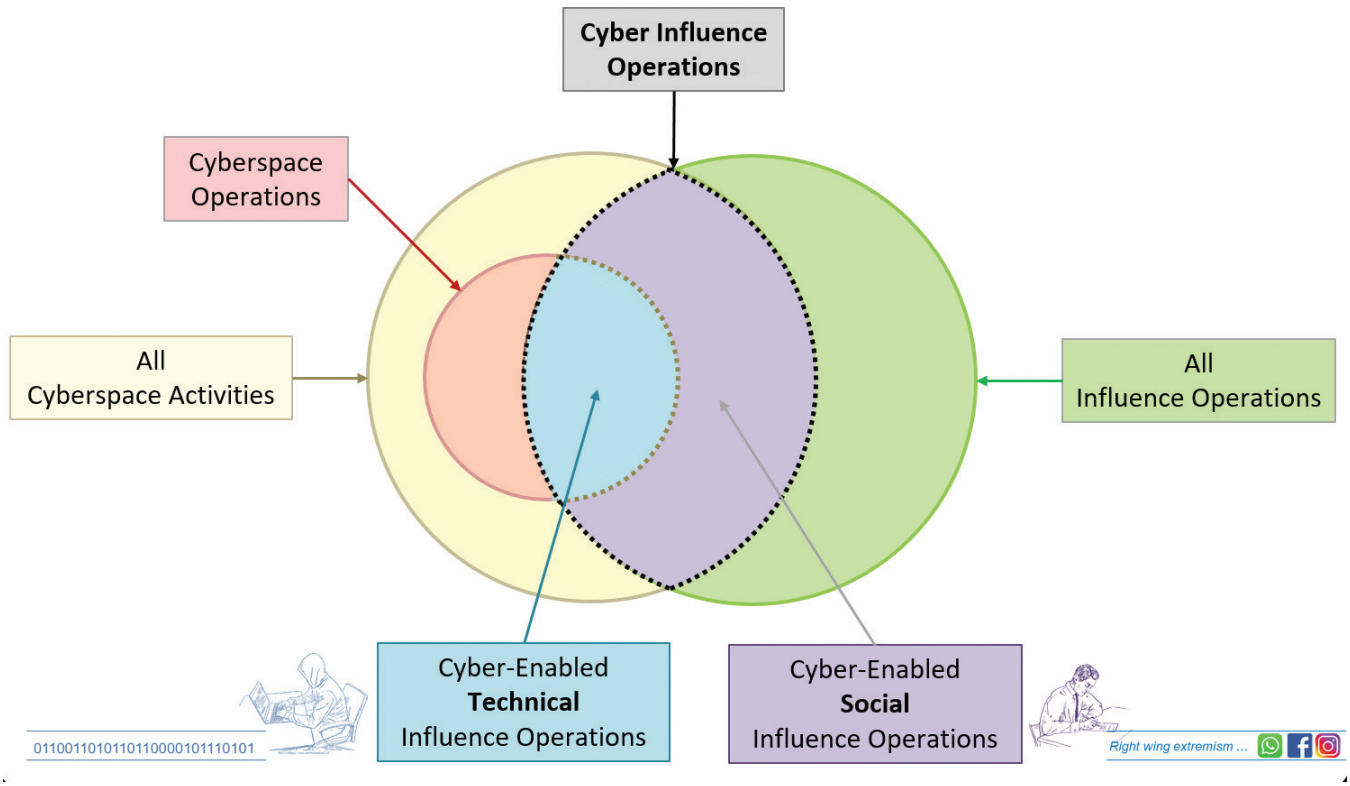
It has already been highlighted that CEMA and Cognitive Operations are fundamentally dissimilar in character, requiring different streams of expertise. It is essential that, at all levels, we premise the design of staff structures on a clear separation of these two streams of IO. In line with this thought, a proposal is that ADG (IW) and ADG (Strategic Communications) be re-designated as ADG (CINEMA/ ITO) and ADG (Cognitive Ops/ IIO), respectively. These two verticals can merge under DG (IW), which should

preferably be re-designated as DG (IO). Also, creating separate specialist staff appointments for CEMA and Cognitive Ops down to Corps HQ is imperative.

As of now, no PSYOP units/ establishments are in existence. Cognitive operations are being undertaken by non-specialist staff officers posted at various headquarters on one-off tenures, resulting in sub-optimal execution. There is an urgent need to raise field establishments for these specialist operations. As a first step, we need to raise a pilot tri-Service Cognitive Operations Unit manned by personnel trained in the different cognitive disciplines (Panwar, Part II: Contours of a Bricks and Clay Phased Approach, 2021).

7.10.3 *Cyber Influence Operations*

We have discussed cyber and cognitive operations. We now give a brief overview of Cyber Influence Operations (CIO). CIOs lie at the confluence of Influence Operations and cyberspace activities. Only some cyberspace activities classify as cyberspace operations, e.g., trolling on social media platforms.



Only some cyberspace activities classify as cyberspace operations, e.g., trolling on social media platforms. Also, certain influence operations may not involve cyberspace use, such as public diplomacy, economic sanctions, and the like. CEMA involves the synergetic employment of cyber and EW expertise.

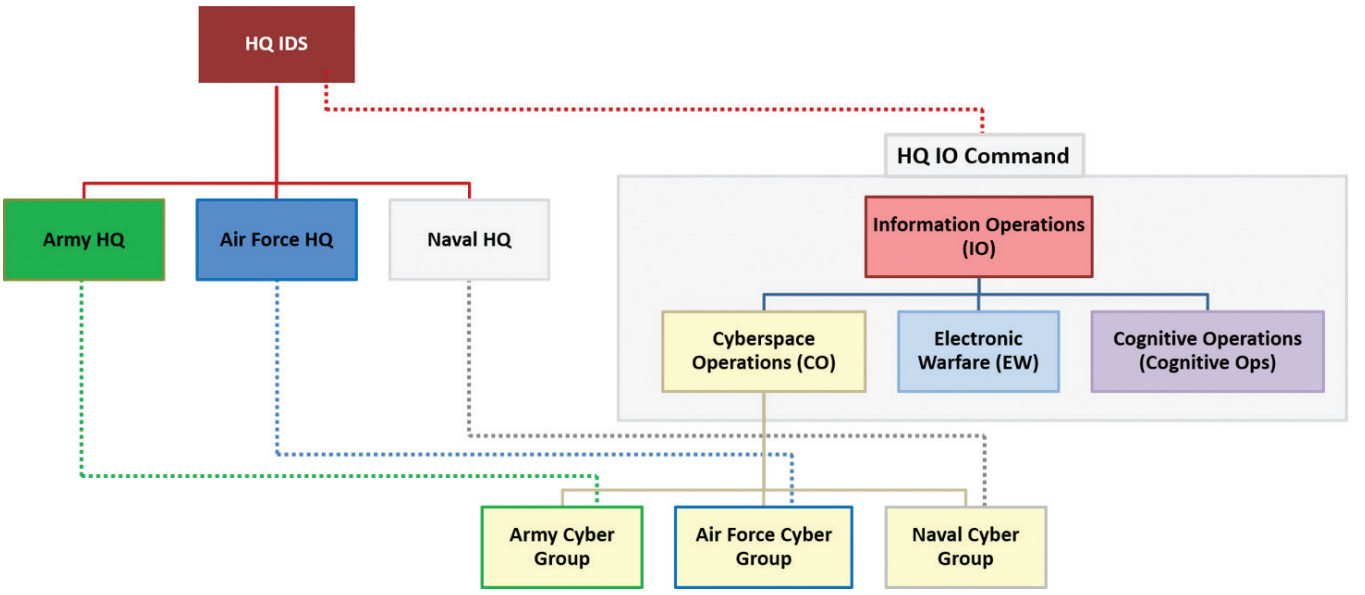
Similarly, the CIO leverages capabilities in the cyber and cognitive domains. However, only some CIOs employ cyber operations. For instance, disseminating biased narratives through social media platforms does not require special cyber expertise. It only requires expertise in generating the desired narratives.

On the other hand, hacking Facebook databases to obtain user profiles and send targeted messages based on psychographic profiling. Cambridge Analytica did this during the 2016 US presidential elections. It requires expertise in both cyber and cognitive disciplines. We term the former as Cyber-enabled Social Influence Operations (CeSIO) and the latter as Cyber-enabled Technical Influence Operations (CeTIO).

7.11 Towards a Tri-Service IO Command

The need to evolve a suitable Indian response to PLA SSF has been alluded to earlier in this paper. Even within the US DOD, there appears to be thinking that they need to develop and integrate their IO capabilities further and better, in line with their current thrust towards evolving Joint All Domain Operations (JADO) concepts and capabilities.

In the Indian context, upgrading the DCA to a Cyber Command should be considered the first step towards creating a Tri-Service IO Command. Using a 'bricks and clay' approach, this objective may be more plausible and resource-intensive than it might appear. An evolutionary approach appears to be feasible wherein, in the first phase, existing IO resources of the three Services are placed under an IO Comd HQ, to be raised, and follow a dual control architecture vis-à-vis existing Service HQ. Additional specialist units could subsequently be raised in a phased manner to boost the IO Command's capabilities gradually. A skeleton representative architecture of such an IO Command is depicted in the figure given below (Panwar, Part II: Contours of a Bricks and Clay Phased Approach, 2021).



7.12 Concluding Remarks

In conclusion, to emphasise that the Indian Armed Forces need to take transformative steps along three lines of action: One, evolve doctrine, an updated one for IO and also separately for cyber operations, EW and cognitive operations; two, raise additional EW units with state-of-the-art equipment profiles and a pilot cognitive ops unit upgrade DCA to a Cyber Command and pursue an evolutionary approach for raising a Tri-Service IO Command. Three, change HRD policies to nurture super-specialisation in various IO disciplines.

To add here, evolving doctrine and transforming HRD policies entail minimal resource commitment, only a change in mindsets. As regards the additional raisings proposed in this work, the increments involved are of the order of 'merely' a few thousand personnel. In the author's view, if India is to develop adequate capabilities for GZW and transition from a strategy of physical attrition to one of cognitive attrition, an adjustment of manpower of this magnitude from the kinetic to the information and cognitive realms is warranted.

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Section 8

ISRAEL: THE MASTER OF GREY WARFARE AND LESSONS FOR INDIA

Lt Gen Dushyant Singh



8.1 Introduction

States have traditionally indulged in wars as a last resort to settle disputes or secure national interests before resorting to open hostilities. Israel represents a rare case of engagement in grey warfare as the country experienced a considerable shift in its priorities toward conventional forces — a phenomenon counter to its earlier approach. Even though the country has been increasingly engaging in covert operations alongside regional neighbours such as Saudi Arabia, Israel's hybrid/grey zone warfare tactics largely target other Arab states such as Syria, Lebanon, and Iran, as well as non-state actors such as Hamas and Hezbollah. This regional application of grey zone warfare results from an antagonistic relationship with its neighbours, many of whom do not recognise Israeli statehood. The shift from conventional forces stems from increased comfort and complacency with existing deterrence tools and tactics against surrounding Arab states. Over time, conventional conflicts transformed into a fight against asymmetric, often state-backed, entities such as in the First and Second Intifadas and the War against Hezbollah in 2006. HAMAS and Palestine Islamic Jihad (PIJ) have always attempted to provoke the Israelis into conventional action to invite international attention. This asymmetry necessitated

a considerable reorientation of Israel's resources away from conventional forces towards grey zone operations. The unbearable cost of conventional wars has encouraged Israel and other nations such as the US, Russia, China and Pakistan to indulge in grey wars, which offer cheaper options and better results.

For example, the US expenditure on wars in The Middle East and Asia since 2001 has reached a colossal sum of USD 6.4 trillion. (Amanda, 2019) Similarly, the Watson Institute of International and Public Affairs, Brown University report has concluded that more than 8,01,000 people have died directly from fighting, and another 21 million people have been displaced. (Amanda, 2019) The conflicts below the threshold of conventional War and rely on non-kinetic or kinetic means that provide non-attributability to a state or non-state actor are usually called grey conflicts. It would not be out of place to say that grey zone conflict may be considered an umbrella term to include covert operations, cyber warfare, information warfare, hybrid warfare, proxy warfare, threshold warfare, brinkmanship warfare, terrorism or even acts of sabotage and disruption of essential services. Indulgence by countries, especially Israel, in the Grey Zone conflict has also gained traction due to emerging technologies such as artificial intelligence, quantum computing and cyber technology, which have offered easy tools to take such activities. However, conflicts in the grey zone existed, such as psychological warfare, state-sponsored terrorism, fueling civil wars, and regime changes in vulnerable democratic and autocratic countries.

8.2 Preview

Israel's geopolitical situation has been volatile since its independence and has remained at the forefront of warfighting with its Arab neighbours. As technology has evolved, it has also sharpened its response. Initially, it relied on conventional and covert responses such as assassinations and sabotage to counter its security threats before taking the extreme step of conventional wars. With the advent of new-age technologies due to the revolution in the digital domain, it was subjected to new threats such as cyber-attacks, information warfare, traditional suicide attacks, bombings, and intifada. While the Israeli security forces, security & intelligence agencies, and Information Technology agencies and firms have developed excellent responses in the field of cyber security, space-based systems, and human & technological intelligence, their response in information warfare has remained behind its primary adversary HAMAS. However, the way it has responded proactively using grey z tools mixed with occasional conventional responses to counter the threats is worth emulating for India. India needs to follow the initiative-taking response approach of Israel if it wishes to remain ahead of its adversaries. India also needs to seek cooperation with Israel in cyber security, sharing of intelligence, and new-age technologies of AI, robotics, and drones to manage its security threats. This chapter will aim very briefly to understand the nature of the grey zone war and analyse Israel's grey zone activities, especially the offensive activities such as assassinations, cyber operations, and information operations. Interestingly, Israel could not respond effectively to the information operations campaign of HAMAS. It is also worth noting that the grey threats of Israel are like India, especially the ones related to J&K. Finally, the chapter brings out the relevant lessons that emerge from Israel's grey zone activities and recommendations for its defence and security agencies for managing India's grey threats.

8.3 Understanding the Grey Zone War

Grey Zone is a fertile ground for psychological, cyber and terror warfare. These are essential tools for waging grey zone conflict against an adversary to score a competitive advantage. The term grey zone conflict has been gaining popularity among strategists and military professionals. However, is the term, an old wine in a new bottle? If one were to analyse the critical aspects that constitute grey warfare, one would realise that Chanakya, in the case of India, and Sun Tzu, in the case of China, had laid out a clear concept of winning wars without active military intervention. For example, War has been very broadly defined by Chanakya and is not restricted to only physical War. He has defined four types of War which are being practised even today. The first type he mentions, Mantrayudh or War by Counsel, means the exercise of diplomacy. It would be even more appropriate to refer to it as diplomatic warfare in today's context. He goes on to qualify it by saying that it would usually be resorted by a weaker King, not in a position to wage an open war. The second type of War mentioned by Chanakya is Prakasayudha, or open War. This form is still relevant, although strategies and tactics to fight them have undergone a sea change. The third type of War he mentioned is Kutayudha; concealed warfare means upajapa or psychological warfare, including the instigation of treachery in the enemy camp. The fourth type mentioned by him is Gudayudha, or clandestine warfare. It involves using covert methods to achieve the aim without waging a battle, usually by assassinating the enemy. As per Chanakya, in a clandestine war, the king uses his agents and allies, vassal kings, tribal chiefs and the suborned friends and supporters of the enemy. (Rangarajan, 1992, p. 636) It is evident that the art of covert warfare, propaganda warfare, proxy warfare, diplomacy and treachery, which are part of the grey zone today, was very much prevalent in India, and one need not go far to learn about them. Arthashastra has a complete chapter on covert and clandestine warfare, giving out the strategies, tactics, and detailed methods of conducting such a form of warfare similar to the current concepts of grey warfare.

Diplomacy, propaganda, clandestine activities, instigation, treachery, and psychological warfare are all prevalent today and usually clubbed under the umbrella term of grey warfare. These grey zone activities remain below the threshold that would justify a military response. However, the commonly accepted understanding of grey wars in the modern context comprises specific key characteristics. The aggressors aim to scale their actions to fall short, or well short, of established triggers for military action. The second characteristic of grey zone activities is that they unfold gradually over time rather than bold, all-encompassing actions. The aim is to achieve intended goals in one step by stretching aggressive moves over the years or even decades to prevent or inhibit decisive responses by the adversary. The third characteristic of the grey zone is the lack of attributability. Most grey zone campaigns involve actions in which the aggressor aims to disguise its role entirely or partially. Whether using cyber-attacks, misinformation campaigns, or proxy forces, these actions allow a grey zone aggressor to deflect responses and obstruct the potential for successful deterrence by simply denying the involvement of the state or non-state actor in the act.

However, there are actions like the overt reclamation of islands in the South China Sea by China which falls in the grey zone and are attributable. Aggressors justify these cases using extensive legal and political justifications, often grounded in historical claims supported with documentation. Chinese go a step further and buttress their legal claims in the South China Sea (SCS), seeking the support of other countries to

back their point of view, even if the legal standing of their claims in the international community is tenuous. These tactics complicate the task of generating a local response and enforcing punishments. Fifth, to avoid decisive responses, grey zone campaigns typically stop short of threatening the defender's vital or existential interests. The sixth characteristic of grey zone aggression is that, even as it seeks to remain below critical thresholds for a response, it uses the risk of escalation as a source of coercive leverage. Grey zone campaigns are designed to remain below the threshold for a large-scale military response, but they also sometimes, and paradoxically, convey the risk of more violent military actions that offer escalation leverage and complicate deterrent threats. Seventh, grey zone campaigns are built around nonmilitary tools as part of the general approach of staying below critical thresholds for a response. They employ diplomatic, informational, cyber, quasi-military forces, militias, and other tools and techniques to avoid the impression of outright military aggression. To respond, defending states must develop similar tools of statecraft to threaten or conduct deterrent threats. Finally, grey zone campaigns target specific vulnerabilities in the targeted countries. These can include fault lines in the political landscape, social fabric, ethnic population composition, economic stagnation and resulting needs and grievances, and weak hard power of the targeted countries. Israel has yet to resort to all the tools in the grey zone while working in the grey zone. It has developed a fair amount of capability in covert operations, cyber activities, and information operations. In the next part, the chapter will analyse Israel's key grey activities to draw out relevant lessons for India.

8.4 How Does Israel Fare in the Grey Zone?

Israel has developed sound operating procedures to conduct covert operations such as assassinations, cyber-attacks, target surveillance, technical intelligence, and information warfare. Although, in the field of information warfare, they lag behind HAMAS. This lag is due to a lack of external support in the European countries, the active diaspora of the Palestinian people, and friendly influences of Palestinians in other countries, which helps HAMAS generate international sympathy in their favour. This support comes from the collateral damage to the people of Palestine following harsh retaliatory action by the Israeli security forces causing casualties to civilians and public property. Due to the relative disadvantage in waging an effective information war, the Israelis have consistently mixed their War fighting with grey zone actions but focused on the countries in its neighbourhood. The gradual shift of non–state actors like HAMAS and PIJ resorting to grey activities against Israel, like suicide bombings, terror attacks, and public protests (Intifada 1 & 2), has changed the operational environment. These attacks have demanded an increased investment in counterterrorism-related tools and techniques — mostly meant for fighting the militant outfits in Gaza. The events of the 2006 war and the findings from the Winograd Report instilled doubts about Israel's conventional capabilities, sparking a re-evaluation of Israel's hybrid balancing between conventional and unconventional capabilities. The IDF now follows a mix of conventional and grey zone tools to meet the security challenges posed by state actors such as Iran, Syria, HAMAS, PIJ and Hezbollah. Hence the development of drones and Iron Dome Systems to counter the Al Qassam Rockets of HAMAS, Palestinian Islamic Jihad (PIJ), and Hezbollah, along with responses with grey zone tools such as assassinations, cyber attacks and information operations using social media. This section will highlight some of the salient grey

activities of Israel from which relevant lessons for Indian Defence Forces and Security agencies can be drawn.

8.5 Cyber Attacks

Cyber warfare is rapidly emerging as a major threat in the world thanks to increased computer and computer network usage. Some of the statistics related to cybercrime and cyber warfare would put this form of warfare in the correct perspective. Firstly, Cybersecurity Ventures had predicted that cybercrime damages would cost $ 6 trillion annually by 2021. (Morgan, 2017) Secondly, by 2025 this is likely to increase to $10.5 trillion. (Morgan, 2017) Thirdly, data breaches worldwide on Feb 20 were estimated to be $ 93 million. Due to the pandemic, these figures jumped four times to $ 377 million in February 2021.

Fourthly, the figures for a data breach in India in February 2020 was $1.3 million. However, due to the pandemic a year later, the figures for February 2021 were $ 9 million, almost nine times more. Fifthly, online fraud has increased by 28% due to the COVID pandemic annually. Sixthly, while the containment of the data breach took 77 days in 2019, its containment in COVID took 83 days in 2020. A single data loss amounts to Rs. 5522/- in India. (Alawadhi, 2021) Ransomware has emerged as The Number 1 Cyber threat: the damages have increased from $8 billion in 2018 to $ 20 billion in 2020. See the graph in figure 4.

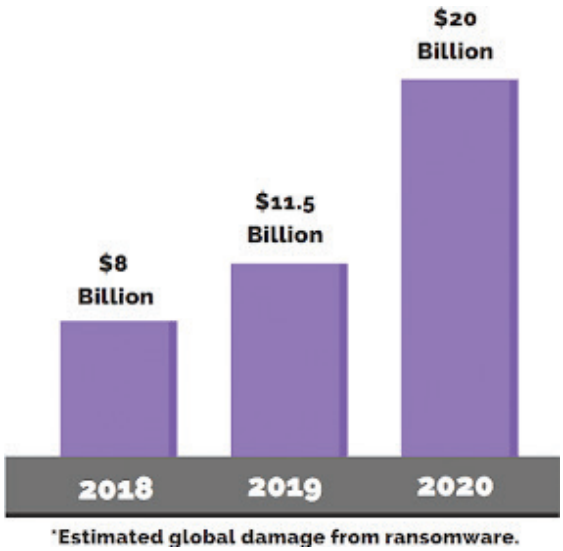


Figure 8.1: Estimated Global Damage due to Ransomware

Every business is getting affected in a big way. Every 11 Sec, a business will be under attack. (Jason Firch, 2021) These figures and the human resource involved in such crimes and frauds in the dark net are easy availability for state actors to employ them to use against them. Israel has borne the maximum brunt of such attacks. It has also excelled in combating cyber-attacking in this form of warfare.

The **Stuxnet** virus attack disrupted the alleged Iranian Nuclear Weapon Development programme and was the first digital weapon of geopolitical importance. It has changed the way wars are being fought. Its manifestation is immensely profound in the grey zone arena. While several people may have heard of the

Stuxnet Virus attack, many may not know that Israel is the global leader in cyber warfare, be it defensive or offensive operations. Being located on a piece of geography that constantly poses an existential threat, Israel regularly has many cyber-attacks on its government websites and data systems. (Sobleman, 2013) A couple of years back, the Israeli defence forces issued a press release saying that its Israel Defence Forces (IDF) 8200 Unit prevented an airstrike staged by ISIS against a Western country. Due to the proliferation of cyber technology and the versatility to strike in varying forms and methods, the magnitude of the cyber security industry today is estimated at approximately USD 82 billion and growing at breathtaking speed. (Jyotsna, 2020) ***Due to existential threat, high technological threshold, and US financial backing, Israel is the unquestioned leader of cyber warfare worldwide***.

"Stuxnet attack on Iranian Nuclear Weapon Development programme is a first real example of militarisation of cyber-attack. Another landmark example of Israel's cyber capability is the **Pegasus software.** The Pegasus, aka Q Suite, marketed by the Niv, Shalev & Omri (NSO) Group aka Q Cyber Technologies, as "a world-leading cyber intelligence solution that enables law enforcement and intelligence agencies to remotely and covertly extract" data "from virtually any mobile devices", was developed by veterans of Israeli intelligence agencies. (Mazoomdaar, 2021) It is alleged that the Indian Government also used this software to keep Indian citizens under surveillance, which became a huge controversy. The Supreme Court finally constituted a committee to investigate the matter. While it is a much more powerful tool to conduct grey zone activities, it cannot attack or disable infrastructure. It can be used in conjunction with other malware that strikes at the functioning of infrastructure; it was the Stuxnet that shook the world with its ability to destroy highly protected virtual and guarded systems such as the nuclear reactor of Iran. Moreover, it was the first such major cyber-attack in the world. Moreover, this merits a detailed examination and is discussed below.

8.6 Stuxnet Attack on Iranian Nuclear Enrichment Reactors

In the context of Stuxnet, a question often asked is, "Why not an overt strike to dismantle the Iranian Nuclear Ambition?" This is a question that the most common public asks, given how Israel strikes at militant groups in Palestine and other Arab Countries. In an interaction with media persons in 2007, Mossad's Director, Intelligence, said, "War would lead to a conflagration in the region that would include a war with Hezbollah and Hamas, and Syria." Hence, a non-contact and virtuality-driven attack was preferred over a military strike to destroy and disrupt the Iranian Nuclear Programme. ***Frank Rieger of the legendary German hacker organisation Chaos Computer Club calls it a digital bunker buster***. A man named Sergey Ulasen discovered Stuxnet. (Stark, 2011) While Symantec could not find the culprit, based on Ulasen's report, they have been able to map this virus's presence in various countries' computers. About 100,000 computers worldwide, including more than 60,000 in Iran, 10,000 in Indonesia and 5,000 in India, were infected by the virus.

How did Stuxnet reach the Iranian nuclear system? It entered the nuclear programme centrifuge recording system in a relatively simple but innovative manner. Step 7, an industrial software program developed by the German engineering company Siemens is used to running the centrifuges at Iran's Natanz facility. The aluminium centrifuges have a rotor inside the centrifuges that rotates at a speed of 1,000 times per second. In the process, uranium hexafluoride gas is centrifuged so that Uranium-235 accumulates in

the centre. The process is controlled by a Siemens system that runs on Microsoft Windows". (Stark, 2011) This System was the e-highway that was used to infiltrate the Stuxnet virus. Stuxnet takes advantage of a security hole in the e-highway provided by Microsoft Windows that makes it possible to manipulate the system. This System was the e-highway that was used to infiltrate the Stuxnet virus. Stuxnet takes advantage of a security hole in the e-highway provided by Microsoft Windows that makes it possible to manipulate the system. ***As a result of this programming error, the virus can be introduced into the system through a USB flash drive, for example. The installation begins unnoticed as soon as the drive is connected to a computer in the system.*** In a second step, Stuxnet lodges itself into the part of the operating system that manages USB flash drives, where it sets up a checksum, the exact purpose of which is unclear. The infection stops when this sum reaches the value of 19790509. (Stark, 2011) Symantec speculates that this is some code. When read backwards, the number could become May 9, 1979, the day Habib Elghanian, a Jewish businessman, was executed in Tehran. Is this a coincidence? There are methods to enter and or breach programmes such as Windows. The dark net researches to find these loopholes and refer to these loopholes or black holes as Jewels, which they sell for $100,000 or more. "Stuxnet exploits no fewer than four of these digital jewels." (Stark, 2011)

Similarly, the virus was so programmed that it would self-destroy itself after the third infection to prevent its explosive spread, which would have led to easy detection. The Israelis pride themselves on the fact that they could push back and disrupt the Iranian nuclear programme without starting a war. As per David Albright, an expert on the Iranian Nuclear Programme, only 1000 centrifuges and 8000 were still functioning. It would need Israel or the US to develop a virus with a much greater lethality to entirely derail the Iranian nuclear programme hence the Israeli strategy of combining cyber with the assassination of Iranian nuclear scientists. However, Stuxnet has forced nations to invest heavily in the cyber security of their infrastructure and strategic programmes.

8.7 Information Operations

Most of us would be familiar with the old saying of Sun Tzu, "The eventual goal must be to win a war without fighting battles" (400–320 BC). Similar preaching was given by Kautilya around the same time frame of recorded history, i.e., "Use of force should be the last resort once conciliation, placation with gifts, sowing dissension and use of clandestine force/subversion fails to achieve King's interests (in present context read National Interests."(Rangarajan, 1992, pp. 598 -599) Israel has been constantly under attack by Hamas and PIJ in the information domain. Further, the Israeli Defence Forces personnel are constantly enticed by fake profiles of women to extract military intelligence from the subverted Israeli Soldiers. (Rosenzweig, 2017) ***The PLO and Hamas have aimed to cause a major political polarisation in the Western and Arab World in favour of its cause of securing an independent and sovereign Palestine Nation***. It has successfully portrayed Israel as an illegitimate aggressor and human rights violator amongst the European Nations, especially the UK and Netherlands. For instance, Britain offers societies in solidarity with the Palestinian cause, with pressure groups frequently seeking to provide 'no-platform' or block pro-Israel narratives from being disseminated. At the same time, most universities have a substantial support base for wider Boycott, Divestment and Sanctions (BDS) campaigns. (BDS, n.d.) Further, the Palestinian and Arab political leaders have been keen to link support for the movement with appeals to a global

Muslim community. **On the other hand, the Israeli effort in Information has lagged behind the efforts of Hamas & co.** Hamas, in particular, intensified the information war by increasing the utilisation of electronic social media. Organisations such as **'The Electronic Intifada'** (The Electronic Intifada, n.d.), which features several internationally based contributions, have since taken the lead in bringing military interventions in the Palestinian territories to international audiences via diaspora communities and activist networks. (Kouts, 2016)

Israel picked up the game late and adopted the concept known as **Hasbara**[1], which meant explaining and justifying Israel's actions to the world to counter the information operations of HAMAS. The term has since been replaced by **'public diplomacy**'. However, the Second Lebanon War (2006) saw a haphazard strategy implementation resulting in high-profile leaks. ***Realising the pitfalls, Israel formulated a new policy which was centralised and incorporated a more significant number of social media platforms such as YouTube Channels, Twitter accounts and blogs***. ***Operation Protective Edge (2014) saw the development of this centralised IDF media presence driven by 'New' and later 'Interactive' media units.***

These consisted of 'commanders' and 'soldiers' whose military operations were to compose and disseminate posts to social media and to blog information environment. For example, during Operation Protective Edge (2014), it issued up to 20 Tweets per day and uploaded short, sharp battlefield infographics, videos, and interviews to engage the information environment in several ways. The messages contained data that would have previously been disseminated to journalists, such as reported arrests, confirmations of air strikes and other up-to-date developments. Instead, these were sent directly to commentators, allowing it to engage with multiple key audiences, such as journalists themselves, international observers and bloggers sympathetic to Israel and potential adversaries at once. (Waterman, 2017, pp. 93-94) In one example, the IDF warned journalists to refrain from interviewing or reporting close to Hamas lest they be used as human shields. Thus it shows its employment in not only condemning the legitimacy of Hamas operations but also in applying pressure to the Hamas information campaign, building in a 'hard' edge to the approach that had the side effect of attracting widespread international attention. (Account, 2012) (Waterman, 2017, p. 93).

To sum up, the methodology that the Israeli Defence Forces (IDF) has adopted to conduct information operations with the help of social media platforms consists of; firstly, it provides a more real-time battlefield update after duly vetting it, thus pre-empting the misinformation campaign by its adversaries which results in online users, opinion makers or influencers and journalists to follow the official social media accounts constantly. In the case of India, unfortunately, real-time Information is invariably scanty and delayed. Adopting such an approach has provided supporters of the Israeli cause worldwide to bypass the traditional media channels and influence a larger global audience. (Kerr, 2014) The Information is so disseminated that it allows for quick sharing by the recipient in his or her network of supporters. Such a form is also called flooding the environment with your message. Second, the social media teams sought to win international audiences by producing dramatically edited images of Western cities vulnerable to HAMAS rocket attacks. Some of these images are interactive in that the recipient could locate their house and see if it fell in the range of HAMAS rockets. This highlights Israel's dilemma as to why it takes harsh measures against HAMAS and other terror groups lest the rest of the Western world become victims of possible action by these groups should they decide to attack the West. Third, it attempts to

release battlefield pictures that reveal the terror groups'attempts to force civilian casualties. Finally, these messages highlight the actions IDF took to prevent civilian casualties. (Waterman, 2017)

While justifying its actions and depicting the accurate picture of the situation through the skilful use of the social media described above, it also employs kinetic measures to target broadcast facilities and TV facilities of Hamas (Al Aqsa TV). (Waterman, 2017) Israel has made considerable effort to conduct effective information operations in the various campaigns fought by it. However, using weaponry to target terrorists hidden in densely populated areas resulted in a high civilian death toll of civilians thus undermining the Information Warfare effort to bring down the image of Hamas and other politico-terror groups. (Waterman, 2017). To ***summarise, Israel has remained behind HAMAS in information operations and needs better solutions to win the information war. A surprising finding indeed.***

8.8 Salient Lessons for India

Like Israel**,** India also works within the constraints of democratic functioning, which dictates the careful orchestration of events. However, response using grey zone tools such as cyber, covert operations and information operations has a predominant place in countering the security threats to Israel from its adversary, especially when it undertakes pre-emptive action to deal with an emerging security problem, for example, the Stuxnet action against Iranian nuclear reactors involved in enriching weapon-grade uranium. It gives Israel the freedom to stretch its response against a threat or attack by its adversary across the entire spectrum of conflict. It also helps Israel in escalation management, besides responding to non—state actors' forays in a conventional war. India, too, appears to have resorted to taking grey zone actions, for example, the conduct of the Uri, Balakot and Myanmar strikes. However, it must do much more, especially in the covert operations domain. Salient lessons for India from Israeli operations in the grey zone are discussed below.

8.9 Cyber Warfare

Importance of Cyber Operations in new-age warfare is well understood. It is an amazingly effective and surgical tool of grey zone warfare. It has been used both in grey as well as in overt wars. Current Russia – Ukraine conflict is a recent example where cyber war was used by Russia both as part of its Grey Zone campaign from 2014 to 2022, and now both sides are extensively employing it during the ongoing open warfare attacking each other's war-waging capabilities and capacities such as radar systems and command and control systems and infrastructure projects. India has the potential in the form of a large IT manpower base to become a world leader in cyber warfare, both offensive and defensive but needs the requisite political will to execute and structures to manage and conduct this form of warfare. Towards this end, the recent statement of the Prime Minister to set up a National Cyber Force (NCF) is a long overdue initiative, and given the way Ukraine has been abandoned by NATO, Atmanirbharta in Cyber operations is not only desirable but a mandatory goal. It is a much-needed initiative long overdue, especially with reference to our offensive capabilities.

Similarly, the Ministry of Defence needs to expand the Defence Cyber Agency to include offensive cyber operations. This will help the Operational Military Commanders fluence the course of conventional and low-intensity conflicts. The Agency must be solely responsible to the Chief of Defence Staff to empower it, optimize its functioning to cater for the needs of the three services and at the same time keep it focused on National Security Interests and in sync with the proposed National Cyber Force.

8.10 Information operations

Information war is a multi-audience campaign and needs to be targeted at both international and national audiences. Israel, while internally successful, has been unable to counter the Palestinian Perception Management war. Similar has been the experience of the US in Iraq, Russia in Ukraine, and India in Kashmir. India needs to find a way to deal with countering the deep-rooted narrative-based information war in Kashmir. Israel's approach of only banking on the IDF for perception management is unlikely to yield positive results as no one actor can monopolise the information domain. It needs multiple tools and strategies. There is also a need to synchronise information campaigns with actions on the ground as there is a constant danger of provocation by the counter state, for example, the recent killing in Arunachal Pradesh of civilians by the Security Forces. The story resembles the Israeli situation to a great extent.

In the Indian context, an analysis of perception management strategies across the different arms of government, including its security agencies, in a counter-insurgency context would bear relevance. India has had to balance competing political priorities and insurgencies in various parts of the country, which means that multiple games of perception management are being conducted by anti-state elements. Given the immense diversity of attitudes, values, worldviews, and ways of life within the country, studies of how the state intersects with these to engage in perception management will have important ramifications for weighing up its effectiveness over the long term. Suffice it to say that information operations agencies must be created by hiring influencers, and media professionals, such as content writers, storytellers, editors etc., to run believable campaigns. Adhocism that exists today in the defence forces, other Security Forces and associated Government Departments must give way to creating an apex structure by drawing elements from various departments, security agencies and civilian professionals to manage information war as a single coordinated body targeting the anti-India campaign by internal and external agencies and countries.

8.11 Conclusion

Grey warfare includes a host of activities; however, in this paper, an endeavour was made to highlight the best practices of Israel that are least talked about, especially in India. Discussing assassination, offensive cyber operations and creating pro India narrative by skilful use of technology at times using half-truths as a state policy in line with the Kautiliyan way of thinking has been rarely discussed or talked about in the policy-making discussions. However, the geopolitical realities are contrary to the Indian approach of near idealism in theory and practice. Will we survive with such an approach where countries and military blocks are working only for their national interests? Moral support through favourable statements in international forums and a few sanctions here and there do not help one overcome an adversary. We

should not forget that India was also able to get over the sanctions following the 1998 Pokhran Blasts. What we need is self-reliance in defence and security domain as soon as possible, for in case of a conflict in grey zone or open war. However, until we achieve self-reliance in high end technologies dealing with grey zone warfare from both defensive and offensive perspective against an offensive action taken by our adversaries across the entire spectrum of warfare would be exceedingly difficult.

Finally, as can be seen from the spectrum of grey zone, it encompasses the entire range of a nation's ability be it economics, military, media, information, communications, diplomacy, and intelligence a whole of nation approach is necessary. Civilian agencies spanning across departments would be as crucial as that of the Security Forces. But the most defining condition for a country to become victorious would be the will to indulge in it both offensively and defensively. So, unless India develops the will and the capability to develop grey zone tools of warfare, we may face serious challenges in dealing with threats that India faces externally and internally.

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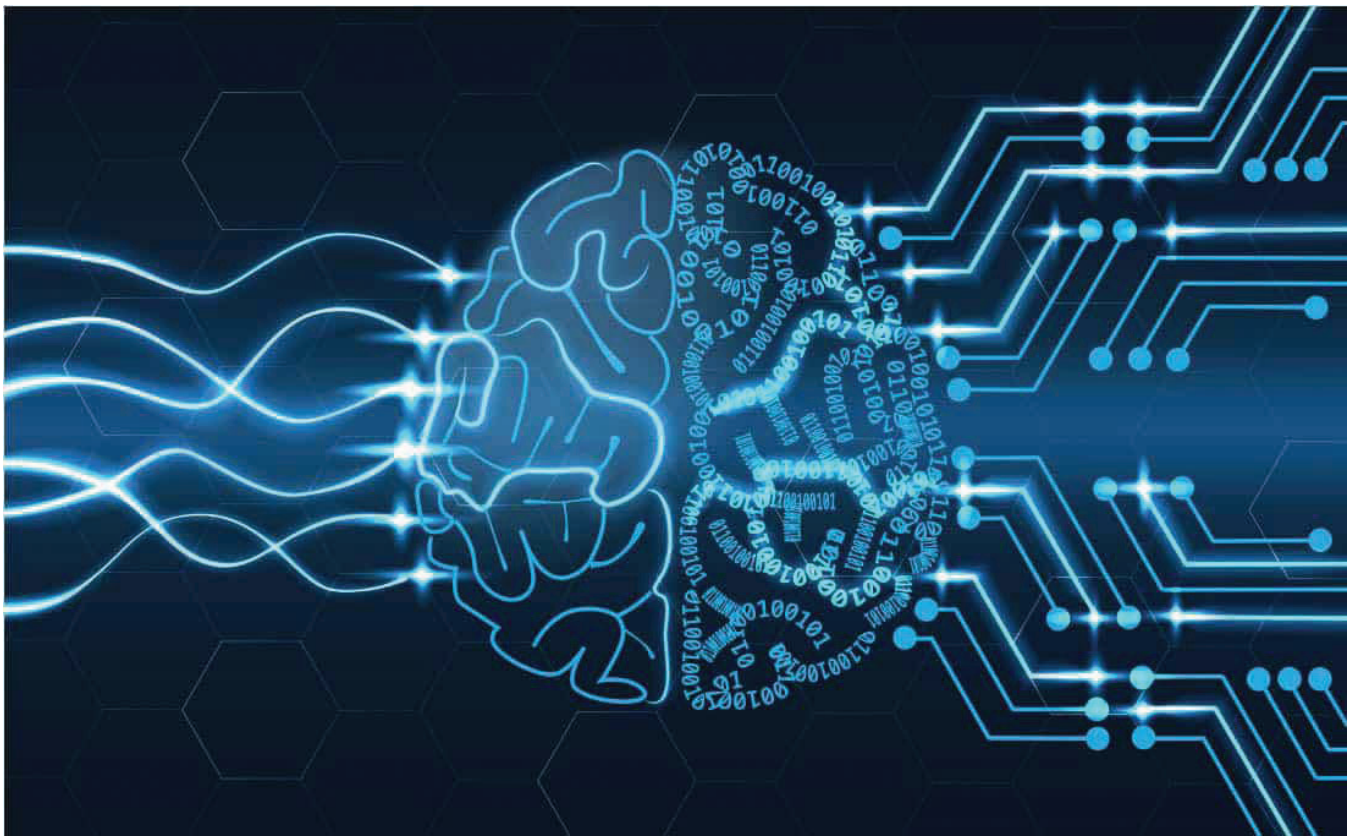
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Section 9

THE TRUTH ABOUT ARTIFICIAL INTELLIGENCE THE DEATH KNELL FOR HUMANITY

Col Vijaykant Chenji



9.1 Introduction

AI has imperceptibly been reshaping human societies like never before. It has surreptitiously penetrated our personal lives and influenced our thoughts and actions. AI has profoundly impacted every facet of our lives. While some of the developments have been positive and fundamentally improved the quality of life, many issues cause serious concerns.

Man is unknowingly losing his free will to machines. Eventually, the damage to humanity due to AI will far overwhelm the benefits. Many scholars and eminent sociologists have raised the issues of adverse impact on humanity at large. There is a threat to the very survival of humanity if some scientists are to be believed.

9.2 Ominous Warnings of AI

Artificial Intelligence (AI) is today a reality and has entrenched itself in the human psyche. Many consider it a marvel of scientific development. However, few scientists and scholars are alert to its ominous manifestation threatening the very survival of humankind. Concerned about its fast spread, a few social organisations have come together to check its possible misuse.

9.3 FLI is one such organisation

The Future of Life Institute (FLI) is a non-profit organisation that works to reduce humanity's global catastrophic and existential risks, particularly existential risks from advanced artificial intelligence (AI). The Institute focuses on three fundamental issues. Grants allocation for risk reduction, educational outreach, and advocacy within the United Nations, US government and European Union institutions. Its founders include MIT cosmologist Max Tegmark and Skype co-founder Jaan Tallinn, and its board of advisors includes entrepreneur Elon Musk. It has been active since 2014 and has eminent members on its board, including Elon Musk, who contributed $10 million as initial funding for the program. This program focuses on making AI safer and beneficial to humanity rather than powerful and dominant. The NGO based in New York focuses on ways to mitigate existential risks facing humanity, particularly from artificial intelligence (AI) (Future Life Institute, 2022).

Some risks envisaged are managing self-driven cars, civilian drones, lethal autonomous weapons, face recognition and solutions to job losses due to AI. The above risks have a direct impact on societies across the globe. These serious concerns impact society and could cause chaos if situations run out of control (Conn, 2015).

Even Henry Kissinger, former US Secretary of State and Nobel Laureate, has cautioned about the perils of uncontrolled AI. In his recent book 'The Age of AI And Our Human Future', jointly co-authored with Eric Schmidt, an entrepreneur and Daniel Huttonlocher, Dean of MIT Schwartzman College of computing, the three intellectuals have joined together to tell us what AI means for the future of humankind (Kissinger, Schmidt, & Huttenlocher, 2021).

AI is fast spreading its wings and could soon swamp societies, making tsunamis look like a seasonal drizzle. This swamping of societies is likely to happen sooner than expected. The imminent catastrophe will be so swift and intense that people will have little time to react. By the time the world realises it would have been too late. AI is a lot like the Oil-spill. It spreads quietly but rapidly. It is like oil spilling fast and spreading spatially and then in one spark erupting in an inferno. These foreboding thoughts have found resonance among the world's top scientists and philosophers.

9.4 What is AI

What exactly is AI? To the uninitiated, it simply means intelligence conveyed by machines instead of humans and animals displaying their intelligence. Modern researchers recognise its unlimited articulation of intelligence, acting rationally. As technology advances and machines become increasingly savvy and user-friendly, they are gradually excluded from the family of AI machines. Their applications have become ordinary and routine, as seen in calculators, fingerprints and facial recognition devices.

Since its inception in the mid-fifties of the last centuries, AI has graduated from some basic computing to solving human problems, brain simulation, mimicking animal behaviour and a host of other developments. However, in recent years AI has penetrated our daily lives making life easier. It has reduced the burden of repetitive tasks by providing us with many options.

Conversely, AI has robbed man of his ability to learn by mistakes. Every aspect of life is increasingly getting programmed through AI. With a mere touch of a button, things are happening in a jiffy. The human mind's function of 'thinking' is gradually outsourced to machines that provide ready-made solutions. It has hijacked man's thinking power and made him indulgent.

Initially, the penetration of AI may be gradual and may even appear to be a pleasant experience. It will be perceived as a boon and a technological marvel in the preliminary stages. AI will make life easy by saving time and reducing resources. Everything will be done by machines eliminating human error and enhancing efficiency. AI will perform all the functions from industrial to institutional work to individual needs. Unbeknownst to most of us, it will enter in a benign form, crawl slowly and soon spread its tentacles all over. As people are soaking in the benefits of AI, even before one realises it, communities would be swamped by the enormous power it wields only to enslave the whole of humanity. This scenario is not a fantasy or a sci-fiction. The reality is much nearer than most of us can imagine. We already see its impact, especially in the West. The threat is real, and the entire world could be in its stranglehold. It may be too late to wriggle out of a bad situation.

9.5 Perils of AI

Oblivious to man, AI has already entered our lives stealthily in the garb of an enabler, a facilitator, or a friend, gradually enveloping the whole of humanity into its web. From here onwards, more and more nations will come under its grip and get trapped, just like insects getting caught in the spider's web. Humanity in future could be one massive mass of robots blindly performing actions as dictated by its masters.

Let us consider a few examples. AI mastered Chess within a few hours after the game's rules were explained. It came up with a program called AlphaZero with mind-boggling moves that even the best Grandmasters could not match (DeepMind, 2018). In simulated dogfights, AI-powered jets have outmanoeuvred crack pilots with years of combat experience. Online AI dominates many human activities like education, medicine, entertainment, defence, sports, industry, aviation, space research, and other related fields.

The real risk will be in the military and security establishments where arms and weapons form the substratum. In the area of Lethal Autonomous Weapons Systems (LAWS), if adequate regulatory mechanisms are not in place, it could endanger human lives beyond acceptable levels and spell disaster (Khandekar, 2018, pp. 38-42). Once the military systems are deployed and activated, a recall will be difficult. In such situations role of diplomacy may become somewhat redundant. The last bastion of peace may render itself powerless.

Another dangerous application of AI is the 'face recognition system. It is an AI-based computer technology to find and identify human faces in digital images. Face detection technology can be applied to various fields — including security, biometrics, law enforcement, entertainment and personal safety — to provide real-time surveillance and tracking of people. By itself, this seemingly harmless technology can be a boon to society.

However, if it falls into the wrong hands, it can be misused by criminal elements unleashing chaos and violence. World leaders and influencers could become easy targets for militants and anti-social forces. In a crowd of a million, one individual can be picked up and eliminated. The locations of the target, the weapon and the operator could be at different places (Pant, 2018).

This spacing could make crime detection and preventive agencies very challenging. Even though technology may be highly sophisticated, these systems' easy availability and simple operation make them highly dangerous. The weapons, if controlled and operated by drones, make them even more lethal (Khandekar, 2018, p. 38). Unless NGOs like FLI come together to pressure governments and law enforcement agencies to legislate laws for regulatory controls, AI could wreak havoc across nations and cities in particular.

AI will fundamentally change man's thinking. The fundamental transformation, however, will come in the philosophical dimension. It will focus on how humans understand reality and consciousness. This dimension is likely to reshape human societal behaviour. Eminent scientists and innovators like John McCarthy and mathematician Alan Turin and many others did pioneering work in AI. They have discovered a new dimension of human intelligence. Little would they have imagined that AI would one day virtually swarm mankind mimicking human intelligence?

Notwithstanding its benefits, it is the risks of AI that are cause for worry. Simply put, AI is just developing and demonstrating human intelligence through machines. When machines acquire the power of human brains unknown to the masses, human beings become mere puppets in the hands of a select few who control the strings. Man, unconsciously surrenders his power of thinking to machines because it is a convenient tool. Many consider it a boon to humanity as it will mitigate human suffering. This mitigation is true to some effect. In the initial stages, it may appear to be so.

The developer of this tool being the man himself, AI is limited to the confines of human intelligence stretched to its extreme. Thus, the mind gets the power of control over all human activities. After that, a human being is just a robot controlled by machines. The future looks scary. AI portends gloom. If some scientists are to be believed, the countdown for the annihilation of humanity by AI has already begun. This belief may be an overaction or illusory, but the fears are real and even worrisome.

9.6 Wakeup Call From Experts

What, then, is the solution? Can the Tsunami of AI be arrested? Is there hope for humanity, or are we too late? Have we reached a point of no return? Is this the moment of truth?

Many intellectuals and scientists have expressed caution that it sounds gloomy. These are not ordinary people. Elon Musk, the business tycoon and the owner of Tesla, has been alerting the world regarding the dangers of AI. In 2014 while addressing the students at MIT, he cautioned them that he was *increasingly inclined to think that there should be some regulatory oversight, maybe at the national and international level, just to make sure that we do not do something very foolish* (Wallace, 2014)

Musk is no ordinary player in AI. His car company Tesla produces the highest number of cars enabled by AI Systems and robotics (Tesla, 2022). Tesla's latest cars in the market are brilliant. They have taken over the functions of manual driving both on highways and in cities with zero errors.

Elon Musk recently bought Twitter, a social networking site which produces 'nothing', for a whopping $44 Billion. In 2017, at a meeting of the National Governors Association, Musk reiterated his earlier stand that "the scariest problem" is artificial intelligence. This invention could pose an unimaginable "fundamental existential risk for human civilisation." (Condliffe, 2017).

Another eminent scientist, the late Stephen Hawkins, repeatedly red-flagged four significant issues confronting humanity in the last few years before his death. AI was one of them, the other three being population growth, climate change, and hostile Aliens. Speaking to a BBC news correspondent, he said that "the development of full artificial intelligence could spell the end of the human race." (Cellan-Jones, 2014)

Bill Gates, the owner of Microsoft, even as he was lauding the benefits of AI, has warned of its dangers too. In 2019 while speaking at a Symposium at Stanford on Human-centred AI, he sounded a note of caution, "The world has not had that many technologies that are both promising and dangerous — you know, we had nuclear energy and nuclear weapons,". (TechGIG, 2019)

Such ominous warnings from heavyweights like these should make the world sit up and heed their advice. However, the pace at which technology is developing has silenced the voices of many experts. Their sane words seem to be ignored and have fallen on deaf ears.

There appears little hope for redemption for the West, which is already caught in the AI trap. From the US to Europe, home to nearly 30% of the world's population, all activities have been taken over by AI. It has invaded the privacy of every individual and increased his dependency on simple things in life. Everything is automated and regulated by AI. Humans have little control over their freedom. To get a first-hand experience, one has only to walk through airports, hotels, Banks, and hospitals or book cabs, do online shopping and deal with Government bodies. Everything is online, be it paying bills or applications for admissions or educational institutions. There is no personal interaction since all services are only through machines.

People have fewer options and choices over their actions. Though outwardly, they may experience the feeling of freedom and reassurance, in reality, unknown to them, their actions are prompted by the machines. This experience could lead to a situation when they will unconsciously be making choices that could way lay them into a trap. They could blindly make decisions based on the head, not the heart.

Today each one of us is watched and snooped on. There is little privacy left. Our thoughts prompted by AI guides our decisions.

In recent times there has been a growing realisation that spiritual practices may be a possible solution to counter the proliferation of AI. Ironically, underdeveloped countries, mainly in the Indian Ocean Region (IOR), may be less impacted by AI because of the Oriental ethos, which is more spiritual. Societies that appear backwards and isolated may survive the long-term Tsunami of AI. The more the dependency on digital management, the greater the risk of Robotization of Human Societies. Remotely populated human habitations in mountains and jungles with underdeveloped communication systems may be beyond the reach of AI networks. These people could be the hope for humanity, who could retain their original free will, unaffected by AI.

It is necessary to analyse the effects of AI on human minds. There is growing evidence to show that AI is monitoring every movement and action of ours to understand our thoughts and desires. Accordingly, companies manipulate the markets, leaving people with little choice. Will Robotics reduce human thinking power converting them into robots?

9.7 Mind vs Consciousness

Let us now examine the role of the 'mind' to understand AI. The mind is not just an organ of the body. It is just a stream of thoughts or emotions that remains within its boundaries or sphere of influence; It is a set of faculties responsible for all mental phenomena. It cannot cross the limits of thoughts without losing its own identity. Any attempt to transcend the thought boundaries will dissolve the mind. Once the mind loses itself, no more thought is left after one enters the realm of consciousness.

Nevertheless, the mind has a problem. It cannot co-exist with consciousness. This fine distinction between Mind-space and Consciousness is the key to a better understanding of AI. Very little authentic literature is available on the subject. But none so vivid as the Upanishads which unravel the mystery about 'self' and its realisation. It talks about an experience beyond human thought.

In Western philosophy, consciousness and matter are different from Indian Upanishadic thoughts. Samkhya Yoga, one of the six Indian philosophies, explains the distinction between matter and consciousness. Here, the mind may be considered as matter and consciousness as self. Consciousness cannot be understood through the mind because it can only be experienced. Mind is an ego. Once the ego dissolves itself what is left is just conscious space. It is through this that AI is developed.

So it can be said that the mind is the matter from which AI is developed. AI is nothing but superimposing a developed mind on the mind itself. At best mind can be its own master. It cannot transcend and enter the realm of consciousness for fear of dissolving itself.

Vedanta, the last of the six philosophies, extensively discusses the mind or Manas and Buddhi, intellect. That is about the farthest the mind can expand. The realm of spirituality or consciousness begins after the boundaries of the mind have been crossed. When the mind transcends itself, there is no more ego left.

The new realm is pure consciousness and free of mind and, therefore, not accessible to it. Consciousness is that zone beyond the reach and accessibility of any mind-related activity. The mind, when dissolved, is just consciousness or infinite space. Consciousness is neither mind nor the body. The mind thrives on

thoughts. Science needs to unravel the bridge or connectivity that joins mind and consciousness. This unravelling might provide a clue to the mystery that has been eluding science.

9.8 Silver Lining

All is not lost. There is hope it. Atleast so it appears. As per Samkhya philosophy, the mind is matter and not part of pure consciousness. They are like light and darkness. Darkness is an absence of light. One cannot search for darkness with a torch. Darkness disappears the moment light enters. So also, the mind vanishes as soon as it transcends the thought boundaries. It is beyond the grasp of science. All creations are born out of nature and are insentient. Therefore, AI being a mental activity, cannot penetrate consciousness. It will always be beyond the grasp of AI. Societies less dependent on technology are likely to retain their freedom of thought and remain happy.

So those who are aware of pure consciousness are beyond the influence of mind-related activity. AI being a mental activity, is unlikely to affect them. To them, it is an artificial imposition. Those who practice meditation regularly and develop an awareness will possess a steady mind and are more likely to survive the onslaught of AI. Such societies are more likely to lead harmonious lives. A steady mind also implies control over one's sensory organs. India, an ancient land where these philosophies originated, can become the vanguard to lead the challenge of countering the risks of AI.

A deep understanding of Samkhya can act as a bulwark against possible misuse of AI. However, Western rational and scientific societies view oriental thought as unscientific and superstitious. They reject the theories as these are not supported by scientific evidence. The Scientific community demands proof within the scientific framework limited by mind and matter.

Of late western science has been doing extensive research in the field of consciousness. Some breakthroughs have been reported.

9.9 The Quantum Theory

Vedic Sanskrit means the intellectual faculty and the power to "form and retain concepts, reason, discern, judge, comprehend, understand". The central concept behind the mind-body-spirit connection is that a human being is more than just his thought. We are also our bodies, emotions, and spirituality … all these things combine to give us identity, determine our state, and make us who we are.

Indeed, there is a reality that the self is not the physical body. With age, the body shrinks and gradually loses its strength. The body becomes weak and decays, but the consciousness is eternal. It is not subject to destruction.

The inner reality is the ethereal form that corresponds to the body. This inner reality is the conscious reality or the intelligence that penetrates the inner layers and unfolds the truth.

What, then, is that power that penetrates the realities of existence that is not to be found in other living entities? It is the inner reality that perceives objects unaffected by matter. The light or spirit empowers the sensory organs to perceive things.

AI, too is one such invention created by man. It is a superimposition of his intelligence on machines. The mind, a complex component of the body-mind-soul complex, can be analysed using algorithms. Since emotions are part of the mind, even this can be transferred into algorithms and analytically analysed. Beyond that, all mind-related activities will cease to function.

The world of consciousness is too vast and outside the reach of human intelligence. None of the scientific rules or formulae can be applied there. So AI stops at the door of consciousness. The penetration of the mind through consciousness becomes nonexistent.

It is this possibility that gives hope to humanity for survival. A society which is deeply aware and conscious can keep the influence of the invasion of AI at bay through intense and rigorous spiritual practices, like meditation, to control the mind. Of course, many of life's pleasures may have to be sacrificed without AI. Comforts and easy life will have to be curtailed and even compromised if necessary. Tribals in forests and mountains connect with nature and lead contented lives.

In developed nations, having gotten addicted to an easy life, societies prefer to be under an AI-controlled world order rather than cherish their free will. Time alone will decide how the future of humanity will evolve.

Countering AI by studying and understanding the human mind through self-awareness and spiritual practices could be one possible way to prevent humanity from the onslaught of AI.

9.10 Conclusion

In conclusion, AI, which today appears to be a panacea for all problems, is a double-edged weapon that could also spell doom to human society. Undoubtedly, AI will reduce manual labour and cut delays in the initial stages, thereby saving time and improving man's quality of life. However, in the long run, AI could gradually snatch away his freedom of thinking and reduce him to a mere robot. Only through self-awareness can man save himself from the clutches of such advanced scientific development. AI could also fuel fear, insecurity and uncertainties, which can be overcome through greater self-awareness. Self-realisation through mind control could be a possible solution to check the proliferation of AI before it spirals out of control.. Communities living in far-flung remote places untouched by the influence of AI are likely to retain free thought. Most societies practising minimalism are likely to survive the risks of the unregulated spread of AI. Human societies have this innate survival instinct. As AI spreads its dragnet, minimalistic societies, too, hopefully, will mushroom. That instinct could be a new dawn for humanity.

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PART 5

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Section 10

RUSSIA – UKRAINE CRISIS AND LESSONS FOR INDIA

Lt Gen Dushyant Singh

10.1 Introduction

Russia's Foreign Minister, Sergey Lavrov, had said, "Ukraine has the capability and the technology to manufacture a nuclear weapon… The mission is clear: to disarm Ukraine and not deploy and manufacture any weapons that threaten Russia's security (Child, Gadzo, Najjar, & Marsi, 2022)(. He further added, "President Putin has repeatedly expressed our position, which our delegation conveyed in the talks with Ukraine in Belarus: Crimea is part of Russia, recognising the Luhansk and Donetsk Peoples Republics within the borders of the regions of Luhansk and Donetsk; the eradication of Nazism as was the case with Nazi Germany." (Child, Gadzo, Najjar, & Marsi, 2022) The Preceding demand appears unacceptable from the Ukrainian perspective. West, NATO and the US consider it unjustified. Further, the erstwhile USSR East European nations baring Belarus, like Poland, Czech, Slovakia, Hungary, Romania, Moldova and Georgia, are also opposed to the Russian Federation's action in Ukraine. Russia is one of the leading trade partners of the EU. It is the EU's fifth largest trade partner despite sanctions and restrictions post the take-over of Crimea and the attack on Eastern Ukraine by Russia in 2014. Likewise, the EU is Russia's biggest trade partner 36.5% of imports and 37.9% of exports to the EU. Goods trade amounted to €174.3 billion; the EU mainly imported fuel (70.6%), mining, agricultural, raw material, chemicals, iron & steel. EU exported €79.0 billion, comprising machinery & transport equipment (44.1%), chemicals, and manufactured goods, including agriculture and raw materials. Services trade amounted to €27.7 billion exports from the EU dominated the transactions. EU is one of the largest investors in Russia, with a balance in favour of the EU (EU website, 2022)(Citation needed for the source of this data). Despite such a substantial economic capital at stake, the Russians went to War, virtually isolating themselves from the rest of the World. 141 nations voted in favour of the withdrawal of Russia from the UN. However, India and China abstained, along with 33 other nations. (Humeyra Pamuk and Jonathan Landay, 2022) The four nations that voted against the motion were Belarus, Eritrea, North Korea, and Syria. This was only the 11th emergency session of the United Nations General Assembly (UNGA) since its establishment in 1950. Surprisingly, it is the first time a permanent five-member has been directly involved in such a session. In the previous ten meetings, of which six times it has been called on situations in the Middle East (ME) and West Asia, once each over situations in Hungary in 1956, Congo in 1960, Afghanistan in 1980, and

Namibia in 1981. (United Nations General Assembly, 1981) Most of these interventions were driven by the West in the name of promoting democracy and targeting the USSR, or its successor, after the demise of the Cold War in 1990 Russia to contain the influence of totalitarian governments (Rivkin, 2015). With the current intervention directly targeting a Permanent Five member, will there be Cold War 2.0, or will the situation escalate into a World War? Is it going to peter out with a compromise agreement between Russia and Ukraine? Many big questions are making the rounds in the geopolitical expert community. The Russia- Ukraine war also has implications for India. The chapter has focussed on likely lessons for India due to the impact of the War on its economy and war preparedness since India has traditionally depended on Russian Defence Equipment to equip its defence forces. Around 70% of the Indian arsenal is of erstwhile Soviet or Russian origin. Any disruption in these logistics and maintenance systems will have a major impact (Ganguly, 2022).

10.2 Why did Russia Intervene Militarily?

The geostrategic location and expanding influence of NATO have resulted in Ukraine being the last bastion between the two. Ukraine is the second largest nation in Europe after Russia. It has the second-largest Military after Russia. It also has a huge defence industrial base. Further militarisation of Ukraine with the possible induction of Ukraine into NATO would result in a lack of a buffer between Russia and NATO. Per the Sputnik Editor in Chief, Mr. Anton Anisimov, while speaking in a Youtube interview with Strat News Global Editor Amitabh P. Revi (Mr. Anton Anismov, 2022), it is NATO which has been moving towards Russia and not the other way around. The threat to Russia would become unmanageable if the World's largest military block came in the backyard riding on the back of Europe's largest country, Ukraine. See the map in Figure 10.1 below. By its location, Ukraine is a transit corridor for Russian oil. Russia's influence may vane or lose control over its transit. Also, Ukraine becoming part of NATO would have resulted in the deployment of NATO troops and nuclear assets, a condition which is unacceptable to Russia. Moreover, it would have directly threatened its maritime bases in the Black Sea and the Sea of Azov. Some of the other important factors are also discussed below.

President Vladimir Putin and a large cross-section of Russians feel that historical injustice has been done to Russia with regard to Ukraine. Putin considers Ukraine an inseparable part of Russia. In his 24 Feb. speech, he said, "Since time immemorial, the people living in the south- West of what has historically been Russian land have called themselves Russians…Ukraine was entirely created by Russia or, to be more precise, by Bolshevik Communist Russia." and several nearby nations to create a distinct and a historical republic called Ukraine." (DNYUZ, 2022) He blames Lenin, Stalin, and Khrushchev for having carved the state of Ukraine and other Soviet Republics to garner the support of the most zealous nationalist across the Soviet Union. However, in reality, this is not so. (Beauchamp, 2022) These areas have a longstanding ethnonational identity distinct from Russia. However, Putin did not subscribe to this view and opted to correct this injustice by launching a special military operation and reversing the Bolshevik leaders' mistake. (DNYUZ, 2022)



Figure 10.1: Interse Position of Ukraine in Europe vis a vis Russia and Western Europe

10.3 Continuous Eastward Expansion by NATO.

The second reason which appears to be more justified is the steady expansion of NATO eastwards, even without any threat from Russia after 1990. Many claims that a verbal agreement had been reached between Mikhail Gorbachev and NATO at the time of reunification of Germany that NATO would not expand eastwards to address the security concerns of both sides. Mikhail Gorbachev had initially mentioned such a verbal agreement, but later, he retracted his statement. While the Russian leaders allude to such a verbal assurance, the Western leaders, including Germans, deny such an assurance about limiting NATO expansion eastwards.

Further, Western leaders have stated that only reunification of the two Germanies was discussed after the fall of the Berlin Wall. (Eckel, 2021) The fact is that NATO bombed Serbia in 1999 to stop what the organisation called a "campaign of terror" against ethnic Albanians in Kosovo. This ethnic cleansing was carried out by the then Yugoslav Military and irregular Serb para-military groups to prevent a repeat of violence during the previous wars in Bosnia and Croatia. Yugoslavia had then split into six countries. In this process, the last to part ways from Serbia (the inheritor of Yugoslavia) was Kosovo following the 1999 bombing of Belgrade by NATO. Putin considers this forced liberation of Kosovo as justification for liberating the Russian-majority region of Donbas in Ukraine as justified. (McGynn, 2022) If this logic

were to be extended further, China would be justified in assimilating Taiwan. But the West has a logic for its actions in Kosovo, "It argues that Kosovo was a unique case and should not be seen as setting a precedent for other independent-minded or breakaway regions around the world." (Norris, 2008) Preceding discussions substantiate that major military power countries can get away with violating international rules, and International Rules are made for entities that cannot retaliate. The US or NATO kept expanding eastwards, and from 15 countries in the 90s, it reached 30 countries. It has engulfed almost all the erstwhile east European regions of the Soviet Union other than Russia; see the map below in figure 1. (BBC, 2022). Russia sees this as a threat to its security since including these countries implies deploying NATO (read US) troops and nuclear arsenals closer to Russian territory.

The prolonged conflict in Donbas and Resultant Sanctions. The next important reason for Putin to attack Ukraine appears to be the never-ending low-intensity conflict with Ukraine over the Donbas since 2014. The situation was slowly turning into a stalemate with no resolution in sight. This resulted in Russia coming under economic sanctions. Before the current sanctions, the EU, Canada and the US had imposed sanctions on Russia over its annexation of Crimea and intervention in East Ukraine from 2014 onwards. These sanctions were restricted to 183 individuals and 53 entities. Prolonged sanctions, unresolved problems in the Donbas and the renewed effort by Ukraine under its current President Zelensky possibly was a major cause for the current War. The final straw in this situation was the genocide of over 14000 people of the Donbas Russian population, per Russian sources., Anton Anisimov, the Editor in Chief of Sputnik, a Russian Daily, has stated with conviction, in a video interview with Amitabh P. Revi of Strat News Global, that Russia has proof and evidence of Neo Nazi Fighters such as the Azov Battalions, which Ukraine has systematically used. (Team Stratnews, 2022) This evidence probably has been the reason behind Putin's aim of the denazification of Ukraine through the Special Operations launched by him on 24 Feb. 2022.

Reports of Ukrainian Efforts to Make Nuclear weapon or a dirty bomb (mint / ANI / sputnik, 2022) **and Bio Agents for Military Purposes**. Although not confirmed, given the statements from Russia, it appears they were apprehensive of such a threat. Recently Russia claimed that they have evidence of many US-funded Bio Labs functioning in Ukraine. (Op India staff, 2022) As far as the Bio-Agent threat is concerned, the WHO statement asking Ukraine to destroy all harmful agents lest they get released due to accidental war activities appears to justify this claim. (TASS, 2022) Also, the inadvertent admission in the Senate Foreign Relations Committee by its Undersecretary for State for Political Affairs probably justifies these claims.

However, the US later denied all these claims and attributed them to a disinformation campaign by the Russians. Whatever the truth, it is a common tool for superpowers to go to War with a smaller country. The second gulf war by the US on Iraq is a recent example of such an excuse. Belligerence by the affected parties involved in the conflict appears to be the reason for the ongoing War. Not only is Ukraine suffering colossal damages and destruction, but Russia is also losing soldiers and Warfighting assets. Along with these two nations, Europe and the rest of the World are facing severe energy and food crises, leading to many of them being on the verge of major economic crises.

Strategic Miscalculations may be other reasons why the two sides went to War and are refusing to back off. Firstly, Zelensky probably overestimated the support of the West and, in particular, the US. This is evident from Zelensky's statements from time to time demanding greater support and declaring

Ukraine as a 'no-fly zone. (Nardelli, Wickham, & Jacobs, 2022) Neither NATO made Ukraine its member nor has it militarily intervened in the War. It has drawn attention to article 5 of NATO as a reason for its non-intervention, which states that NATO will intervene only if the country under attack is a NATO member. The possible possibility of the conflict escalating into a World War or a nuclear war may be the reason. For this reason, NATO has now turned down the request of Zelensky to declare Ukraine a No Fly Zone." The second possible reason could be the underestimation of Ukraine's War waging capability.

10.4 So Why has the War Continued for So Long

The War, which Putin still refers to as special military operations, began on 24 Feb. It remains inconclusive, contrary to the perception of many experts that it will be wrapped up in a few days. The progress made by the Russian Forces by the end of the 20th day is shown in figure 3 below, per BBC reports. The important cities still elude capture while the Russian forces control a large chunk of Ukrainian territory. The Russians are targeting the Military and defence infrastructure such as military bases, ammunition dumps, airports and oil dumps. However, Ukraine has continued to resist Russia leading to major humanitarian crises as over 3 million Ukrainians are now refugees. Their numbers are only increasing, with collateral damage in the cities and the death of civilians, especially women and children.

While there are many reasons for prolonging the War, the important ones are briefly discussed here:

1. Zelensky has mobilised his war potential well. He has allowed the Russian forces to come in and then hit Russian Forces extended lines of communication and supply chain.
2. The information war is favouring Zelensky. As a result, Putin has had to relent and declare a ceasefire to allow people to leave Ukraine, especially international students. This reprieve gave the Ukrainians time to regroup and organise their defences.
3. The Ukrainians have resorted to Guerrilla Warfare and steadily hitting the Armoured Fighting Vehicles, helicopters and air crafts with their man-portable missiles and air defence systems.
4. The Russians did not cater or plan for the difficult terrain during this time of the year. The areas off the roads are marshy and unfit for use by vehicles; hence its convoys are road-bound and easy targets of TB drones supplied by Turkey. These same drones had helped Azerbaijan win the War against stronger Armenian Armed Forces in the recent past.
5. A steady supply of weapons and other Warfighting equipment from the West has extended the war stamina of Ukraine.
6. Internal opposition to the Ukrainian War has Putin worried.

Putin is dealing with protests by people in Russia who are opposed to the War. As per Stastista.com, approximately 13836 people have been detained for anti-war protests. (Armstrong, 2022)

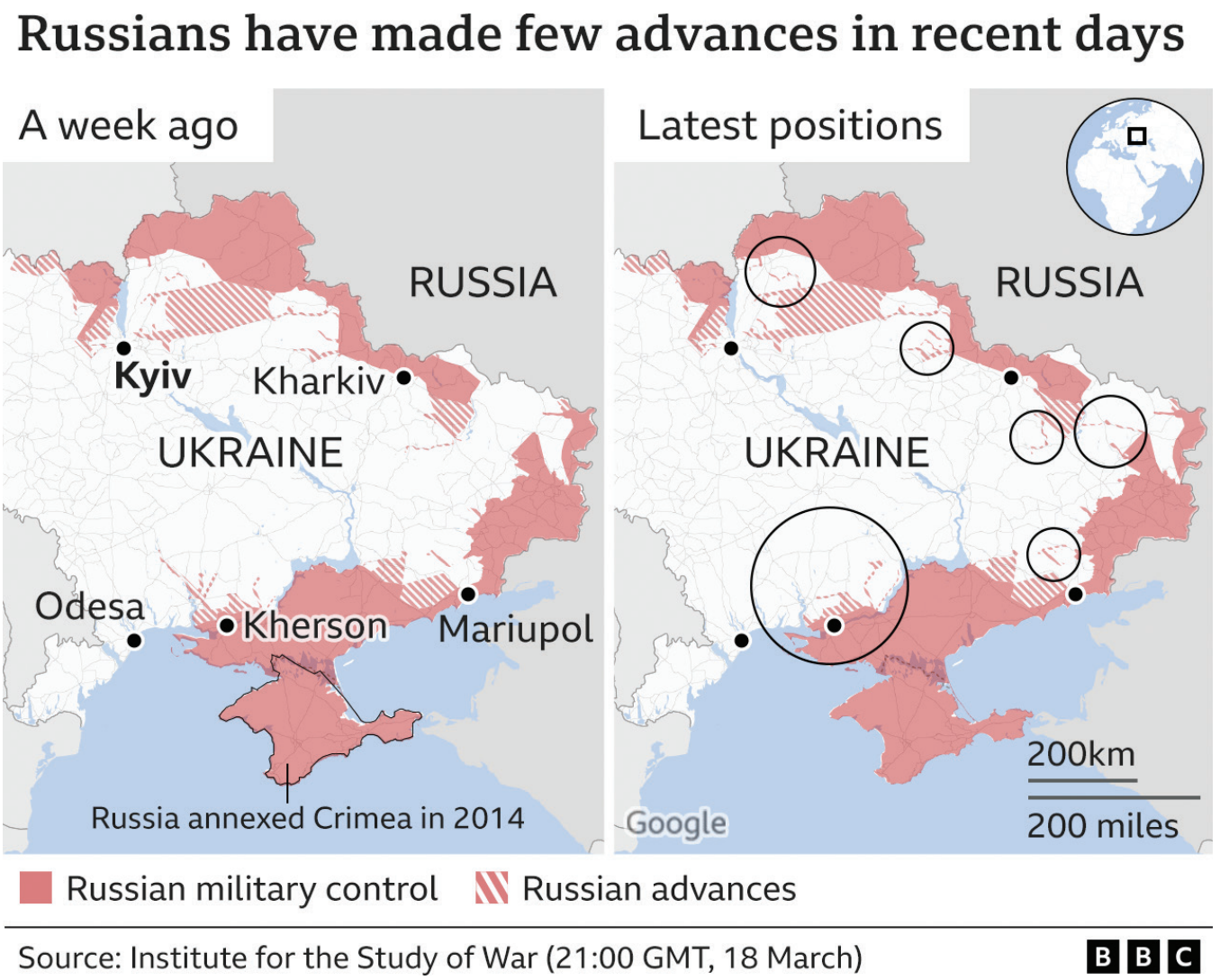


Figure 10.2: Progress of Battle Courtesy BBC

10.5 Deliberate Calibration by Putin,

While the devastation in Ukraine is unprecedented and the refugee problem is increasing by the day, Putin firstly does not want to be seen as a devil of humanity. Hence, he has kept the evacuation routes open by announcing ceasefires at regular intervals. Secondly, he has made a deliberate effort to minimise civilian casualties. This is borne by the fact that casualties caused by the US forces in the Gulf wars and Afghanistan are far more than those in Ukraine. For example, in Gulf War 2 Iraq suffered a total of 1,87,671 civilian deaths, with death in 2003 being 12133 and maximum deaths being 29517 and 26078 in the years 2006 and 2007, respectively. (Statista, 2022). The Ukrainian figures pail in front of these deaths. As of 07 Mar. 2022, as per the UN, it had recorded 406 deaths and 801 injuries. (Thomas, 2022). While there are informal reports of higher casualties due to the fog of War, it would take some time to get the exact numbers. However, it suffices to say that Putin's calibration of the War is evident from a humanitarian perspective. The West seems to be playing the Information War well to demonise Putin.

However, one must not forget that Ukraine was an integral part of Russia till 1990 in its previous Avatar as the USSR.

Additionally, Putin has stated that he does not intend to occupy Ukraine. He will withdraw his forces as soon as Ukraine agrees to his demands. These are; first, Ukraine should never join NATO; second, it should formally recognise Crimea as part of Russia, thirdly it must recognise Donetsk and Luhansk as independent sovereign countries; and finally, it must demilitarise. It must denounce Neo Nazis believed to be present in Ukraine and are participating in the War on behalf of the Ukrainians. (Simpson, 2022) They are also referred to as Azov Fighters. (Goncharenko, 2022). Overtly the way Russia negotiates peace through Erdogan, their intentions appear to be working towards peace, but actions on the ground contradict the peace efforts.

10.6 Why hasn't the Sanctions Forced Moscow to abort.

This is a logical question, but it must be understood that economic sanctions do not significantly impact immediate wars. Any country which goes to War caters for its war requirements. Moreover, if one compares the relative strength of the two defence forces, Ukraine is a minnow in front of Russia. According to Global Fire Power, Russia is the second most militarily powerful country, and Ukraine is ranked 22nd out of 140 (Tiwari, 2022) countries. Their impact is felt in the long term. Moreover, sanctions have a way of hurting both sides. Following the War in 2022, the scale of the sanctions imposed on Russia by the EU, UK, US and other allies are unprecedented. The sanctions have now been coordinated, targeting Russia's financial sector, strategic sectors such as the defence and aerospace, Putin and individuals close to his regime.

1) Ban by the US on oil refining technologies barred Russian banks from the SWIFT international payment system.
2) Restrictions have been imposed on semiconductors, telecommunication, encryption security, lasers, sensors, navigation, avionics and maritime technologies.
3) it has also targeted military end–users, including the Russian defence ministry.
4) Even 24 Belarusian individuals and entities, including two state-owned banks, nine defence firms, and seven regime–connected officials and elites.
5) 27 countries of the EU have also imposed a ban on specific oil refining technology.
6) It closed its air space to Russian aircraft, including the air crafts of Russian oligarchs. Limited sanctions were imposed on Belarus on mineral fuels to tobacco, wood, cement, iron and steel.
7) UK imposed its largest-ever package of sanctions against Russia targeting banks, members of Putin's closest circle, and wealthy Russians who enjoy high-rolling London lifestyles.
8) EU also froze the assets of Russian President Vladimir Putin and his Foreign Minister Sergey Lavrov. (Al Jazeera Staff, 2022) Similar sanctions were imposed by Switzerland, Canada, Japan, Czech, Taiwan and South Korea.

Russia – Ukraine's economic scenario has also suffered due to the War. 2019 trade data tells the story: Russia exported $407 bn in products, and Ukraine $ 49.5 bn. Ukraine's top exporting countries are Russia (9.5%), China (8%), and Germany 6.2%. Other important exporting countries are Poland, Italy,

Turkey, Egypt, India(3.9%), Netherlands and Hungary. On the other hand, Russia's main exporting countries are: China 14.3%, Netherlands 10.3%, Belarus 5%, Germany 4.6%, and others being Italy, Turkey, South Korea, the US (3.5%), Kazakhstan and UK. India figures low down. (Al Jazeera Staff, 2022)

As can be seen, the ban on Russia will impact its economic health due to the high quantum of export of petroleum products. However, the EU will have to find alternate energy sources simultaneously, thus driving up the oil and petroleum cost. This will lead to inflation and a rise in prices. The West will feel the pain in equal measure, especially the EU and energy-hungry countries like China and India. The severity of the pain in the 2018 sanctions on Russia resulted in the US and the EU not closing the taps on the gas trade with Russia.

Similarly, the titanium and palladium trade is unlikely to suffer, given that Russia is the World's largest producer of these items, which are essential for the computer industry. The World is likely to feel the heat of the absence of these items. So economic sanctions will not worry the Russians and the Rest of the World, except for the USA, as its dependence on Russian oil is only around 5%, for which it is already making efforts to tap Venezuela. (Parraga & Spetalnick, 2022).

10.7 Possible World Order After the War

Multipolar World may be the likely shape of global order.

A multipolar World may be the likely shape of the global order. However, who will be at which pole needs more time to crystallise? Following the current crisis, the World is divided into three blocks. The first is with the West, the majority being led by the US. The second is the neutrals torn between the Russians and the NATO countries due to their peculiar national interests. These countries mainly have major economic and military interests with NATO and Russia. India, and China. And the third block comprises Russia's close supporters, namely Belarus, North Korea, Eritrea and Syria. All these are relatively insignificant countries in the world order. However, more interesting is that Turkey, among the NATO countries, and Israel are actively working to bring peace to the region. China and India have also attempted to usher in peace. Both failed due to the defiant stand of either side not to budge from their stance. In the bargain, the common public suffers, including a host of foreign nationals and students paying the price. India had the largest number of students, approximately 20000 to be precise. (Zee Media, 2022). The emergence of a multipolar world seems evident for the following reasons; the US is a declining power with back-to-back withdrawals from Iraq, Syria and Afghanistan; therefore, it probably does not want to engage in another war and invite further criticism from the people of America.

While the Russians may be slightly behind the US in most conventional weapon platforms, they enjoy superiority in Armoured Fighting Vehicles (AFVs) and Nuclear Stockpiles. Further, the involvement of the USA may lead to a World War and possibly a nuclear confrontation, with both sides having an almost equal number of nuclear stockpiles. As per Arms Control Association (ACA), the US has 5,550, UK - 225, France – 290 and Israel 90, taking the total weapons held by the West to 6155. In comparison, Russia alone has 6257. See figure 4 below.

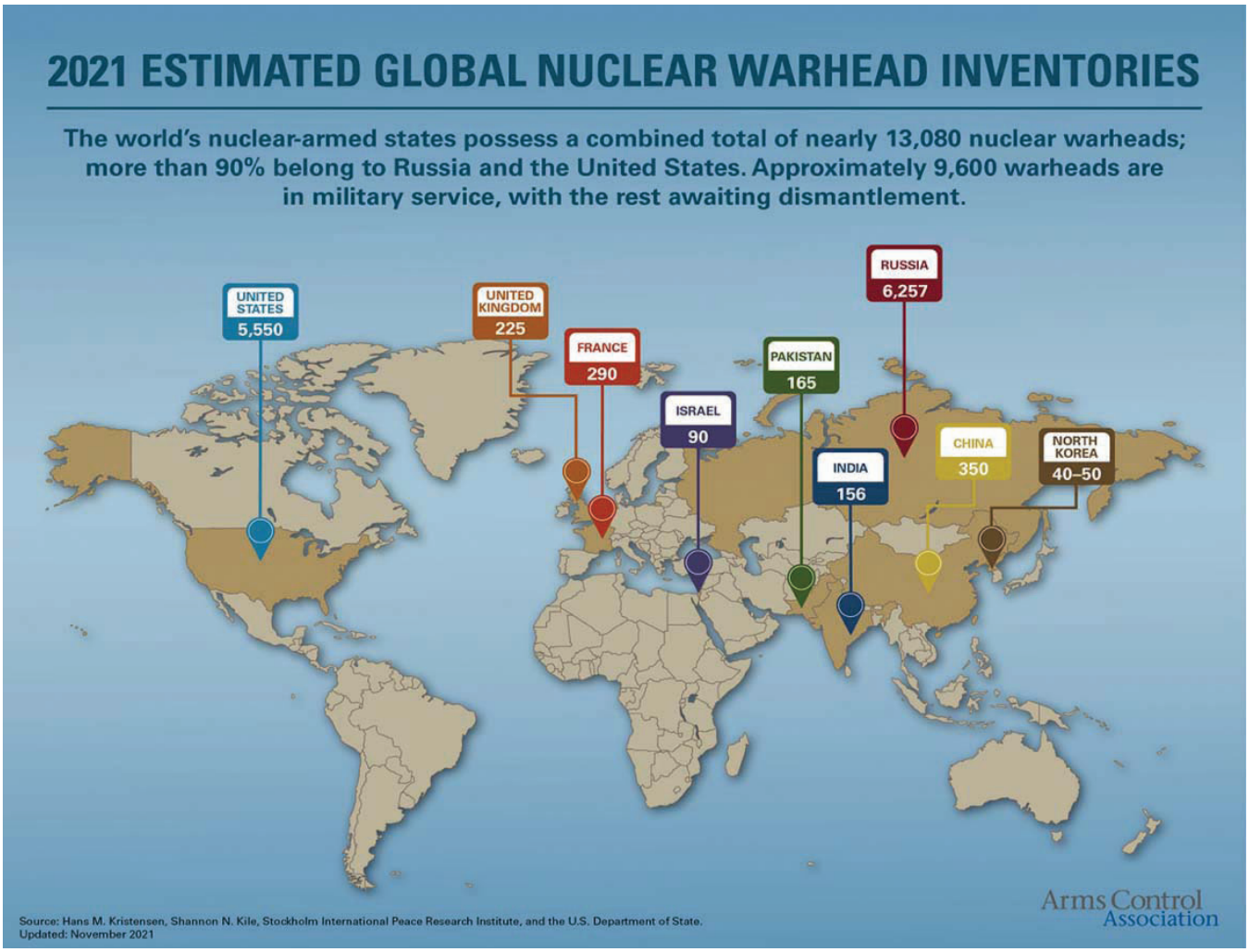


Figure 10.3: *Global Nuclear Proliferation as of January 2022*

Similarly, Russia holds an edge in Artillery and Mobile Rocket projectors. Russia holds 6574 Self Propelled Artillery while the US only 1498. Similarly, Russia holds 7571 Towed Artillery and the US only 1339. In mobile Rocket Projectors, the Russians hold 3391 and the US just 1366. (GFP, 2022). Escalation of the War is not in the interest of any side but from this War US, Russia, and Ukraine will all lose global standing. This would indirectly strengthen the Chinese and is evident from the attitude of XI Jinping during the 2-hour telephone conversation between Xi Jinping and Joe Biden. As per 'The Guardian', Joe Biden warned China of consequences if China provided material support to Russia as it conducts brutal attacks against Ukrainian cities and civilians. Xi only expressed the wish that the War was not happening. He showed no sign of the Chinese leader's intentions toward Moscow. Beijing's report avoided the words War or invasion. Xi, as per the report, was referring to a favourite aphorism. "Let he who tied the bell on the tiger's neck take it off" (Borger, 2022)(Citation needed), a possible reference to China's position that the US and NATO are ultimately to blame for Vladimir Putin's actions. Similarly, he expressed concern about the impact on Taiwan, which he has vowed to restore to rule from Beijing as part of his one-China policy. The polite rebuff to the US President signals the arrival of China on the Global Stage as an important pole with its deep tentacles in various countries through his economic and BRI initiatives backed by a significant hard military power. Another major change that may take place is the militarisation of Europe.

Most of the European countries barring France, have hollow defence forces. These countries have realised their helplessness in defending Europe from a possible or perceived threat from Russia. Germany has announced a rebuilding of its defence forces which her previous Chancellor had made almost defunct with severe budget cuts over the last fifteen years. This is evident from the statements of Bundeswehr Chief and its Chancellor, Olaf Scholz. Chief of Bundeswehr Lt. Gen. Alfons Mais said on 24 Feb. 2022, "And, the Bundeswehr, the army which I have the honour to command, is standing there more or less empty-handed. The options we can offer the government to support the alliance are extremely limited." (Reuters, 2022) It is almost laughable that Germany offered some helmets in the name of assistance to Ukraine, which the Mayor of Kyiv dismissed as a joke. (Reuters, 2022) This forced the German Chancellor to announce a plan to beef up the German Military, pledging 112.7 billion dollars. (DW, 2022) This realisation has set in most of the European Nations, which till now were entirely dependent on the US forces to defend their territory. For example, French President Macron had this to say on building hard power in Europe, "We cannot depend on others to defend us, whether on land, at sea, under the sea, in the air, in space or cyberspace. In this respect, our European defence must take a new step forward." (Willsher, 2022) In the future, we may also see a more independent Japan, as evident by the various statements from there. It no longer reposes confidence in the US to defend it. It may be looking to militarise itself at least to defend itself effectively against any aggression to the extent that Japan must permit the deployment of US nuclear weapons on its soil. Japan's previous premier Shinzo Abe also stated this effect. A similar shift in attitude is taking place in the views of South Korea and Australia. (Kathrin Hille, Fildes, & Davies, 2022) These changes signalled a lack of trust in the US by its Asian allies on the likely threat to their territorial integrity by China. That leaves countries of the ME, Africa and India. These most likely will wait and watch and join any of the power blocks represented by the US – Europe, China – Russia, Indo – Pacific Groupings, of which India will be most likely a part. India may also create a grouping of West Asian countries with India comprising Saudi Arabia, Israel, UAE and India. Suffice it to say that the situation is still very uncertain, and India is following the right policy of strategic autonomy in the short term. It has conveyed its approach to the US that it is in favour of immediate cessation of hostilities, ushering in peace. It was one of the first countries to give meaningful aid to Ukraine in terms of medicines, equipment, tents and other relief material as part of the first tranche, while most of the countries still give out promises and statements. (Business Today Staff, 2022) However, at the same time to meet its energy requirement, it has quadrupled its import of oil from Russia in March as compared to 2021. Russia is exporting 360000 barrels of oil per day to India. As per reports, one of the persons who are in the know of these developments in the government has stated that "India's legitimate energy transactions should not be politicised." This was even more relevant when its energy dependence was 85% through imports, and it could not meet its requirements from Venezuela and Iran, one of the cheapest sources of oil, due to US sanctions on these countries. (Laskar, 2022) The fact that India is putting its foot down also speaks of its rising say in international geopolitics. However, given its large military capability gap with China, it needs time to build it up to a reasonable level to meet the challenges from its Northern adversary. Accordingly, it needs to follow a tightrope, keeping Russia and US as its counterweight in dealing with China, at least in the short term.

The Shape of UN may also undergo a change? Suppose the War prolongs and escalates into other parts of Europe. In that case, the UN may be severely criticised for its inability to control conflicts involving veto countries and other power centres. It will demand a revamp and a more robust organisation

and balanced structure. What form it will take may still need to be clarified, but two things are most likely to occur first, a more robust security council with greater teeth and a highly empowered UN General Assembly. However, only time will tell as to which trajectory the current War is going to take.

10.8 The Lessons for India

Today's World is highly interdependent and digitally wired due to the advent of a virtual technological revolution, besides growing economic interdependency for food, energy and other goods. Therefore, the ongoing Russia- Ukraine conflict is impacting the globe, including India. The aim of analysing the Russia – Ukraine war was also to draw relevant lessons for India and its defence preparedness. While many lessons for India emerge from the ongoing conflict, some important ones are highlighted. The first and most important lesson for India is that it has to deal with its security challenges independently, implying the importance of Self Reliance (Atmanirbhar Bharat may have just come at the right time.) in all critical sectors, especially the defence to include space, cyber and information, security, health and energy. Alliances / strategic partnerships have limited use in active hostilities and must be treated as such. NATO's lukewarm response, as highlighted earlier, brings out the need for India to be prepared to fight its wars on its own. External support is unlikely to materialise except for diplomatic and symbolic gestures. Relying on possible sanctions being imposed by the friendly nations against our adversaries is unlikely to make any major difference, especially against the northern adversary, at least in the short term, as this has been proven in the case of sanctions imposed by the West on Russia.

The second lesson pertains to **Strategic Autonomy**. Given that we still rely on Russia for our 66.5% of defence needs, taking sides at this stage will severely endanger our national security. Russia's largest export of defence goes to India (23%), followed by China (18%), so it is not surprising that India and China have adopted a neutral stance on Russia. The demand for energy security has further complicated matters. India needs to diversify at a rapid pace to develop alternate sources of energy that are more environmentally friendly and reduce our dependence on crude, coal and gas, thereby reducing our need for imports.

We need to Build Regional Groupings to cater for our economic and security needs, such as the QUAD for Indo – Pacific and West Asia. There is no denying that the World will undergo a major churning, and India's position is likely to be pivotal. Hence India needs to play its cards well and take advantage smartly of the potential opportunities coming its way. For example, the statement of the UN Secretary-General calling for big countries to assist in the early resolution of the conflict needs to be taken seriously. (United Nations, 2022) Similarly, India will need to build economic partnerships with European Nations and the US to diversify its defence requirements and fast-tracking the indigenisation initiative as part of Atmanirbharta and Make in India or Make for India.

Military reforms and capability development must be expedited to create a credible deterrence against our Northern Adversaries. One of the opportunities with a high scope for success in expediting the build-up of indigenous defence capabilities may come from Ukraine and Russia. Ukraine will need tremendous help to rebuild its nation. In such circumstances, India should invite their firms to set up shop in India either in collaboration with Indian Defence Firms or under the "Make for India" concept.

Similarly, due to the unprecedented sanctions, Russia will need the money to boost its economy. India should insist that Russia set up joint ventures in high-tech military capabilities, including cyber, electronic warfare, robotics, AI and the space sector. However, if Russian cooperation in this field starts dropping, it should quickly seek Western assistance. Finally, organisational and functional reforms are underway, such creation of regional and functional commands and reorientation towards our Northern Borders.

10.9 Conclusion

'War is the continuation of policies by other means; this famous aphorism of Clausewitz holds for the ongoing Russia – Ukraine conflict. Hidden within is the temporary nature of any war. It will be in the interest of most countries in the World to resolve it at the earliest. With the help of countries such as Israel and France, India must take the initiative and count itself in the global order as a responsible nation that believes in the rule-based world order work towards convincing Russia and Ukraine to end the War. India also needs, through such initiatives, to firmly stake its claim for a permanent seat in the UNSC. There is a need to work towards a more effective UN with greater teeth and empowerment to resolve international crises. While the World is likely to witness an overhaul of the global order, it is also likely to see a rise in militarisation. Hence, the defence industries of the USA, France, Russia and China are likely to benefit from them. It is for India to quickly resolve its problems related to Atmanirbharta in defence and reduce its import dependence rapidly. The big message emanating loud and clear from the conflict is that a country cannot outsource its security to another country or a power block. It has to fight its wars, and for that, self-reliance in military capability is a necessary condition. Earlier India achieves this, the better it will be for it. While it is understood that 100% self-reliance is neither possible nor desirable, we must make a concerted effort in critical technologies. Finally, the Ukrainian War has thrown up several challenges and opportunities, countries that grab the opportunity will emerge stronger, and those who miss the boat will have to work harder to establish themselves as a significant player in the global world order. The World will become increasingly polarised, tending towards a multipolar world with China, India, EU and Asian powerhouses such as Japan, Australia and South Korea playing a major role. Although an attempt has been made to visualise the global landscape after the Ukraine war, geopolitics is likely to see a churning, and what comes out of it is still anybody's guess.

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WATER SECURITY: INTERNAL AND EXTERNAL DYNAMICS OF THE FUTURE POLITICO-MILITARY CONFLICTS

Section 11

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11.1 Introduction

In contemporary security studies, including peace and conflict studies, water security-related issues are less prioritised aspects of national security as compared to other aspects like economic or military security. However, this needs to be deliberated more in the contemporary world, considering its criticality, since it has a massive impact on economic security, social security and, of course, military security. The security spectrum encompasses smaller human securities to global or existential securities. Human security, the basic security concern, generally refers to overall human health and well-being, including economic and social conditions conducive to quality of life. With a rapidly increasing world population, coupled with climate change and rapidly depleting resources, the pressure on water has increased tremendously, which has now become the most critical human security concern. Water, food, and energy are critical to the 'new security agenda'. It redefines understanding security as a basis for policy response and long-term planning.

With current trends, most countries will enter the water-stressed domain by 2050. In all likelihood, it is going to be central in international relations as well as in conflict resolution between various stakeholders. Therefore, the moot question is whether future wars would be fought for water alone. The concept of national security refers to the role of national governments in providing security for all their citizens and institutions. At a global level, a broader set of conditions of mutual safety, lack of violence, and a positive quality of life for groups of states and the international community are 'Global Security', including military and diplomatic measures. This, in a nutshell, summarises the criticality and linkage of water security in national and international interests.

Water is increasingly being used as a weapon in conflict across the globe, and its impact is manifested in poverty, pollution, migration, low women's development, children malnutrition and environmental degradation (Gleick & Iceland, 2018) *.

The **'Water Security'** and its linkage to resultant inter or intra-state conflicts, diplomatic tussles, migration of population, and environmental challenges resulting in food insecurity is the focus of this paper. Water-related conflicts could manifest in three different ways. One is where access to or control of water could be a **"trigger"** or a contributing factor in a conflict. Second, where water or water

systems could be used as "**weapons**" or "**tools**" during conflicts to apply political or military pressure, and Third, where water or water systems could become "**casualties**" of conflicts, as targets during wars or conflicts.

Conflicts over water, both within and between countries, are sharply increasing, as indicated in Table below (Gleick & Heberger, 2014).**. The causes of armed conflict may include socio-political tensions; disputes over dams, reservoirs, and other large-scale projects; and disputes concerning environmental and resource issues. About three-fifths of water flowing in all rivers are shared by two or more countries—in 263 river basins in 145 countries, two-fifths of the world's population lives. As a result, many countries are highly dependent on water resources that originate from outside their national territory. For example, 34% of water resources in India and 76% of water resources in Pakistan originate from outside these countries. As another example, the Nile River Basin is shared by 11 countries mutually dependent on their water resources (Levy & Sidel, 2011).

Time Period in Which Conflict Began	No. Conflicts	Average No./Year	No. Violent Conflicts and Conflicts in the Context of Violence
1900–1959	22	0.37	At least 19
1960–1989	38	1.27	At least 23
1990–2007	**83**	**4.61**	**At least 61**

India has issues to be addressed on all fronts in this regard, at the national and international levels. In order to understand the full dynamics of water security, we need to understand the global dynamics for its impact on mutual relations, environmental factors which are equally applicable to all countries, internal dynamics for equitable distribution, and mitigation and adaptation strategies to manage this critical resource.

11.2 What is Water Security and How is it Military Concern?

Water security is all about fulfilling the clean water needs of every living being. It is essential for the very existence of our environment. The demand for water is ever-increasing for consumption, agriculture, and energy generation. Hence, every nation would want to control it as much as possible and need be to ensure it meets its ambitions and needs forcefully. This conflicting requirement would finally lead to military confrontations directly or indirectly. Also, during the conflict, like was seen during WWII, dams, reservoirs, and other water systems could be targeted to bring the enemy to negotiation table.

In the 21st century, water use has been growing at more than twice the rate of the population increase. In developing countries, water withdrawals are predicted to increase by 50 per cent by 2025. Both quantity and quality factors of accessible water are essential for water security. The most common threat to Water Security is water scarcity due to low rainfall, climate change, high population density, and overallocation of a water source. According to experts, about 27% of the world's population lived in areas affected by water scarcity in the mid-2010s. In more conservative estimates, this number is expected to increase to 42% by 2050 (IDSA Task Force Member, 2010).

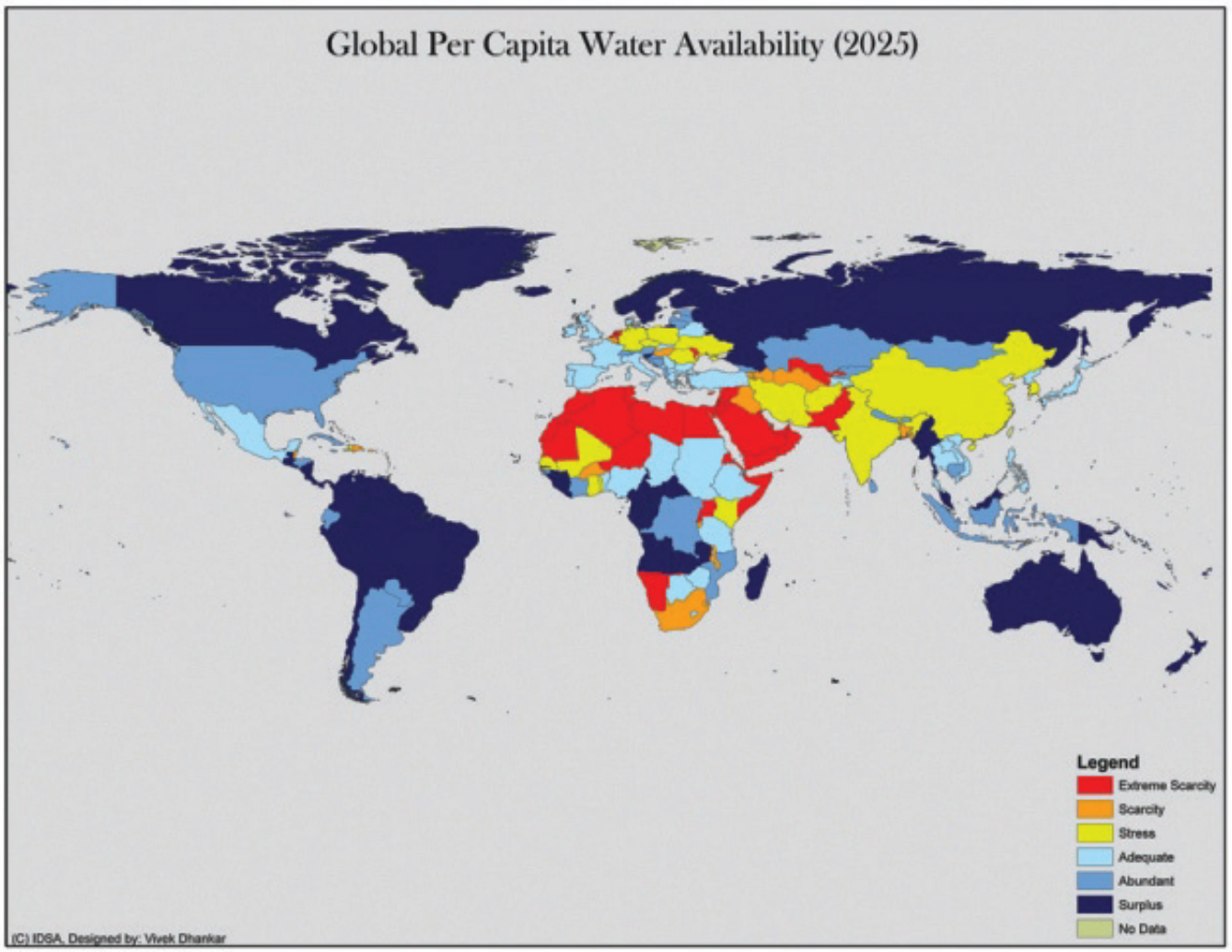


Figure 11.1: Estimated Global Water Scarcity (IDSA Task Force Member, 2010)

Water scarcity is of two types: **Physical and Economic Water Scarcity**. 'Physical Water Scarcity' is where there is not enough water to meet all demands, like in the case of arid areas in Central and West Asia and North Africa. On the other hand, 'Economic Water Scarcity' is caused by a lack of investment in infrastructure or technology in the water sector.

Another category of threats to water security is **'Environmental Threats'**. These include contaminates such as biohazards (biological substances that can harm humans), climate change and natural disasters. Contaminants can enter a water source naturally through flooding. We have seen this during many cyclones globally and in India. These natural disasters, such as hurricanes, earthquakes, and wildfires, can damage man-made structures such as dams and fill waterways with debris. This damage also results in the contamination of groundwater. The recent phenomenon of wildfires across the globe is a serious concern as it may lead to the drying up of natural water sources.

Concerns over the current state of water resources worldwide have led the United Nations, the World Economic Forum, the European Union and other governmental and nongovernmental organisations to highlight the importance of water-related threats to Global Security and the need to develop strategies to manage water resources more effectively. The water security scenario is even grimmer, coupled with

emerging challenges like rapid population growth, widespread environmental degradation, the lifestyle of the new middle class, and human-induced climate change. Therefore, the solutions need to be all-inclusive with diplomatic, economic, and management approaches, as well as the application of new technologies for mitigating and adapting to this challenge to avoid conflicts.

11.3 Global Dynamics

The impact on various ongoing conflicts needs to be analysed to appreciate the criticality of water as an essential element of international relations. Considering that water is not merely a necessity for life and a matter of fundamental human rights but also the driving force of the world's economies, there is so much at stake with the control of water. Controlling water and sharing water is constant irritation amongst many neighbouring countries. **More than 50 countries on five continents are at risk of conflict over water**. Some important ones are discussed here to understand the criticality better.

The most significant impact of water scarcity is in the Middle East and North Africa (MENA) region, which is the driest in the world. Climate change, an exploding population, and increased urbanisation is making the region more and more arid. Up to 85% of water in MENA is used for agriculture, and with water such a scarce commodity, some countries are failing to meet domestic food demands. Egypt, for example, imports more than half its food, and Yemen's cultivation of qat and the large amounts of water necessary for its irrigation are on their way to making Sana the world's first capital city to go dry*. (Heffez, 2013)

Hydro-politics is an explosive issue in the Middle East. The Euphrates-Tigris Basin is an unresolved source of friction between upstream Turkey and its downstream neighbours, Iraq and Syria. Although smaller, the Jordan River Basin, shared between Israel, Jordan, Syria, Lebanon, and the Palestinian Territories, has also become a highly politicised issue, with the future water supply of Jordan and Palestine being handcuffed to that of Israel. 'Water wars,' seldom reported in the news, have been a central feature of the conflicts since their beginnings. In fact, in 1919, the Zionist delegation at the League of Nations Peace Conference in Paris said that the Golan Heights, Jordan Valley, and Lebanon's river Litani were "essential for the necessary economic foundation of the country" they sought to establish. **The British mandate did not give them these territories. However, the 1967 Six-Day War gave Israel part of what it wanted - exclusive control over the West Bank Mountain aquifer and the Sea of Galilee**, which together provide it with 60% of its freshwater supply today.

Water is one of the biggest irritants in Israel-Palestinian relations. Palestinians are of the opinion that while Israeli settlements, get better allocation of water and facilities while the Palestinian side, in stark contrast, is failing to meet even its basic domestic water needs. They opine that every major US-brokered Israeli-Palestinian negotiation has failed to properly address the water issue, instead side-lining it to 'final status talks' that are yet to materialise. It seems highly unlikely that Israel would ever risk any compromise in the name of peace in this regard, and so, "**no peace without water, no water without peace"** would remain the status (Zayed, 2011)**.

Another flash point is a new mega-dam built by Ethiopia on the Nile River, threatening to spark a war over water and shift political influence in northeastern Africa. Ethiopia sees the dam as the key to its

economic future, but its neighbour, Egypt, fears it could spell doom for its water supply. The Nile supplies nearly 85 per cent of water in Egypt. The $4 bn Grand Ethiopian Renaissance Dam would tower over 500 feet, and when completed, it will be the largest dam in Africa and generate up to 6,450 MW of energy.

Egypt has had control politically of the Nile for millennia, and suddenly Ethiopia has come along. Ethiopians feel that it is not about control of the flow but providing opportunities for them to develop themselves through energy development.

This conflict escalated in 2020. Both countries faced the threat of water shortage. Tensions are made worse due to fundamental differences in beliefs over water rights. Egypt claims its rights to the Nile water based on historical practice. In contrast, Ethiopia claims its rights to water based on geography, where 85% of its water comes from highland sources within its territory. The mega-dam could both politically and economically transform the Horn of Africa. For some countries downstream, like Sudan, it will provide cheaper electricity and help regulate the river's water levels, which are prone to yearly flooding. However, Sudan's support could disrupt a 1959 treaty with Egypt that allocates the Nile's waters between the two countries. Losing Sudan, the only country with which it has a water allocation agreement could be precarious for Egypt (Palios, 2019) *.

The Amu Daria River, shared by Uzbekistan, Turkmenistan, Tajikistan and Afghanistan, has almost completely dried out in Central Asia. So much so that it has ceased to reach the Aral Sea/Lake, which is evaporating at an alarming pace because Turkmenistan retains much of the water before it flows into Uzbekistan. The Euphrates-Tigris Basin is shared between Turkey, Syria and Iraq, with Iran comprising parts of the Tigris basin. Since the 1960s, unilateral irrigation plans altering the flows of the rivers, coupled with political tensions between the countries, have strained relations in the basin (Detges, Pohl, & Schaller, 2017).**.



Another potential water conflict is between Afghanistan and Iran. A 1,300-km-long river that has its source in the Hindu Kush mountains to the west of Kabul, the Helmand River winds in a south-westerly direction and empties its waters in Lake Hamoun in Iran's Sistan-Baluchestan province. Construction of the Kamal Khan Dam on this river began in 1996. It was put on hold due to the fighting in Afghanistan. Work on the project was resumed when Ashraf Ghani became Afghanistan's president in 2014 and was inaugurated in March 2021. Sistan-Baluchestan, a Sunni-dominated province in predominantly Shia Iran, is a restive region.

Tehran worries that losing livelihood and other related issues will fuel discontent and militancy. Iran has vehemently opposed Afghanistan's damming of its transboundary rivers. It has accused Kabul of denying its water rights as a lower riparian country*. (Ramachandran, 2022).

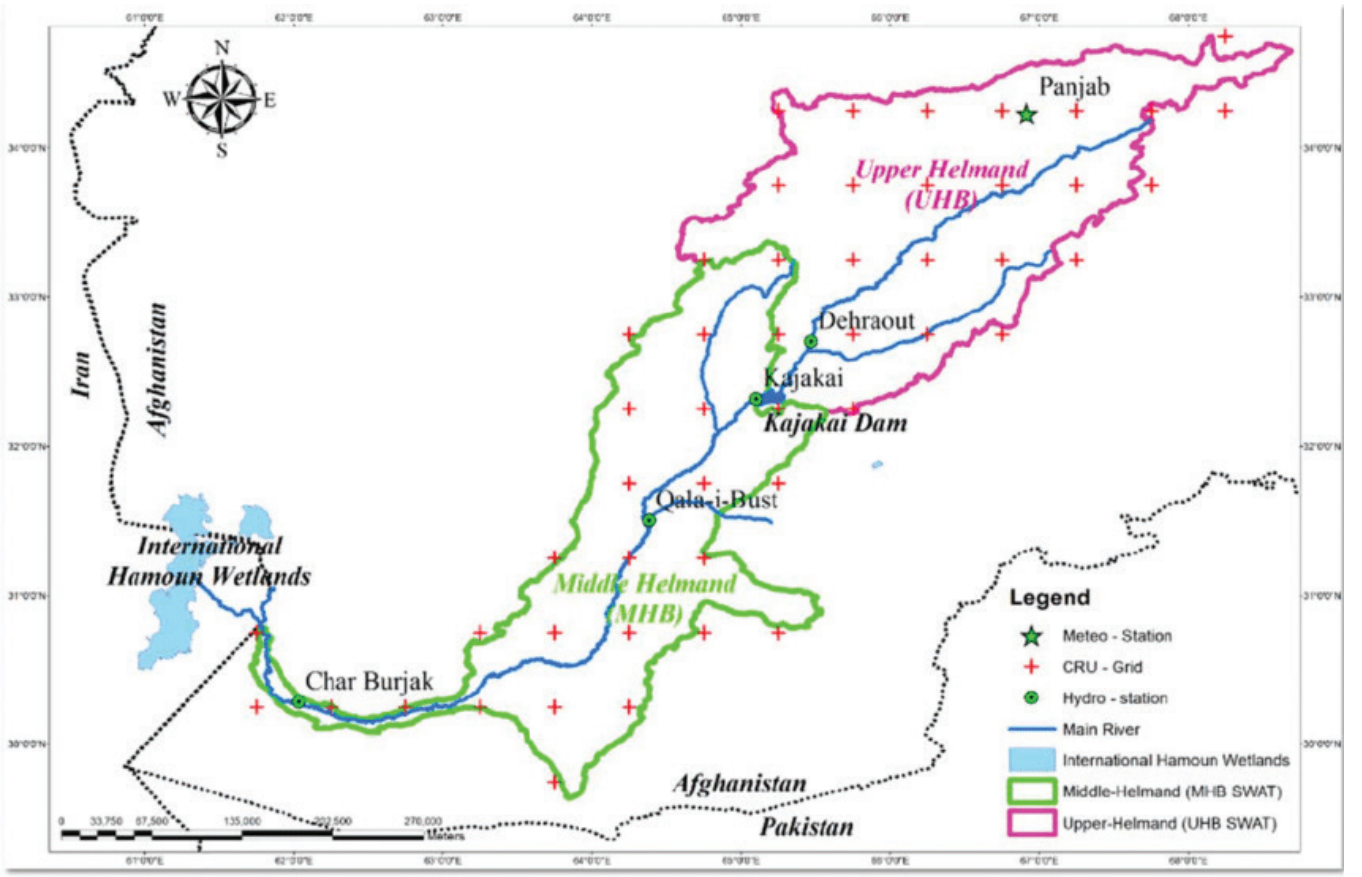


Figure 11.2: Helmand River of Afghanistan (Hajihosseini, Hajihosseini, Morid, Delavar, & Booij, 2020).

11.4 Water Security in Indian Context

The dynamics in the South Asian region are also equally alarming, with countries like India, China, Pakistan, Bangladesh and Nepal having water-sharing issues. All these issues have politico-military connotations for India. To understand water security in an Indian context, three critical elements of effective water resource management need to be analysed; first; the 'Environmental Issues' needing mitigation and adaptation, second; 'External Dynamics' with neighbouring countries and third; 'Internal Dynamics' of sharing the resources between states and managing sensitive politics around it.

According to a report by IDSA, the Union Ministry of Water Resources has estimated the country's water requirements to be around 1093 BCM for 2025 and 1447 BCM for 2050. With projected population growth of 1.4 billion by 2050, the total available water resources would barely match the total water requirement of the country. **In 1951, the annual per capita availability of water was 5177 m3, which was reduced to 1342 m3 by 2000**. The facts indicate that India is expected to become **'Water Stressed'** by 2025 and **'Water Scarce'** by 2050. The high pollution level further restricts the utilisable water, thus posing a serious threat to its availability and use (IDSA Task Force Member, 2010).

As an active regional player, riparian issues for India will be crucial for settling many of the water-induced conflicts in the region. It will thus have to balance its growing water needs and more significant security concerns with effective 'hydro-diplomacy'. The external riparian dynamics involving our neighbouring states for regional riparian evaluation demands a focused analysis of India's water-related issues with Pakistan, China, Bangladesh, Nepal and Bhutan. As water scarcity increases, water security will positively become a serious national security issue for India.

11.5 External Imperatives in Indian Context

The extensive river system of the continent is a serious political and military issue. Prominent among these river systems are the Indus basin in the west and the Ganga- Brahmaputra-Meghna basin in the east. Several bilateral treaties exist but are often hostage to the prevailing political animosity. With changing politico-military dynamics, this resource will take dominant space and broadly define regional politics.

Since India and Pakistan share the resources of the Indus water basin, a treaty called the Indus Water Treaty (IWT) was signed in 1960. The Treaty is mediated by the World Bank and regulates each country's water use and flow of the basin's multiple rivers. The Treaty has survived three wars but has seen its share of bilateral strains. As per the Treaty, India got control over the three Eastern Rivers: Ravi, Beas and Sutlej, with unrestricted use until the rise of any unwanted situation. Pakistan got control over the three Western Rivers, Indus, Chenab and Jhelum. The United Nations set up a Permanent Indus Commission for resolving any disputes that may arise in water sharing, with a mechanism for arbitration to resolve conflicts amicably. The Treaty also gives India 20% of the water from the Indus River System and the rest 80% to Pakistan. Scheme of flood protection or flood control, each country (India/Pakistan) is to avoid, as far as practicable, any material damage to the other country*. In executing any scheme of flood protection or flood control, each country (India/Pakistan) is to avoid, as far as practicable, any material damage to the other country (Mangi, Kay, & Chaudhary, 2019).

However, there have been issues concerning the Treaty, with both sides accusing each other of violating the Treaty's terms. In 2016, Pakistan approached the World Bank raising concerns about India's **Kishenganga and Ratle hydroelectric power projects** being constructed in Jammu & Kashmir. The World Bank permitted India to proceed with the projects after talks were concluded between the countries on the technicalities of the Treaty. The **Tulbul Project** (a navigation lock-cum-control structure at the mouth of the Wullar Lake, situated on the Jhelum from Anantnag to Srinagar and Baramulla) was suspended in 1987 after Pakistan objected to it. Recently, the government decided to review this suspension, not considering Pakistan's protests (Nadeem, Sayeed, & Dasgupta, 2019).

Recently, the bilateral relations between India and Pakistan have reversed. In the wake of the Uri attacks on India, Prime Minister remarked that blood and water could not flow simultaneously, indicating to Pakistan that its support of terrorism across the border will lead to India rethinking its accommodative stance on the IWT. India does not use its total share of water, and about 2 million acre-feet (MAF) of water from the River Ravi flows into Pakistan unutilised by India.

In the wake of the Pulwama attacks in 2019, the Indian government stated that all water flowing into Pakistan in the three Eastern Rivers would be diverted to Haryana, Punjab, and Rajasthan. India has undertaken a few projects to prevent this flow and utilise the total share of water under the Treaty. **Shahpurkandi Project** will help generate power for Punjab and Jammu & Kashmir. **Ujh Multipurpose Project** will create water storage on the Ujh, a tributary of the River Ravi, for irrigation and power generation; and the **2nd Ravi Beas link** below Ujh, which has been declared a National Project by the GOI. This involves constructing a barrage across river Ravi for diverting water through a tunnel link to the Beas Basin. This is planned to prevent excess water from flowing into Pakistan. India utilises nearly an entire share of 95% of the water of Eastern Rivers with the help of works like **Beas-Sutlej Link, Madhopur-Beas Link, Indira Gandhi Nahar Project**, and others. Experts opine that India should use the waters of the Western Rivers also as permitted by the IWT. This alone can send a strong signal to Pakistan but using of the excess water as per IWT is also a potential conflict.

Similarly, the issues of water security in China are of serious concern. China's South-North water diversion project is a cause of potential water conflict. In addition, the unwillingness of China towards the Treaty and agreement on water sharing has also become an essential factor that fuels the tension. China is one of the three countries to vote against international law on the Convention of the Law of Non-Navigational Uses of International Watercourses. The proposed dams on the Yarlung, almost 28 in number, have a capacity of 38 gigawatts of power.

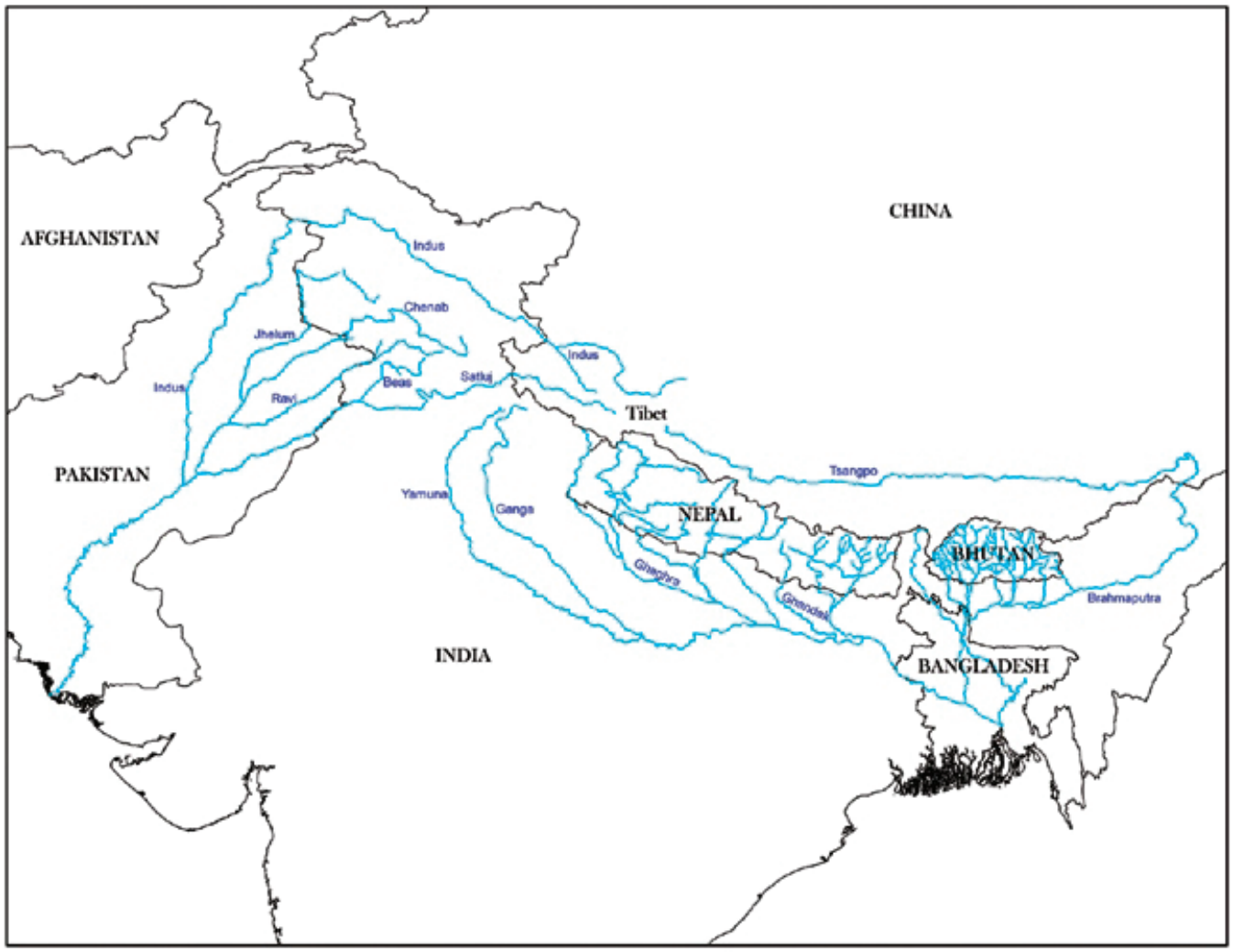
India and China could be hostile in relations because of their strategic interest, as the Brahmaputra river originates in the region of Tibet and flows towards the Arunachal Pradesh, which is strategic to both India and China, where China contests territorial claims. Therefore, historical factors such as the hostile relations over the territorial dispute of Arunachal Pradesh, including Ladakh and Sikkim, have remained divergent factors in China-India water diplomacy (Basumatary, 2020).

Similarly, the issues of water security with China are of serious concern. China's **South-North water diversion project** is a cause of potential water conflict. In addition, the unwillingness of China towards the treaty and agreement on water sharing has also become an essential factor that fuels the tension. China is one of the three countries to vote against the international law on the Convention of the Law of Non-Navigational Uses of International Watercourses. The proposed dams on the Yarlung, almost 28 in number, have a capacity of 38 gigawatts of power.

Another problem area is the water sharing over the Ganga-Brahmaputra-Meghna river basin between India and Bangladesh. Over the last few decades, both countries have been under a potential conflict of water sharing, mainly over the Ganga river, Barak river and Teesta river. The Ganga water treaty, signed in 1996, has somewhat resolved the issue. Currently, the Teesta and the Barak river issues remain significant challenges for both countries. The geopolitics of Bangladesh also determines India's Act East Policy. Maintaining peace and security, mainly the insurgency and migration, has become significant for India. The issues over river sharing affect bilateral relations and are top of the agenda during heads of state visits.

Bangladesh is also a member of China's BRI project, which creates complications, and caution needs to be exercised to sort out the differences (Hossain, 1998).

It may be appreciated that India's riparian relations with neighbours will remain fragile, with Pakistan, Bangladesh and Nepal continuously raising concerns over regulating and sharing river waters. Though the importance of politics cannot be discounted in India's water relations with Nepal and Bangladesh, there is far more scope to overcome and break political deadlocks through sensible water-sharing arrangements and resource development.



On the other hand, hydro-relations have been extremely beneficial with **Bhutan.** Sharing the benefits of river cooperation has given substance to the relationship. The growing confidence has led to a recent agreement between the two countries to develop 10 more hydropower projects with a total capacity of 11,576 MW in Bhutan. Similar possibilities need to be explored with Nepal to wean it away from China, where the leanings have been noticed of late. With Prime Ministers of India and Bangladesh also giving positive indications on water sharing issues, it is high time to consolidate this position.

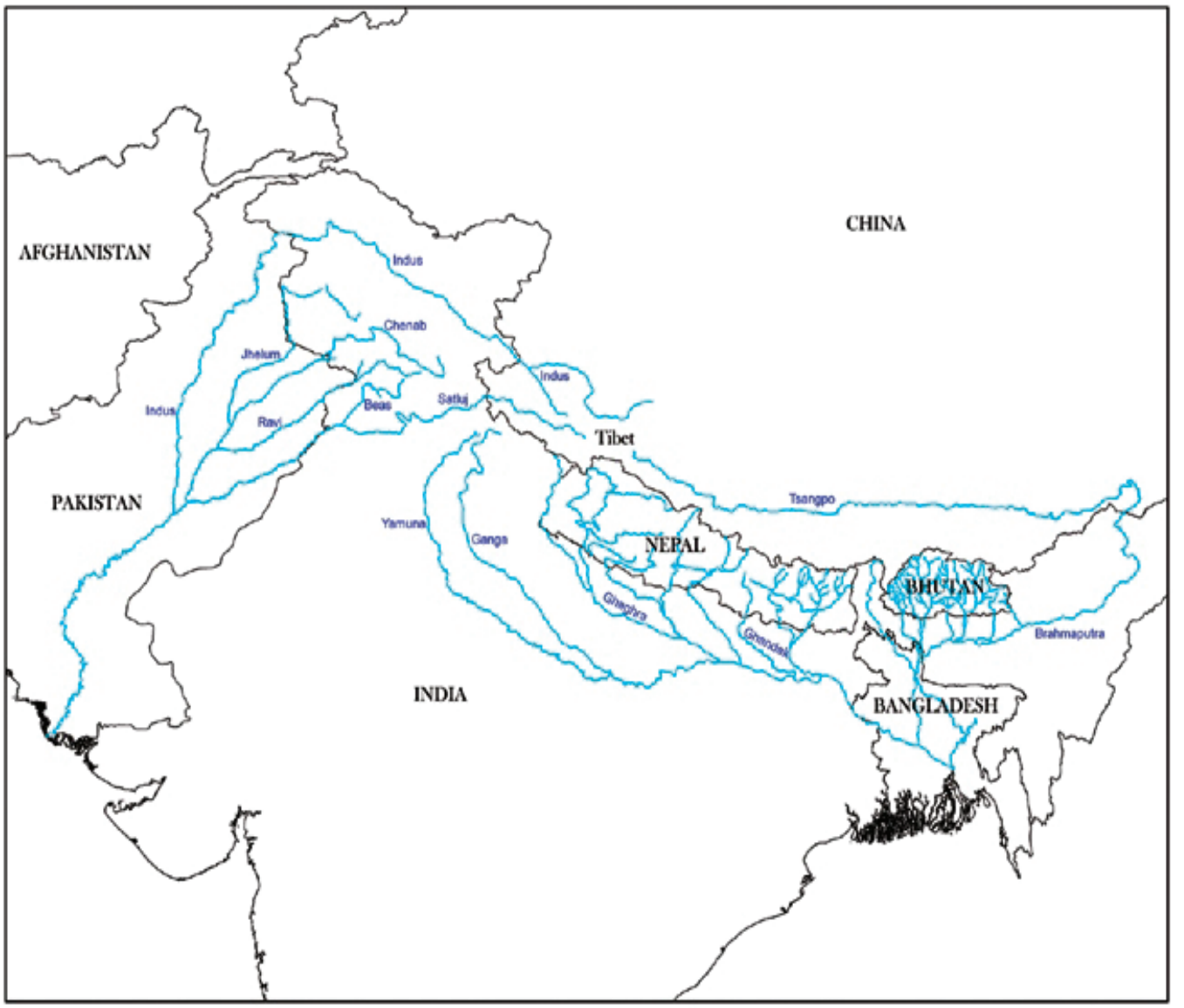


Figure 11.3: Rivers and Tributaries: Depicting Riparian Context of India (IDSA Task Force Member, 2010)**

On the other hand, hydro-relations have been extremely beneficial with **Bhutan.** Sharing the benefits of river cooperation has given substance to the relationship. The growing confidence has led to a recent agreement between the two countries to develop 10 more hydropower projects with a total capacity of 11,576 MW in Bhutan. Similar possibilities need to be explored with Nepal to wean it away from China, where the leanings have been noticed of late. With the Prime Ministers of India and Bangladesh also giving positive indications on water sharing issues, it is high time to consolidate this position.

11.6 Internal Political Imperatives in Indian Context

It is essential to understand the complexities of internal water sharing to understand the potential water conflict, which could magnify in future with further reduction in water availability. Water security is also an important issue amongst the water-sharing states within India and has seen violent protests from time to time. This, at times, is a sensitive issue, and the conflict can give rise to a law and order situation.

The relevant provisions of the Indian Constitution related to water resource management are; Entry 17 in the State List, Entry 56 in the Union List, and Article 262. The first provision makes water a state subject but qualified by Entry 56 in the Union List, which states: "Regulation and development of inter-state rivers and river valleys to the extent to which Parliament declares such regulation and development under the control of the Union by law to be expedient in the public interest." Since rivers cross state boundaries, disputes are inevitable. **The Inter-State Water Disputes Act of 1956** was legislated to deal with conflicts and included provisions for establishing tribunals to adjudicate where direct negotiations have failed (Government of India, 1956).

However, states have sometimes refused to accept the decisions of tribunals. Significantly, the courts have also been ignored on occasion. Finally, the Centre has sometimes intervened directly as well, but in the most intractable cases, such as the sharing of the Ravi-Beas waters among Haryana, Jammu and Kashmir, Rajasthan, and Punjab, central intervention, too, has been unsuccessful. An unambiguous institutional mechanism for settling inter-state water disputes needs to be present. The political dispensation of states and central govt also plays an important role. In order to understand the complexity of these disputes and the nature of the bargaining process, the following three cases can be analysed for their origin, reconciliation process and present status; **Krishna-Godavari water dispute, Cauvery water dispute and Ravi-Beas water dispute.**

To address the **Krishna water dispute**, the Krishna Water Disputes Tribunal (KWDT) was established in 1969 and delivered its report in 1973. In 2004, the second KWDT was established, which issued its report in 2010, allocating Krishna water at a 65 per cent dependability and excess flows as follows: 177 TMC for Karnataka, 81 TMC for Maharashtra, and 190 TMC for Andhra Pradesh. In 2013, the KWDT produced a "further report," which Andhra Pradesh challenged it in the Supreme Court in 2011 with a Special Leave Petition. It rechallenged it in the Supreme Court again in 2014. Andhra Pradesh has proposed that Telangana be included as a distinct party at the KWDT and that the allocation of the Krishna waters be reworked among four states instead of three (Department of Water Resources, River Development and Ganga Rejuvenation, 2004).



Figure 11.4: Major Indian Rivers

The Supreme Court in February 2022 asked if the States could amicably settle their quarrel. The Supreme Court hearing had seen verbal battles among the States, with Telangana submitting that there was no information forthcoming from Karnataka for the past 14 years about how much Krishna River water it had diverted. In turn, Karnataka had argued that much water was going to waste, "flowing down into the ocean", and there was a need to harness it for irrigation and to replenish dry regions. Karnataka had sought the vacation of a 16 November 2011 Order of the Supreme Court, which stopped the Centre from publishing in the Official Gazette the final order of the Krishna Water Disputes Tribunal II (KWDT) pronounced in December 2010, allocating the river water to Karnataka, erstwhile Andhra Pradesh and

Maharashtra (The Hindu, 2022). The publication of the Tribunal order is a necessary pre-condition for its implementation. Karnataka has argued that the dispute raised by Andhra Pradesh and Telangana was between them and did not concern it. The issue remains unresolved.

The Cauvery Water Dispute involves Tamil Nadu, Kerala, Karnataka, and Puducherry. The origins of the conflict may be traced back to two arbitration agreements signed between the then-Madras presidency and Mysore in 1892 and 1924. Karnataka began diverting water into four freshly constructed reservoirs without Tamil Nadu's approval in 1974, resulting in a conflict. The **Cauvery Water Disputes Tribunal (CWDT)** was created in 1990 to address the issue. It took 17 years for the final ruling (2007) on how Cauvery water should be shared between the four riparian states in normal rainfall circumstances. The government took another six years to announce the decree in 2013. This decree was challenged in the Supreme Court, which ordered Karnataka to provide 12000 cubic metres of water to Tamil Nadu, sparking nationwide demonstrations.

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The present dispute between **Punjab and Haryana about Ravi-Beas water** started with the reorganisation of Punjab in November 1966, when Punjab and Haryana were carved out as successor states of erstwhile Punjab. The four perennial rivers, Ravi, Beas, Sutlej and Yamuna, flow through these states. As a result of the protests by Punjab against the 1976 agreement allocating water from Ravi-Beas, further discussions were conducted (now including Rajasthan as well). In March 1976, when Punjab Reorganisation Act was implemented, the Centre notified fresh allocations, providing 3.5 Million Acre Feet (MAF) out of 7.2 MAF given to Undivided Punjab to Haryana.

Later, in 1981, the water flowing down Beas and Ravi was revised and estimated to be at 17.17 MAF (up from the earlier 15.85 MAF). Of this, 4.22 MAF was allocated to Punjab (higher than before), 3.5 MAF to Haryana (same as earlier), and 8.6 MAF to Rajasthan. To enable Haryana to use its share of the waters of the Sutlej river and its tributary, Beas, a canal linking the Sutlej with the Western Yamuna Canal, was planned. The 212-km canal (SYL) was supposed To carry Haryana's share of water to its southern parts (122 km in Punjab and 90 km in Haryana).

Haryana has completed its side of the canal. However, Punjab has continued to delay the construction for over three decades. In 2002 and 2004, the Supreme Court ordered the completion of the canal in Punjab. In 2004, the Punjab assembly passed a law that declared all inter-state agreements related to sharing Ravi and Beas waters invalid. However, in 2016 the Supreme Court invalidated (cancelled) this

law. Nevertheless, days after the Supreme Court's decision, the Punjab government **de-notified 5,376 acres of land** that was acquired for the canal and returned it to its original owners free of cost*. (Ministry of Jal Shakti, 2021).

Recently, the Haryana Assembly passed a resolution seeking the completion of the Sutlej Yamuna Link Canal (SYL) Canal. Haryana argues that it has difficulties providing water for the irrigation purposes of the state and has maintained that Punjab should comply with the Supreme Court orders. Haryana reportedly also faces a problem with drinking water in places where the underground water has depleted up to 1,700 feet. Punjab has maintained that the quantum of water flowing through the Ravi and Beas rivers has decreased over time. It has been seeking a fresh tribunal to conduct another reassessment of the volume of the water. Also, Punjab is facing a severe water crisis, and various reports have indicated that many areas of the state may go dry after 2029. As per reports, about 79% of the state's water is over-exploited. The issue remains unresolved despite Supreme Court Order.

Having analysed these three cases, it is evident that state governments have sometimes rejected tribunal awards, as in the case of the Ravi-Beas Tribunal and the Punjab government. In this case, the central government avoided notifying the tribunal's award to prevent further deterioration of the political situation in Punjab. In the case of the Cauvery dispute, the Karnataka government sought to nullify the tribunal's interim order through an ordinance. Though the Supreme Court pronounced the ordinance unconstitutional, the Karnataka government showed no inclination to implement the tribunal's interim order until a compromise was reached through political negotiations behind closed doors.

The Sarkaria Commission believed that to make tribunal awards binding and effectively enforceable, the ISWD Act should be amended to give these awards the same sanction as an order or decree of the Supreme Court. Existing institutions must resolve better inter-state water disputes, which are invariably subsumed into the general political process (Sarkaria Commission, 1988, p. Chap 17).

11.7 Environmental Imperatives

Since environment and climate change are critical factors of 'Water Security, we need to analyse their impact on potential conflicts. Considering the stress caused by water scarcity on civilisation, the criticality has been well understood by world leaders across the globe. One of the most significant UN initiatives is the 2030 Agenda for Sustainable Development, specified within the internationally agreed 17 Sustainable Development Goals (SDGs) and 169 targets. A comprehensive water goal (SDG 6), aiming to 'ensure availability and sustainable management of water and sanitation for all, has been included (International Centre for Water Security and Sustainable Management, 2019, p. 26).

Many organisations across the globe are working towards water security. One such organisation, the 'World Water Council, is an international multi-stakeholder organisation created in 1996 and based in Marseille. The Council focuses its activity on three main areas: Mobilise Political Action and Hydro-diplomacy, Promote Water Security and Organise the World Water Forum. The 9th World Water Forum, Dakar 2022, was held in Senegal in March 2022. In the presence of many world leaders, the Senegal president recalled the threats linked to water scarcity, a source of conflict, and called for this issue to be placed at the heart of the international agenda. He highlighted the preservation of international peace and security. He called for concerted governance of

transboundary basins, implementing effective regulation systems and promoting a circular sanitation economy to ease water-related tensions (World Water Council, 2022).

The Paris Agreement, the new global climate deal, finally entered into force on 04 November 2016, which requires more robust climate action towards a climate-neutral world. Changes in climatic patterns are responsible for water scarcity. Hence climate change is considered one of the common challenges to water and food security. In the Paris Agreement, countries agreed to promote adaptation interventions further to reduce vulnerability, build resilience to climate change's impacts, and apply a balanced approach to climate finance and international support between mitigation and adaptation. Mitigation is primarily related to reducing or minimising the causes, while adaptation is coming to terms with the reality to minimise the impact.

It is recognised that mitigation and adaptation are complementary to climate change. Mitigation interventions can proactively reduce climate risks, but it is impossible to avoid them altogether. They require reactive adaptation interventions to deal with adverse and often irreversible effects caused by unavoidable climate risks. Adaptation Interventions primarily relate to improvising water availability and include, Augmentation & Improvement of water supply systems, Groundwater recharge, Rainwater harvesting, Water recycling and reuse, Coastal protection infrastructure, and Stabilisation of river/ Flood control. The Mitigation Interventions are related to efficient management to stop misuse and include, Hydropower, Energy efficient pumping, Fuel switch (to lower carbon intensity), Heat recovery Biogas electricity generation, Sludge recycling/incineration and others. On the other hand, Water conservation and saving, System monitoring, Integrated Water Resource Management (IWRM)/ Water governance, Public Awareness and Education are common to both these strategies. (International Centre for Water Security and Sustainable Management, 2019, pp. 140-155)



Figure 11.5: Impact of Climate Change (National Oceanic and Atmospheric Administration, 2021)

11.8 Recommendations and Takeaways

Having analysed various issues of water security at National and International levels, let us converge on what needs to be done and the way forward for the international community in general and in the Indian context in particular. Some of the recommendations emerging from analysing various water security-related issues above are listed in subsequent paragraphs.

11.9 Conflict Resolution Mechanism at International Level

There currently needs to be an international legal framework for the equitable use of transboundary water sources. The Law of the Non-Navigational Uses of International Watercourses, passed by the UN in 1997, has yet to be ratified. The distribution pattern between the upper and lower riparian states has yet to find consensus. Therefore, there is a need to formalise a clear-cut understanding of water sharing. An international body whose directions could be binding by the member nations must be institutionalised. The Turkish/Armenian case is a prominent example of how two co-riparians can put their tensions aside, work together in mutual interest, and share transboundary waters equitably (Climate Diplomacy, 2022).

11.10 Conflict Resolution in the Indian Context

With Pakistan and China, water as an instrument and tool of bargain and trade-off will continue to assume predominance because the political stakes are high, and it has the potential to become a catalyst for conflict. India needs to create global awareness about the water resources in Tibet and build regional pressure with the pretext that Tibet's water is for humanity and not for China which has almost 2 billion people in South and Southeast Asia who depend on Tibet's water resources. Tibetans also need to be sensitised to the extensive environmental damage that China's water diversion and colossal infrastructure push in the region is causing ecological and environmental imbalance. India also needs to engage China diplomatically to guarantee the optimum utilisation of these resources in mutual interest.

With Pakistan, given some stringent provisions in the Indus Water Treaty, a **'modification**' of the Treaty should be called for. However, this is easier said than done and not without serious ramifications. India should also build adequate infrastructure for the allocated water use. However, with its support to Pakistan, China may also block the water from the Brahmaputra to Assam. It can also stop the waters of the Indus, which originate in Chinese territory. It is well established that Pakistan aids and abets terrorist actions from its soil. India should quantify the damage it has sustained over the decades because of Pakistani support of terrorism and seek suitable compensation as a first step. If Pakistan does not comply, India can threaten to walk out of various bilateral agreements, including the IWT. Under the draft provisions of the International Law Commission' Responsibility of States for Internationally Wrongful Acts, 2001', India can consider the abrogation of the Treaty so long as it is proportionate to infringement by the other side.

11.11 National Commission for Inter-state Resolution

As the examples above show, implementing river policies related to linking rivers or constructing dams and barrages is undertaken within a political context. In the backdrop of water challenges in India, it is crucial to adopt sensible riparian policies and 'healthy rivers' schemes without getting into the narrow political gains of individual states. The solution lies in the creation of specialised permanent institutions to regulate the allocation of water across states, including the resolution of water disputes. These institutions must respect the country's federal structure but should have greater independence and transparency. Water disputes can only be solved or balanced by establishing a permanent tribunal with the appellate jurisdiction of the Supreme Court over the tribunal's decision. The mechanism must be improved so that the body established by the Centre adequately represents the states to protect their interests.

11.12 Addressing Climate Change: Adaptation and Mitigation Strategies

This issue needs serious attention from the entire Global community to understand it and implement measures to safeguard water usage and improve water availability. In this context, UNESCO works to build a scientific knowledge base to help countries sustainably manage their water resources. All member nations should follow the directions and guidelines after suitably modifying these guidelines for local use. Also, there is an urgent need to conduct extensive research on emerging and future global water security issues in the context of the internationally agreed goals and targets. IWRM is also the way ahead to improve security and sustainability through better water use efficiency and conservation. The integrated approach adopted by South Africa to address the water crisis of Cape Town is an excellent example to follow.

11.13 Environmental Laws and Conventions

International laws on allocating water within the river basin are challenging to implement and often contradictory (International Centre for Water Security and Sustainable Management, 2019, pp. 154-155). There currently needs to be an international legal framework for the equitable use of transboundary water sources. Despite the UN Convention, riparian nations pitch their respective claims and counterclaims based on their interest and interpretation. Considering the criticality of global water security, there is an urgent necessity not only to frame international laws and conventions on the subject but also to institutionalise a mechanism to implement it in all sincerity.

11.14 Conclusion

Water security and its challenges have become emerging national security threats because of its importance and usefulness in comprehensive developmental strategy. Water security indirectly affects economic development and military capability. It is also essential to a country's socio-economic developmental strategy for short-term and long-term processes. This developmental strategy includes multi-dimensional aspects from traditional to non-traditional security challenges that directly or indirectly impact national security strategy. Water-related issues have become more challenging threats and may impact ongoing military security challenges and intertwine the territorial dispute.

Significantly, countries like China, India and Pakistan, being nuclear power states, are more vulnerable to water-related issues when the issues become more divergent over the territorial dispute. India, an emerging power, needs a huge resource like water for its energy security, food security, health, and economic security.

India has taken up a large number of infrastructure projects towards water security. However, rapid population growth, urbanisation and climate change are the challenging factors that affect India's water security objectives. Given these objectives, India needs to work on its hydro-diplomacy efficiently. Many existing treaties may have to be evaluated afresh, and new ones based on current hydrological knowledge will need to be framed. Internal water sharing and finding acceptable solutions between the states are also the need of the hour.

What is most important, however, is to sensitise the entire populace and all governmental and nongovernmental bodies working in the water sector to take it as a challenge to reverse the trend of water scarcity through sound mitigation and adaptation practices to climate action, smart policy formulation and effective implementation for equitable distribution of water. It needs to be appreciated by everyone that 'Water Security is essential for the nation's development, as well as for its evolution as a major power in the region.

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Section 12

AN ANALYSIS OF THE INFRASTRUCTURE IN TIBET

Col P Madhavan



Figure 12.1(a): Views of an Expressway in China.



Figure 12.1(b): Views of an Expressway in China.

1. Tibet is a vast mountainous region. A poorly developed area for a very long time, it has benefitted from the tremendous infrastructure improvement China has carried out in all its provinces. What strategic imperatives will influence our thoughts when we discuss Tibet and its Areas of Influence? We will discuss the infrastructure available to China in the Tibet Autonomous Region (TAR) and its Adjacent Areas; let us call them the Areas of Interest, i.e., Xingjian, Xining, Gansu, Chengdu and Kunming. Of course, the paper restricts itself to only those in our areas of interest. Collection and Collation of Information on China are not accessible, especially in a remote area such as Tibet, which has remained ignored for a long time. However, of late, there has been an explosion in infrastructure improvement. In Apr 2021, the infrastructural improvements had just begun. Today, it is moving forward at a breath-taking pace. Any discussion on Tibet necessitates a proper understanding of its terrain and the improvements made by China.
2. Before we begin, we can peek into how China manages its vast Country administratively. As elucidated in Wikipedia, the Constitution of China provides for five levels of Administration: The Provincial (Province, autonomous region, municipality, and special administrative region), the prefectural (prefecture-level city (officially "city with district level divisions" and "city without district level divisions", autonomous prefecture, prefecture [additional division] and league (the alternative name of prefecture used in Inner Mongolia, county (district, county, county-level city. (officially "city without district level divisions", autonomous county, banner (the alternate name of the county used in Inner Mongolia), autonomous banner (the alternate name for county used in Inner Mongolia), special district (additional division), forestry area [additional division]and township. The fifth level, known as Village, is an administrative level. The Constitution of China designs the fourth level as "basic level autonomy". ("Administrative divisions of China - Wikipedia") China has, in 2017, 33 provincial-level regions, 334 prefecture-level divisions, 2862 county-level divisions, 41,034 township-level administration and 704, 382 basic-level autonomies. All Prefectures in China is the sub-province level of minority autonomous area. If the province is one autonomous

territory province level), only other minorities make an autonomous prefecture. Like Xinjiang is Uyghur Autonomous Territory. Within Xinjiang, there are six autonomous prefectures. They are Kizilsu Kyrgyz Autonomous Prefecture, Bortala Mongol Autonomous Prefecture, Changji Hui Autonomous, Bayingolin Mongol Autonomous Prefecture, and Ili Kazakh Autonomous Prefecture. Interestingly, Hongkong and Macau are Special Autonomous Regions which are not part of the Chinese administrative System. Taiwan is a claimed Province. For this paper, the Tibet Autonomous Region(Lhasa) is included in its entirety and all related provinces/areas adjacent to it partially, like the Uyghur (Xingjiang) Autonomous Region, the Qinghai (Xining) Province, the Gansu (Lanzhou) Province, the Sichuan (Chengdu) Province and the Yunnan (Kunming) Province. The table (from Wikipedia) below will make it easy to understand this five-level administrative setup, which will likely be reduced to three levels soon.



From Wikipedia, the free encyclopaedia

Level	Name	Types
1	Provincial -33	22 Provinces
	(1 claimed)	1 Claimed Province (Taiwan)
		5 Autonomous Regions
		4 Municipalities
		2 Special Administrative Regions (Hongkong and Macau)
2	Prefectural Level -333	293 Prefectural Level Cities
		7 Prefectures
		30 Autonomous Prefectures
		3 Leagues
3	County Level -2851	954 Districts
		366 County Level Cities
		1360 Counties
		117 Autonomous Counties
		49 Banners (Inner Mongolia)
		3 Autonomous Banners
		1 Special District (a special county-level division located in Guizhou province) ("Administrative divisions of China - Infogalactic: the planetary …")
		1 Forestry District (in Hubei Province)
4	Township Level – 39864	8122 Sub Districts
		20942 Towns
		9660 Townships
		2 County Controlled Districts (Dist. Public Offices)
		985 Ethnic Townships
		152. Sums (Inner Mongolia)
		1 Ethnic Sum (Inner Mongolia)
5	Basic Level Authorities	104083 Residential Communities
	-662393	558310 Village Committees/ Administrative Villages/Villages

12.1 Tibet: Administrative Prefectures



Figure 12.2: (From: World Atlas)

3. The Tibet Autonomous Region is divided into seven Prefecture level divisions: Six prefecture-level cities and one prefecture. These are further divided into 66 counties and eight districts. The TAR has an area of 12,28,400,000 sq. km and a population of 30,02,000. Lhasa City (population 5.6 Lakhs), Shigatse city seven lakhs, Chamdo city 6.6 lakhs, Nyingchi city 2 lakhs, Shannan/Lhoka city3.3 lakhs, Nagqu City 4.6 lakhs and Ngari Prefecture 1 lakh are the prefectures in Tibet.
4. To cater for this massive administrative structure and population, China has, rightly, built/is building an extensive infrastructure of roads, railways, airports, hydroelectric dams and power stations and electronic communication systems. Most facilities have dual roles, i.e. for the armed forces and civilians. For example, the planned new nine-runway airport (five runways are ready), the Beijing Daxing International Airport, has one runway exclusively for military use.

5. In 2013, the Ministry of Transport(MOT) announced the "National Highway Network Planning (2013 - 2030)", which planned to bring the total number of highways to 119, with 81 connecting highways between them. The total mileage will be increased to 265,000 km (165,000 mi), with an increased focus on the western and less developed regions. In 2022, the National Development and Reform Commission (NDRC) and MOT published a new National Highway Network Plan and added and re-formed several expressways and national highways. All mentions of Expressways and Highways are as translated from these documents by Wikipedia.
6. All National Highways and Expressways denoted by the letter G (for Guo Dao) are managed by the Department of Transportation at the National Level. This is so even when many of these are planned and executed at the Provincial level. The Urban Rapid Roads belong to the local municipal administration. At the city level, the Municipal Transportation Bureau finances and administers the Highways belonging to DOT. The Municipal Urban and Rural Construction Bureau finances and administers the municipal urban and rural roads. Such roads have no coding. Provincial highways are denoted by the letter S for Shengdao. County Highways start with 'X', town level coded with Y and village level roads are coded with 'C', and dedicated roads are coded with 'Z'. China has, in the updated NTHS (71118Network), as of Dec 2021, 170,000 km of expressways, 40,000 km of expressways under construction, 290,000 km of expressways in their Execution Plan and over 300,000 km of prefecture-level roads. Provincial Roads, according to "Lawdefender" of 'Skyscraper City Blog" in China, business expressway projects are generally invested and constructed by domestic and foreign economic organisations or transferred to the Government to repay the expressway toll rights under the provisions of the Highway Law. From enterprise establishment, financing, project construction, operation and management all operate according to marketisation. Take Guangdong Province as an example. Guangdong Expressway, Shenzhen Expressway, and Dongguan Holdings, three expressway listed companies, from 2006 to 2014, the average net profit margin was 33.26%, 43.44%, and 50.92%, respectively. Elsewhere the same blogs mentioned that The G6 Expressway from Beijing to Lhasa needed help to raise funds for the completion of the construction. However, after the completion of the Highways and Expressways in Tibet, the mining traffic and tourism will help garner funds from the Road infrastructure in Tibet. Also, in many cases, the roads have been built for strategic purposes, and the Government is less interested in profits. Only expressways and highways related to Tibet and nearby are included unless these extend to other provinces from or into Tibet. In other cases, provinces find it challenging to repay the loans taken for construction. Despite this, it is very encouraging to see that China is managing to continue the construction of its road infrastructure with innovative and progressive methods.

12.2 Tibet

7. For ease of understanding, the entire area has been divided into the following sub-sectors to discuss the whole gamut of communication (Air, Rail and Road infrastructure available or planned for use in the Tibet Autonomous Region (TAR). (See the maps and tables on the Airports, Railway Lines and Roads at the end of this article):-

   (a) The Eastern Sub Sector. The areas of Chengdu and Yunnan - the Eastern Gateway into Tibet.

   (b) The Southern Sub Sector (Along G 318 Chengdu Lhasa Highway).

   (c) The North Central Sub Sector (Along the G317 Highway from Chengdu to Lhasa).

   (d) The South Western Sub Sector (G318 Highway Lhasa to Shigatse, Zhangmu and Kodari to Kathmandu).

   (e) The Western Sub Sector (G 219 Highway from Shigatse to Yecheng(Kargilik))

   (f) The North Western Sub Sector (Kashgar to Aksu along G3011 Highway, 475 km) and onwards by (G314 to Urumqui, 993 km).

   (g) The Northern Sub Sector (Urumqui to Xining, (G 312 and G30, 1744 km).

   (h) The Northern Approach to Lhasa Sub Sector. (From Xining, via Golmud to Lhasa along the G6 Highway and along the G 109 Highway to Lhasa).

12.2.1 The Eastern Sub Sector

8. Chengdu is Sichuan Province's capital and the centre of the Giant Panda. It is a prominent Financial City in China. Importantly, Chengdu is the take-off point for all Roads and Railway Lines into Tibet. In military operations against India, Chengdu will launch all military troops and logistics into Tibet. The areas of Chengdu and Yunnan are the Eastern Gateways into Tibet. Kunming is the entrance into Myanmar, Laos and Vietnam.

   (a) **Chengdu**. Chengdu, the capital of Sichuan in SW China, located at an altitude of 500m (1600 ft), is the third most populated city in China. It is financially and industrially vital too. It is also a prominent city catering to tourists. The area is mountainous, with hills climbing up to 4500 m. The Great Panda Breeding Research Base and the Jinsha Site Museum are located here, besides the Wenshu Monastery. Chengdu controls the Tibet Autonomous Region. The Headquarters of the Western Theatre Command Region is also located here, along with the 13th Group Army. Chengdu has two International Airports and is a major Centre for roads and rail.

   (b) **Kunming**. Kunming is the Capital of the Yunnan Province, located at an altitude of 1900m (6300 ft). Kunming is the Headquarters of the 14th Group Army of the PLA. During the Second World War, Kunming was the Headquarters of the Allied Struggle against Japan. 500 km to the West lies Mong Mao, the home of the first Ahom King, Sukhapha. He began his journey to Assam from Mong Mao. The Laos Kingdom also originated here. Myitkyina, Bhamo and Lashio, prominent cities in Myanmar with airports, are located only 560 km to the West and Southwest of Kunming.

   (c) **Air.** The Chengdu and Yunnan regions are close to Myanmar and can access NE India easily by air. Most of these airports are built close to one another to cater for tourist traffic, but many cannot be used for military purposes, even though many are high-altitude airports with long runways. The important airports closest to India are enumerated below.

(i) **Chengdu Tianfu International Airport**. Opened in Jun 2021, this airport is located at an elevation of 440m in Jianyang, 51 km to the SE of Chengdu Town. The airport has three operational concrete runways (six planned), 4000m, 3200m and 3800m long. It is only 960 km from Dibrugarh Airport. Except for Wikipedia, this airport does not appear on Social Media Platforms or Air Traffic websites.



Figure 12.3: (Attribution: FATIII Aviation)

(ii) **Chengdu Shangliu International Airport**. This Airport is a large twin concrete runway (3600 m long) International Airport located 16 km West of Chengdu Town. It is at an elevation of 495m. It is about 930 km from Dibrugarh.

(iii) **The Daocheng Yading Airport**. It is 400 km to the West Southwest of Chengdu. A high-altitude airport, it is at a height of 4411m with a concrete runway of 4200m. It is 424 km ENE from Tezu. The short distance to NE India enables the use of Fighter aircraft against Indian defensive positions and airports in a limited manner due to the elevation. The airport does not appear on maps or Social Media platforms.

(iv) **Kunming International Airport**. Located 617 km South of Chengdu, this is a two-concrete runway airport, 4000m and 4500m long, built at an elevation of 2100m. Dibrugarh airport is 831 km to the West.

(v) **Baoshan Yunrui Airport**. This airport is suited for offensive operations against NE India. Located 379 km SW of Kunming, it is built at an altitude of 1662 m. It has a 2400 m long runway. Tezu Airport is 447 km to the West.

(vi) **Dali Fengyi Airport**. The Dali City Airport, built at an elevation of 2149 m, is only 269 km from Kunming and 492 km from Dibrugarh. It has one concrete runway 2500 km long.

(vii) **Dehong Mangshi Airport (Near Ruili).** Earlier called the Mangshi Airport, this airport is the closest to Ruili on the Myanmar Border. It was built in1940 as part of the series of airports to support the war against the Japanese. The airport was reconstructed in 1988 and reopened in 1990 with a 2200 m concrete runway. Dibrugarh is only 492 km away, while Jorhat and Dimapur are just 500 km away. Suitable for military operations against NE India.

(viii) **Tengchong Tuofeng Airport**. This airport was first opened on February 16 2009. After improvement, the airport reopened on September 09 2018. Tengchong is famous for its tea, Volcanic activity and Hot Springs. At an elevation of 1905 m, it has a 2350 m long runway. Kunming to the East and Dibrugarh to the West are equidistant at 440 km.

(ix) Airports in Myanmar. **Nogmung** at an elevation of 1325 ft, **Putao** at an elevation of 1407 ft, **Khamti** at an elevation of 676 ft, Myitkyina at an elevation of 482 ft, Lashio at an elevation of 2772 ft and **Bhamo** at an elevation of 377 ft are the closest airports in Myanmar to China. These low-altitude airports can be used for staging operations towards NE India and vice versa. However, these are all of short length, 1600m to 2000m, and so may not be suitable for sustained offensive operations.

(b) **Rail.**

(i) **Chengdu**. Chengdu is connected to Boaji, Beijing, Chongqing, Shanghai, Xian, Wuhan, Lanzhou and Dujiangyan. The High-Speed Railway Line from Chongqing to Urumqi passes through Chengdu and is operational, along with the upgraded conventional line to Urumqi and Xining. The Sichuan Tibet Railway Line to Lhasa is under construction, completed up to Ya'an in the West (94 km). The line from Lhasa to Nyingchi (Lizhi) (435 km) in the West was completed and opened for traffic on June 25 2021. The 1011 km long Ya'an - Nyingchi line is planned to be completed by 2030 but may be completed earlier.

(ii) **Kunming.** Kunming is the hub of Rail traffic in the Yunan Province, with railway lines converging on Kunming from Chengdu, Shanghai, Guangxi, Haiphong (Vietnam Railway reopened in 1996), Yuxi (second railway line to Vietnam under construction) and Dali. Any move into Tibet will have to be through Kunming or Chengdu. The 336 km single-track electrified railway line from Dali to Ruili on the Myanmar border has become the trunk line of the Sino-Myanmar Railway. Built with the support of Singapore, the new 2000 km railway line from Chongqing to Mandalay began operations on May 22 2022, giving China a short route to the Indian Ocean.

(c) **Roads**.

(i) **Chengdu**. China has built an extensive network of Roads from Chengdu. Ten expressways connect the city with its suburbs. Well-laid National Highways connect Chengdu with Kunming (G5 and the G108, Beijing to Kunming), Shanghai (G42), Xiamen (G76) and

Chongqing (G93). The G317 (Northern Tibet Highway) emanates from here to Lhasa. The G 318 (Southern Tibet Highway) from Shanghai to Lhasa also passes through Chengdu. The Ya'an Kanglik (Yecheng) Yakang G 4218 Expressway has been completed till Kangding (SE of Chamdo Airport). The construction of the G 4217 Expressway, which runs alongside the G 317 National Highway from Chengdu to Chamdo, planned to be extended to Nagqu, is also in progress.

(ii) **Kunming**. Expressway G108 connects Kunming to Chengdu and Beijing. G 213, 2827 km long, from Ceke in Inner Mongolia to Mohan on the Laos Border, passes through Kunming, as does the G 320 from Shanghai to Ruili on the Myanmar Border (3695 km). On the G 320 from Kunming to Dali and onwards by G 214 to Mangkang (Markham County), we join the G318 to Lhasa. From Chengdu to Ya'an, the Highway runs 147 km and then 928 km by G 318 to Markham County, which is the Junction for the Road to Lhasa. The G219 National Highway, which runs from Kargilik through the Aksai Chin, has been extended from Shigatse through the Donshongla Tunnel, through Medok opposite Tuting, and runs through Zayu all through Yunan along the International Border with Myanmar, Thailand, Laos and Vietnam.

12.2.2 The Southern Sub Sector. Tibet Route to Lhasa (Along the G 318 highway)

9. This Sector adjacent to the Indian Border from Bhutan and Arunachal Pradesh is of the most interest to us. Any operation into India will be launched through this Sector. The G 318 Highway from Shanghai to Yining/Kargilik passes through Chengdu. It is believed to be one of the most picturesque routes in China. It crosses the Yangtze Kiang River near Ya'an as it flows Southwards before it doubles back, flows SW of Chengdu and turns East towards Shanghai. The terrain along the G318 is mountainous, with the road running through beautiful valleys. It meets the Yarlung Tsangpo (Brahmaputra R) just East of Nyingchi and North of Nanxin, where the massive River runs North and makes a wide bend to the South and South West, around the 7762 m (25531 ft) high Namcha Barwa Peak to Gelling and Tuting in India. It is interesting to observe that the dry desert-like terrain of Western Tibet changes to greenery with trees East of Lhasa Gonggar. Under construction is a massive Hydro Power Project on this River, below the Namcha Barwa Peak. There is a prophecy, possibly of the Great Buddhist sage Padmasambhava (Guru Rimpoche), that the massive mountain will collapse into the Yarlung Tsangpo, blocking the River. The blocked waters will flow over the Dongshong La Pass, under which the new (renamed G219) Nyingchi - Medok Highway passes. Will this Mega Hydro Power Project, three times the size of the Three Gorges Dam on the Yangtze Kiang, be the reason for the manifestation of this prophecy?

(a) **Air**.

(i) **Nyingchi Mainling Airport**. The Nyingchi (Lizhe) Mainling Airport, a greenfield "Hot and High" Airport, opened on the Southern Highway in 2006. Located at an elevation of 2949m, it has a 3000m long concrete runway. A parallel taxi track has been constructed, enabling it to be used as a runway. The closest airfields are Along, 133 km away, and Dibrugarh, 213 km away. In China, the Chamdo Airport, at an elevation of 4400 m, is 331 km away to the East. Missile Launchers also appear on the Northern side of the airport. Presently this airport is the

closest to our defences in Arunachal Pradesh. Nyingchi town also has an upgraded heliport with pads for eight Mi 17 helicopters.

(ii) **Lhasa Gonggar Airport**. The airport, located 62 km South of Lhasa, is connected by an excellent expressway. 340 km to the East is the Nyingchi Mainling Airport. It is at an elevation of 3570 m. It has two 4000 m Runways. Prominent SAM Sites and UAV Hangars with UAVs are seen at Gonggar.

(iii) **The Kangding Airport**. The Kangding Garze Airport, located 40 km Northwest of Kangding (Garze County), is at an elevation of 4280 m (14041 ft), making it the third-highest Airport in China. It has a 4000 m long Runway, which opened in Apr 2009. The Ya'an Yecheng Expressway (G4218) is open till just short of Kangding. Few details about this airport appear on Social networks even though it appears clearly on Google Maps. It merits mention that the three High Altitude airports, the Kangding Airport, the Doacheng Yading Airport, discussed in the Eastern Sector above, and the Garze Gesar Airport, discussed in the Northern Central Sector below, are all in the Garze Prefecture, 300 km from each other. The Chamdo Bangda Airport is only 400 km west of the Garze Gesar Airport.

(iii) **Shannan Lhunze Airport**. China has, since April 2021, begun construction of the Shannan Lhunze (Longsi) Airport at Lhunze. This airport is in an area rich in cadmium, silver, and gold and will assist the mining in the area by the Chinese Government. The airport is a dual-use military and civilian airport. At an elevation of 3980 m, it has one 4500m long Class C Runway. It is only 50 km ahead of our forward defences in Sela. No further details are available. Interestingly the newly planned G695 National Highway from Mazha in Xingjiang, through the Aksai Chin, terminates at Lhunze. The construction of this airport needs close monitoring.

(b) **Rail**. The 94 km Chengdu – Ya'an stretch of the 1629 km Sichuan – Tibet railway line opened for traffic on December 28 2018. The track for the 435 km Lhasa Nyingchi Line opened in Jun 2021. Construction work on the 1011 km Ya'an – Nyingchi line has commenced and is planned to be completed by March 2030, probably earlier. This line passes close to Chamdo Airport, located about 65 km south of Chamdo City on the G317 Highway. Thus Chamdo is a significant hub for Military Operations.

(c) **Roads**.

(i) **The G318 Southern Tibet Highway**. The Highway emanates from Shanghai and crosses Chengdu. It runs Westwards to Ya'an and onwards to Markham County, where it meets the G214 from Kunming and Dali at 928 km. While the G 214 moves Northwards to Xining, the G 318 runs onwards to the West, another 578 km to Bomi. It then drops down 216 km to Nyingchi. From Nyingchi, the G 318 climbs upwards to Lhasa (called the Lalin -Lhasa to, Linze-another name for the Nyingchi Highway). The G 318 Highway then proceeds to Shigatse and terminates at Zhangmu, a border town with Nepal. The G 318 is presently the longest Highway in China, but upon completion, when G219 National Highway will overtake it. This Highway will be an essential highway for the transportation of stores towards the IB.

(ii) **The G4218, Expressway**. A new expressway called the Yakang (Ya'an to Kanglik) (or YaYe) Expressway, from Ya'an to Yecheng (also called Kangilik), runs from Ya'an to Luding. It runs parallel to the G318 Highway with a 13 km-long Erlangshan Tunnel. It is open till just short of Kangding town. 93% of this expressway will run through tunnels or bridges! Construction on the Lhasa Shigatse Stretch is complete..

(iii) **G219 National Highway**. The G219 National Highway emanates from Yecheng near Kashgar in Xingjiang and runs through the Aksai Chin. It follows a route East of the Border with India and runs through Shigatse. From here, the Highway runs to Nyingchi. Then it runs through the 4.79 km long Donshongla Tunnel and the Louhozui Tunnel, 2.12 km long, to Medok (this portion opened in June 2021). It then climbs up towards Dagmo and turns Eastwards to Rima. It bends sharply Northwards and then runs East crossing a No of tunnels now under construction to Zayu. It then turns around the Myanmar Border to Baoshan and, after that, follows a route hugging the borders of Myanmar, Laos and Vietnam to reach Dongxing near the sea and the border with Vietnam (near Mong Cai). (Ref Mapcarta.com). It will be 10000 km long, the longest Highway in China. This Highway has full access to all forward defences of India, right from the Aksai Chin to Arunachal Pradesh.

(iv) **Unnamed National Highway**. A new greenfield, called the ZhaMo Highway, opened in 2013 after constructing the 3.3 km Galong La Tunnel. It connects Bome Zhamu with Medog County, opposite Gelling along the Siang/ Yarlung Tsangpo River. It connects Medog to Bome County, 116 km away along the G 318 Highway. This Highway opened up the last county, which was unconnected by road. Today it runs for a portion with the G 219 Highway. Medog is only 40 km from Gelling, the Indian border town in Arunachal Pradesh.

(v) **G 559 National Highway**. A new National Highway G559 will connect Zayu with Medog. The route is not known. It is likely to run South of G 318 to Zayu, following the present route of G219 National Highway (?).

(vi) **G560 National Highway**, The G560 National Highway runs from Lhasa Gonggar to Shannan and Nyingchi, following the route of the erstwhile S201, S202 and S 306 Provincial Highways. It runs Southwards to Cona County for 217 km, about 23 km from the Border with India. It is asphalted and is a relatively straight road. The plan appears to connect with the greenfield airport under construction at Lhunze and the Indian Border at Sela.

(vi) **G695 National Highway**. Another National Highway through Aksai Chin recently approved in 2022 is the 3500 km long G 695 National Highway from Mazha, 150 km West of Khorgas on the Khazakastan Border, along West/South of G219 in the Aksai Chin to Shannon Lhunze opposite the Sela Pass. This is discussed in detail in the Western Sub Sector later.

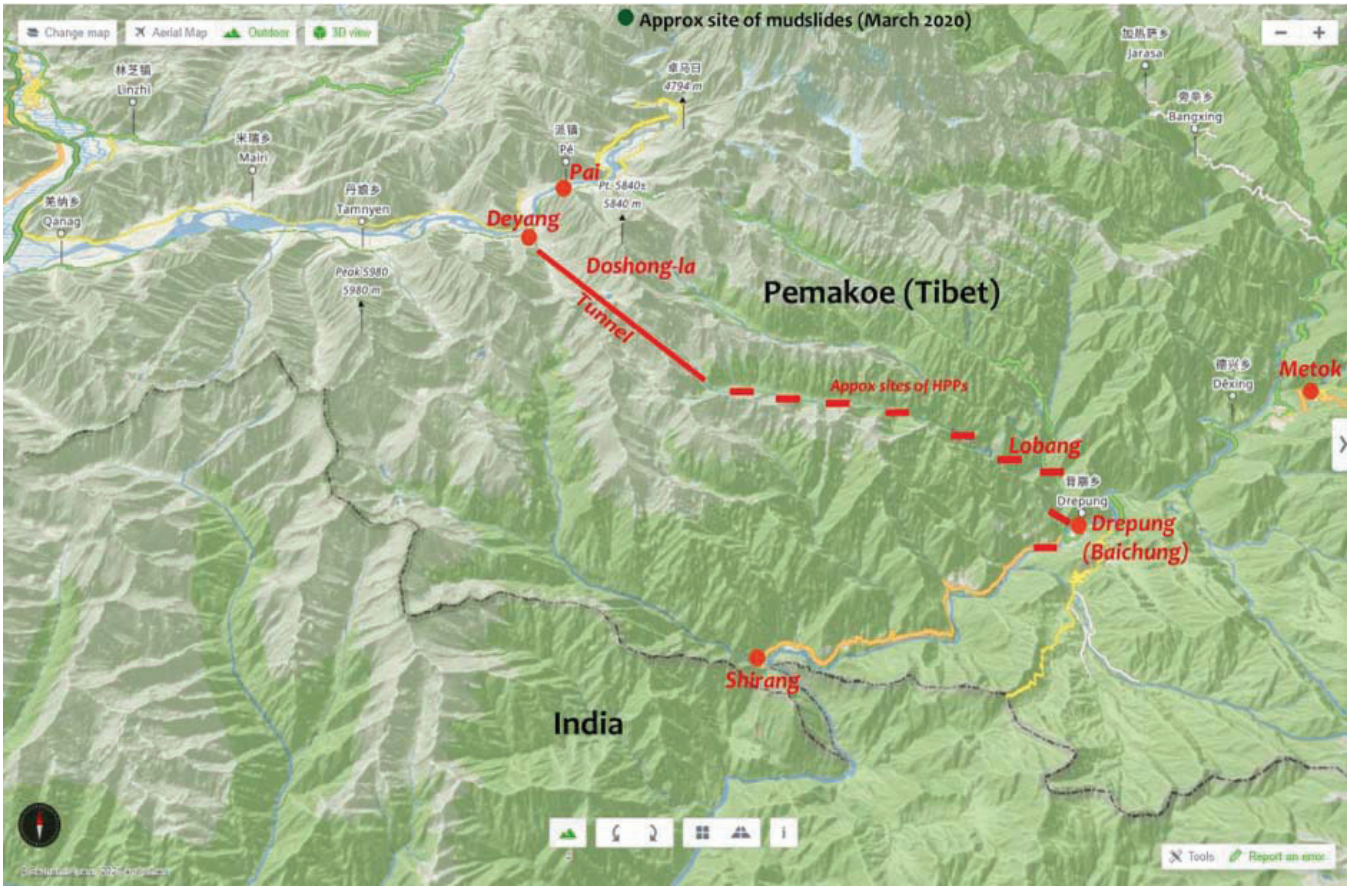
(vii) **S 201 Provincial Highway**. 226 km long, it runs from Rawu on the G318 National Highway to Xiazayu opposite Kibithoo in India through Dela, Goyu and Zayu. A dangerous highway, it runs alongside the Sangyu River (Lohit R in India), with the highest point being Demo La at 4817 m.

(viii) **S504 Provincial Highway**. The S 504 Provincial Highway runs from Bahezhen on the G318 National Highway, West of Nyingchi, to Basongtso Scenic Spot in the Mountains.

(ix) Three new roads have been constructed Southwards from G318, towards the border with India, but these end inside the forest. These emanate from the G 318 Highway at Ciduo, Tongmucun and West of Debacun. However, none of these seems to extend towards the G 219 Highway. These roads need to be closely monitored.

(d) **Miscellaneous Sites of Interest**. Google Satellite Maps shows two major military constructions just North of the junction of G318 and G214 at Bangdazhen. One is alongside Road G 214 and looks like a Logistics setup. The second, a little further North, is an ample concreted space which could be an adjunct of this Logistics space or, considering how large it is, could be a Missile Deployment Site.

(e) **Power Project**. A 300 million Megawatt Hydro Power Project (HPP), three times the size of the Three Gorges Dam, is under construction on the Yarlung Tsangpo River around the 'Great Bend of the River in Medog County North of Tuting. The plan appears to be to draw water by damming the River with a series of dams. They could then take the water through a tunnel SW of Pei across the Namcha Barwa Range into a series of turbines on a tributary, with the water flowing back into the Yarlung Tsangpo just before it enters India (See map below). This HPP in a highly seismically sensitive and landslide-prone area can have severe repercussions for India along the Brahmaputra River. The last mega landslide, West of the Great Bend of approximately 100 million tonnes, was on March 22 2021! The incursion with roadmaking equipment by the PLA at the end of Dec2017/ early 2018 near Bishing Village, near Geling, may have had connections with this massive project. The inadvertent crossing over of an Arunachali Youth at Bishing, who was arrested by the Chinese and later released, also could be because the youth's curiosity got the better of him. There is a prophecy, possibly of the Great Buddhist sage Padmasambhava (Guru Rimpoche), that the massive mountain will collapse into the Yarlung Tsangpo, blocking the River, and the blocked waters will flow over the Doshong La Pass, under which the new Nyingchi - Medok Highway passes. Will this Mega Hydro Power Project, three times the size of the Three Gorges Dam on the Yangtze Kiang, be the reason for the manifestation of this prophecy? A map from Claude Arpi's Blog on this HPP is appended below:-



12.2.3 The North Central Sub Sector

10. This area is around the G 317 Northern Tibet Highway from Chengdu to Nagqu (Nakcho). This area has seen tremendous improvement in infrastructure recently.

(a) **Air**.

(i) **Chamdo Bamda Airport**. Chamdo has a High Altitude military cum domestic Airport constructed at an elevation of 4334 m. The Airport is approximately 65 km South of Chamdo City on the G 317 Highway. Adjacent to the G214 Highway running North to South, it is 300 km from Nyingchi and 391 km from Dibrugarh. Lhasa is 619 km to the West. The G 318 National Highway is a further 70 km to the South.

(ii) **Garze Gesar Airport**. This greenfield airport, 4068 m above mean sea level, has one concrete runway 4000 m long. It is 446 km NW of Chengdu and 870 km North of Dibrugarh.

(iii) **Yushu BatangAirport**. A reconstructed airport, Yushu Batang, is built at an elevation of 3890 m and has one 3800 m long runway. Chamdo Airport is 254 km to the SW, and Dibrugarh Airport is 626 km to the South. It became prominent as soon as it was opened in 2010 when it quickly helped deliver rescue personnel and relief supplies to the area after the 2010 Yushu Earthquake. An old runway, disused, is visible to the East of the present Runway. This Airport is only 300 km North of Chamdo Airport.

(iv) **Nagqu Dagring Airport**. Nagqu Dagring Airport, at an elevation of 4436 m, will be China's highest Airport. It was to be completed by 2020, but construction delays have occurred. The Airport was part of a Chinese government development scheme to build 97 airports across China by 2020. The Government had intended that four-fifths of China's population would be within a 90-minute drive of an airport.

(b) **Rail**. The Golmud (Gormo) Lhasa Railway Line meets the Highway at Amdo and moves on to Lhasa.

(c) **Roads**.

(i) **G4217 Expressway**. A new 1200 km long six-lane Expressway G4217 (the Rongchang Expressway), is under construction from Chengdu to Chamdo. It will be extended to Nagqu later. Construction of 217 km from Chengdu to Ma'erkang has been completed. 86% of this road runs through tunnels.

(ii) **G317 National Highway**. A four-lane Highway, the G 317 emanates from Chengdu and passes through many places of Buddhist importance. It also rises into the Mountains to the North West, runs 1219 km to Chamdo and then continues 793 km to Nagqu. The G 214 National Highway crosses G 317 at Chamdo. From Nagqu, the G6 or the G109 Beijing Lhasa National Highways runs over 317 km to Lhasa.

(iii) **G345 National Highway**. A 3000 km long Highway from Jiangsu (Quidong) to Nagqu through Fuyang (S102), Henan, Shaanxi, Gansu (S305 and S307 relabelled), Qinghai (portions of S 309), crosses G214 and connects with G109 at Nagqu. Certain portions are still under construction.

(iv) **G349 National Highway**. A new Highway was planned in 2013 from Zhagyab to Saga; the starting point was extended to Markam on the G 318 National Highway. This road will follow the exact alignment for the S 303 Provincial road shown below but will extend to Saga, 590 km West of Nagqu, along the S 301 Provincial Highway. The exact route or distance is not known.

(iii) **S 303 Provincial Road**. The S 303 Provincial Road runs South of G317 from Baxoi County on the G 214 South of Chamdo to Bulong Town, 695 km to the West on the G317 National Highway. It runs almost entirely above 4200 m elevation. It is considered one of the most dangerous roads in Tibet. Possibly will be subsumed by the G349 above.

The South Western (Nepal) Sub Sector

11 The South Western Sub Sector includes all areas South of Lhasa to the borders of Nepal and North of Bhutan and Sikkim.

(a) **Air**.

(i) **Shigatse Peace Airport**. The Shigatse Peace Airport is a greenfield airport constructed in 1973 as a purely military airfield. It opened for civilian traffic in 2010. It is located at an elevation of 3782 m (12,408 ft) and is one of the highest airfields in the world. It has a concrete runway of 5000 m with an asphalt overrun of 60 m on either side. Construction of the new 3000 m runway at the West End of the existing runway happened post the Doklam Crisis The Lhasa

Gonggar airport is 155 km to the East, and the Ngari Gunsa Airport, at an elevation of 4274 m, is 936 km to the Northwest. Tribhuvan International Airport at Kathmandu is 427 km to the Southwest. Bagdogra Airport is 312 km to the Southeast.

(ii) **Lhatse/ Tingri Airport**. A new greenfield airport is under construction at the base of Mount Everest. It is at an elevation of 4300 m. Shigatse Airport is 200 km to the NE, and Bagdogra Airport is barely 150 km to the South.

(iii) **Ngari Burang Airport.** A new airport is under construction near the Sino-India-Nepal Tri Junction at Burang (Taklakot). Burang has been garnering the attention of the Chinese Government with roads, a Railway line and an airport planned here. The Airport was to be operational by 2021, but its completion has yet to be confirmed. It is at an elevation of 4250 m with one runway of 4500 m. Delhi will only be 400 km away from this Airport.

(b) **Rail**. The following lines are planned/under construction:-

(i) **Lhasa Shigatse Kyirong (Gyirong)**. The Lhasa – Shigatse - Kyirong Railway Line will have a length of 761 km, close to the Nepal border. This line will extend to Kathmandu (another 40 km). The Lari (Lhasa - Rigatse) Line, 253 km long, opened for commercial operations in Aug 2014. The Lhasa-Shigatse Railway will be able to transport mineral ore from mines in Shetongmon County (Xietongmen) immediately West of Shigatse to processing plants in mainland China. Shetongmon County has one of the PRC's most significant copper and gold deposits. The line construction from Shigatse to Kyirong, expected to be completed by 2022, is not yet confirmed.

(ii) **Kyirong Kathmandu Railway Line**. A Chinese Construction Company has expressed an interest in constructing the 121 km Kathmandu – Rasuwagadhi Line to connect it to Kyirong. However, due to the massive Nepal earthquake of 2015, construction work on this Railway Line has been hampered. Plans exist to extend the Railway from Kyirong to Kathmandu, the Indian Border at Lumbini, and Pokhra. In Mar 2022, among the many agreements signed with Nepal was one for the commencement of a technical feasibility study for extending the line from Kyirong to Kathmandu.

(iii) **Shigatse Burang Railway Line**. Plans exist for an extension of the Lhasa Shigatse Line to Burang. Claude Arpi, in his article in the Indian Defence Review, mentioned this in 2016, but its level of progress is not known.

(iv) **Shigatse Yatung Railway Line**. 302 km long, through Gyantse, it will lead to the Strategic town of Yatung, just opposite Cho La and Natu La.

(v) **Shigatse Hotan Railway Line**. A Takshashila Institution Discussion Document by Suyash Desai, on Dec 2021, quotes Chinese Sources on their plans to construct a railway line from Shigatse to Hotan.

(c) **Roads**.

(i) **G4218 Expressway**. Construction of the 166 km long stretch of the G4218 Expressway from Lhasa Airport to Shigatse commenced in Dec 2018. The Expressway from Lhasa Gonggar to Shigatse was opened in June 2021.

(ii) **G318 National Highway**. It continues 764 km Westwards from Lhasa to Zhangmu, or Kyirong, close to the Nepali border town of Kodari. The Chinese-built Highway runs to Kathmandu (40 km). Shigatse is 271 km from Lhasa. It is another 150 km to Lhatse and another 293 km to Nyalam County. Zhangmu (Kyirong) is 32 km from Lhatse and 2 km from Kodari.

(iii) **S309 Provincial Highway**. This Provincial Highway turns South from the G 318 Highway at Dagaxiang and runs 190 km to Gyantse.

(iv) **G219 National Highway**. This infamous Aksai Chin National Highway from Kargilik to Dongxing, 10000 km long, has been discussed in the Southern Sub Sector above.

(v) **G 695 National Highway**. This new strategic Highway from Mazha to Lhunze.has also been discussed in the Western Sub Sector later.

(vi) **S304 Provincial Road**. The S 304 Provincial Road runs from Yangbajain to Dazhuka on the G318 short of Shigatse, 170 km in length. It is a shortcut bypassing Lhasa but is a dangerous road mainly running above 3800 m elevation.

(vii) **G562 National Highway**. The G 562, earlier called the S203 and S204 Provincial roads, have been renamed the G562 National Highway, running between Baingoin and Yatung. This Highway is strategically significant. It is 2107 km long. Yatung Valley is just North of Natu La, Yak La and Cho La.

(viii) **G216 National Highway**. This long Highway runs North to South from Altay on the Kazakhstan Border, North of Urumqi to Yatung (Yadong), running through Urumqi, Korla, Qiemo, Minfeng, Keriya, Lake Lighten (5800m above sea level), Jieze, Gerze (on the S 301 Provincial Highway) and Lhatse.to Yatung, 2763 km long. Claude Arpi mentioned this route in his May 2020 article in his Blog. We had assessed it further to the East, but the terrain would not have permitted this route. This Highway has significant Strategic Implications as the transfer of troops and heavy equipment from the North to the South will be greatly facilitated.

(ix) **S205 Provincial Highway**. A 440 km long road, militarily significant, connecting Sansangzhen on the G219 National Highway and the S 301 Provincial Highway runs East to West between Ngari and Nagqu at Nyima. The road runs above 4200 m and is unpaved at no places.

(x) **S 206 Provincial Highway**. This fully paved Provincial Highway, running from Saga County, 401 km long, runs a few km West of the S 205 Provincial Highway, connecting Dangbo on the G219 National Highway and Dongcuo, just East of Gerze. It is another highway providing an alternate route for the transfer of troops and stores.

(xi) **G563 National Highway**. The G563 National Highway is a short 35 km connecting road from the G 318 National Highway to Sa'gya town in the Shigatse Prefecture.

(xii) **G564 National Highway**. The G 564 connecting road to Burang replaces the S 207 Provincial Road. It runs at over 4000m elevation and is 100km long.

(xiii) **G565 National Highway**. This is a 135 km connecting road between G 219 Highway and Zanda (Tholing Monastery) just opposite Mana Pass.

(xiv) **Yatung Valley**. In the Yatung Valley, China has constructed an excellent network of asphalted/concrete Roads, climbing up from the BB Area to opposite Cho La, Yak La and the Red Ridge running back to Yatung, as visible on Sattelite maps. An excellent local Highway, a two-way road connects Yatung along the Western edge of the Valley Northwards with S 309 Highway. Another Road connects Yatung with Natu La. The G216 and the G562 National Highways will likely replace some of these roads. More minor roads extend towards the Indian Border to the Northern extreme of North Sikkim. Own forward defences cover most of these roads.

12.2.4 The Western Sub Sector Shigatse to Kashgar

12. This Sector is strategically a very important Sub Sector for India. This Sector includes the famous route G 219 National Highway from Altay in Xingjiang, through Kargilik and the Aksai Chin to Dongxing on the Vietnamese border next to the sea. The entire Highway in the West and South of Myanmar runs at a height of more than 3000 m. The route is also vital because Mt Kailash lies North of this Route, and Mansarover Lake is just to the South. The G 695 National Highway has been included in 2022 to run immediately to the West and South of the G 219 National Highway.

(a) **Air.**

(i) **Ngari Gunsa Airport**. The Ngari Gunsa (Kunsha) Airport, which opened in 2010, has an elevation of 4274 m and a 4500 m long runway. Located 45 km Northeast of Shiquanhe, the biggest town in the Ngari Prefecture, the Airport is only 207 km from Mt Kailash and the Manasarovar Lake over the G219 Highway. As the crow flies, it is 304 km East (ENE) of Shimla and 324 km SE of Leh, Chandigarh 349 km to the WSW and Delhi 484 km to the SW. It is 902 km SSE of Kashgar, the Gateway into the CPEC corridor and 548 km South of Hotan.

(ii) **Kashgar Airport**. The Kashgar or Kashi Air Port is located at the end of the G 219 Highway. It is located at an elevation of 1380 m and has one concrete runway that is 3200 m long. The closest Chinese Airports are Hotan, 436 km to the Southeast, and Aksu, 409 km to the Northeast. In Pakistan-Occupied Kashmir, Gilgit Airport is 429 km to the Southwest, Skardu Airport is 470 km to the South and Chilas Airport is 488 km to the Southwest. Srinagar Airport is 628 km to the South, and Leh Airport is 616 km SSE.

(iii) **Tashkurgan Airport**. The Tashkurgan airport is located on the Kashgar Khunjerab route of the CPEC and was opened on June 30 2022. It is constructed at 3258 m and has one concrete runway 3800 ms long. Kashgar airport is only 180 km to the NE, and Leh is 400 km to the SE. Many recent flights close to our no-fly Zone in Aksai Chin have taken off from this airport.

(b) **Rail**. Shigatse – Hotan Planned Railway Line. There is a plan to extend the railway line from Shigatse to Ngari and onward to Yecheng, Moyu (Karakash) or Hotan Railway Stations.

(c) **Roads**.

(i) **G4218 Expressway**. As mentioned above in earlier paras, the G 4218 Expressway from Ya'an to Yecheng is under construction.

(ii) **G 219 National Highway**. It runs from Lhatse, 240 km West of Shigatse, to Yecheng or Kargilik. It was initially 2086 km long. Construction of this Road was started in 1951 and completed in 1957, though most of it was a gravel Highway. This Highway passes through Aksai Chin. The construction of this Highway surprised us and was one of the primary reasons for the 1962 Indo-China War. It was fully asphalted by 2013. The G 219 enters the Aksai Chin near the Hongshan Hu Lake, passes to the West of the Aksai Chin Lake and exits the incursion 40 km to the Northeast, where the International Border crosses the Karakash River. The G 219 runs about 150 km through the Aksai Chin Area. This Highway is in the cold desert with long distances without water, running at an average elevation of over 4000m, with the highest point at 5392 km. There are a No of passes at over 5000m and many above 4500 m. The average temperature along this Highway is -25 degrees Celsius. It has been expanded in the China National Highway Network Planning (2013–2030) both Northward and Eastward to span the entire Chinese western and southern border. The new route will measure over 10,000 kilometres (6,214 mi), making it, by far, the longest National Highway (Wikipedia), longer than G 319 National Highway. It will now run from Xinjiang to Dongxing on the Vietnamese border. The Highway is mentioned in the Eastern, Southern and Southwestern Sectors above.

(iii) **G695 National Highway**. Another National Highway through Aksai Chin recently approved in 2022 is the 3500 km long G 695 National Highway. It runs from Mazha, 150 km East of Khorgas on the Khyrgistan Border, along West/South of G219 in the Aksai Chin and further through South of Shigatse and Lhasa Gonggar to Shannon Lhunze opposite the Sela Pass. Interestingly the Chinese plan to run this Highway through Depsang Plains, Galwan and Hot Springs! This Highway has been mentioned under the Southern and South Western Sectors also. This plan is an apparent attempt to irritate, even if they cannot build it as planned. It will be a new conflict point. Could the new bridge over the Pangong Tso built recently by the Chinese be a precursor to this road? A point to ponder.

(iv) A military road, 25 km long, connects Rutog County on the G 219 National Highway with Spangur Tso. Another military road, about 80 km long, connects Anglacuo Lake on the G219 to Pangong Tso North through Wujiangkun.

(v) Besides these major Highways, China has also constructed a No of Country Roads in the interior and towards the Indian, Bhutan and Nepal Borders.

12.2.5 The North Western Sub Sector: Kashgar to Urumqi

13 The North-Western Highway runs Eastwards from Kashgar. This Sector is an area in the news because of the alleged atrocities on the Uighur Muslims. This area may impact operations against India, especially for air warfare, logistics and missile deployment.

(a) **Air**.

(i) **Aksu Airport**. An asphalted airport, located 409 km NE of Kashgar, at an elevation of 1163 m with one runway 2400 m long. Nearby airports are the Kuqa Quici Airport, 230 km to the East; Urumqi Airport, 657 km to the Northeast; Yining Airport, 311 km to the North and Hotan Airport, 471 km to the Southeast. Leh Airport s 828 km to the SW.

(ii) **Hotan Airport**. Hotan had one concreted runway, 3200 m long, with an elevation of only 1424 m. Construction of a parallel runway of equal length under construction can be seen on Google Maps and was reported by India Today in an article by Col Vinayak Bhat (retd) on December 09 2020. This runway is also likely to have been operationalised. Hotan Airport is 385 km East of Leh (385 km), with Kashgar Airport 436 km to the Northwest and Jammu Airport 666 km to the Southwest. It is the closest Airport to all North Indian Airports, with New Delhi only 976 km and Jammu 667 km away. In Satellite pictures, Hotan appears to be a major PLAAF Base.

(iii) **Qiemo Yudu Airport**. Built at an altitude of 1252 m, this Airport has one concrete runway 2800 m long. It had an old airport closed in 2011 when the new Airport began operations. Hotan airport is 514 km to the WSW. Leh Airport is 844 km WSW of this Airport.

(iv) **Kuqa Quisi Airport**. Constructed at an elevation of 1074 m, it has one concrete runway 2600 m long. Aksu airport is 230 km WSW, and Leh Airport is 1000 km to the West.

(v) **Korla LichengAirport**. The Korla Airport is at an elevation of 927 m and has one concrete runway 2780 ms long. Aksu airport is 480 km to the West, and Leh Airport is 900 km to the SW.

(vi) **Ruoqiang Loulan Airport**. Built at 890 m elevation, it has one concrete runway 2800 m long. Qiemo airport is 200 km WSW, and Leh airport is 1000 km WSW.

(vii) **Golmud Airport**. Golmud Airport, built at an elevation of 2845 m, has one runway, 4800 m long. Nyingchi Mailing Airport is 790 km to the South, and Dibrugarh airport is 992 km to the South.

(viii) **Mangya Huatugou Airport**. The Huatugou airport to serve Mangya County has been under construction for some time. It is being constructed at an altitude of 2945 m and will have one runway 3600 m long. It is located 400 km to the NW of Golmud. It does not appear on any search engine except Nouahs Ark. An IATA No has not been allotted too. Hence this Airport has not been included in the map or table below.

(ix) **Urumqi Airport**. This Airport, at an elevation of only 648 m, has one concrete runway, 3600m. Two 3600m and 3200 m long runways are under construction and will be ready in 2023. Urumqi airport can handle A380 and Boeing 747 aircraft after the completion of the new construction. Turpan, 163 km to the Southeast, is the nearest Airport. It is 1382 km from Leh Airport.

(x) **Xining Caojiabao Airport**. Xining is the capital of the Qinghai Province. This Airport was built 30 km East of Xining and began operations in 2011. The old Airport at Lejiawan, 17 km to the West, is now a military base. At 2170 m, this Airport has one asphalt runway 3800 m long. Lanzhou is 145 km to the East, and Dibrugarh Airport is 1203 km to the SW. It is not included in the table below.

(v) **Lanzhou Zhongchuan Airport**. "Lanzhou's first airport, Gongxingdun Airport, was located just 2 kilometres (1.2 mi) from the city centre." ("Lanzhou Zhongchuan International Airport - Wikipedia"). In 1957, a decision was taken to move the Airport to a better location. After 1976, the Airport was demolished and is now used as Staff Quarters of the PLAAF. A suitable

location for the new Airport was found 71 km to the North at Zhongchuan. It was opened in 1976 and has seen two expansions. This expansion began in 2019; the entirety of Zhongchuan town and several villages, totalling 10.7 square kilometres (4.1 sq mi), was demolished to make way for the expansion. The residents were relocated to Lanzhou and Lanzhou New Area. Presently the Airport, at an elevation of 1947 m, has one asphalt runway, 3600m long. One terminal and two runways, each 4000 m long, are under construction. Xining is 145 km to the West, and Dibrugarh is 1289 km to the SW. It is not included in the table below.

(b) **Rail**.

(i) **The Southern Xinjiang Railway**. This Railway connects Urumqi with Aksu over a double line, 983 km from Turpan. A single line connects Aksu to Kashgar and from Kashgar to Hotan. It is 1445 km from Kashgar.

(ii) **The Hotan Ruaqiang Railway Line**. The Hotan Ruoqiang Railway line, with a design speed of 120 kmph, was opened for traffic on June 16 2022. Further East, it connects with the Golmud Korla Urumqui Railway Line. It is 825 km from Ruoqiang to Hotan. Interestingly, the route includes five viaducts over the sand with a combined length of 49.7 km, designed to allow sandstorms to blow under them.

(iii) **High-Speed Lanzhou Xinjiang Railway Line**. Urumqi falls on the High-Speed Lanzhou – Xinjiang Railway line, which is 1904 km long. The Lanxin railway has been extended from Ürümqi Westwards to Alashankou, on the Kazakhstan border. According to Wikipedia, the distance from Alashankou to Lanzhou is 2360 km. Beyond Alashankou, the Railway links up with the Turkestan–Siberia railway of Central Asia and eventually reaches Rotterdam. Last year a total of 9579 freight trains connected Chinese markets with Rotterdam.

(c) **Roads**.

(i) **G30 Expressway**. The 4243 km long G30 Expressway runs from Lianyungang, Jiangsu, China, on the Yellow Sea, to Khorgas on the Khazakastan Border.

(ii) **G3011 Expressway**. This expressway will connect Liuyuan in the Gansu Province with Golmud, 670 km away. Golmud has also been connected with Mangya, 452 km to the WNW.

(iii) **G314 National Highway**. It runs from the Khunjerab Pass through Kashgar to Aksu to Urumqi, a distance of 1948 km.

(iv) **G315 National Highway**. It begins at Turugart, on the Khyrgistan border and connects Kashgar through Hotan with Xining over a distance of 1903 km. At Turugart Pass, an inland port has been constructed to ease trade.

(v) **G580 National Highway**. The G580 Highway from Aksu to Kangxiwar on the G219 Highway near Aksai Chin will open in 2022. The 190 km distance from Hotan to Kangxiwar is still under construction. The Hindutash mountains will be crossed by a tunnel which is under construction. This route could be the one that the G695 National Highway will follow from Mazha into the Aksai Chin.

(vi) **G581 National Highway** 245 km long, it connects Kashgar with Erkeshtam in Khyrgistan, the second border crossing used for trade. Erkeshtam (Simuhana in China) is 165 km from Turugart. The European Route E60, originating from Brest, France, ends at Erkeshtam. (“Erkeshtam - Wikipedia”)

12.2.6 The Northern (Urumqi Xining) Sub Sector

14. Urumqi is connected with Xining by the High-Speed Lanzhou Xingjian High-Speed Railway Line. Xining Airport is at 2170 m elevation, 30 km to the East of Xining town. It has a single asphalt runway 3800 m long. The G 213 and G 214 National Highways connect Xining with Chengdu and onto the Laos Border at Mohan (11788 km) and Lancang (2023 km), respectively. Xining sits astride the G 109 Highway from Beijing to Lhasa.

12.2.7 The Northern Approach to Lhasa Sub Sector

15. Xining, the capital city of the Qinghai Province, has always been the Northern Entrance into Tibet. Xining falls on the major Highways from Kashgar and Dali and sits astride the Beijing Lhasa Highway. The Xining, Nagqu, Chamdo and Lhasa Airports have already been discussed.

(a) **Rail**.

(i) **Xining Golmud Railway Line.** 814 km. Constructed as an extension of theLanzhou Xiangjing Railway Line, it was completed in 1984. The 4,010 m New Guanjiao Tunnel is the longest tunnel between Xining and Golmud.

(ii) **The Golmud (Gormo) Lhasa Railway Line**. 1142 km long, it was inaugurated on July 01 2006. The line passes through the Tanggula Pass (5072 m), with the Tanggula Railway Station (5068 m) being the highest railway station on this stretch. The 3,345 m Yangbajing tunnel is the longest tunnel between Golmud and Lhasa. More than 960 km, over 80% of the Golmud–Lhasa section, is at an elevation of more than 4,000 m (13,123 ft). There are 675 bridges, totalling 159.88 km. About 550 km of track is laid on Permafrost. Reports were received of cracks appearing on the pillars of the railway line. The melting of the Permafrost on which these pillars were built caused the cracks.

(iii) **The Lhasa Zhangmu RailwayLine** This line was extended to Shigatse in 2014. It will be further extended to Yatung, Zhangmu (Kodari) and Burang. These extensions have been mentioned above.

(iv) **The Lhasa Chengdu Railway Line**. It is under construction. The stretch up to Nyingchi opened for traffic in Jun 2021. This operationalisation of traffic has been mentioned above

(v) **The Golmud Chengdu Railway Line**. According to Chinese State media, a railway line is planned from Golmud to Chengdu through Kyegodu in Qinghai and Ngaba (Ngawa) in Northwestern Sichuan. A new railway line will connect Kyegudo with Chamdo. No information regarding these railway lines is available.

(b) **Roads**.

(i) **G6 Beijing Lhasa Expressway**. 3710 km long, it passes through the major cities of Zhangjiakou, Jining District, Hohhot, Bayannur, Wuhai, Yichuan, Wuzhong, Baiyin, Lanzhou, Xining Golmud and Yangbaijan. The expressway is fully open up to Golmud. The Nagqu- Yangbaijan- Lhasa stretch has also opened. Portions of this Road between Golmud and Nagqu are yet to open. On August 21 2022, the Nagqu-Yangbajing section of the G6 Beijing-Tibet Expressway opened for trial operation. The total length of this section is about

226.937 kilometres (Naqu South Interchange to Yangbajing Interchange, Sambasa Village, Yangbajing Town, Dangxiong County ("[CHN] China | road infrastructure • 中国高速 | Page 224 | SkyscraperCity Forum")

(ii) **G109 National Highway**. This Highway from Beijing connects Xining and Lhasa over 1912 km.

(iii) **S202 Provincial Highway**. This 175 km road provides a parallel route to the G 109 from Shenquka through Danquiong, Quilong, and Lamu along the Lhasa River to Lhasa.

(iv) **S305 Provincial Highway**. An asphalted Provincial Highway, it bifurcates from the G 109 South of Nagqu to the East through the Lhari County and runs 413 km to connect up with the G318 Highway at Yigong. Its highest point is at Aba La, 5190 m.

(iv) **S303 Provincial Highway**. It runs from the G317 Highway Southeastwards from the East of Botuocun and joins the G214 Highway near Suonacun, a few km North of the Chamdo Airport. A 709 km long highway, it runs almost entirely at an elevation of 4200 m. Its highest point is at 5086 m. Partly asphalted, it is only a dirt road in many places. In two places near Lohrong County, prominent military complexes are seen.

(vi) **S301 Provincial Highway**. It emanates Westwards from the G109 National Highway from Northwest of Nagqu, through Nyima, Xungba township to Ngari joining the G219 Highway. 1374 km long, it runs at an average of 4500 m elevation, with the highest point at 5004 m.

(xi) **G216 National Highway**. It runs 857 km Southwards from Almaty (Hongshanzui Port) through Urumqi to Baluntai, where it joins the G 218 Highway. In the National Highway Network Planning (2013-2030), this Highway has been extended through Luntai County, Minfeng County and Gerze County (on the S301 Provincial Highway) to Kyirong (Kodari) on the Nepal Border. Its exact length is not yet known. This Highway, also mentioned above, will have significant strategic ramifications for India.

(xii) **G562 National Highway**. Another parallel road planned is believed to be the G 562, running from Baingoin County near Nagqu to Yatung from S 301 Provincial Highway (or from the G 126 Highway) parallel (?) to the S203 and S204 Provincial Highways. Mentioned earlier too.

(d) **Logistics Centre**. A 900 m long covered railway siding exists near the Nagqu Railway Station, covered with a concrete roof. Similar to this, about a km to the South West are four concreted sidings, each approximately 800 m long, probably for storage.

(e) **Gormo Lhasa Ppl**. The 1153 km long Gormo Lhasa Pipeline became commercial in 1990. The pipeline, transporting mainly diesel, motor and aviation fuels at ambient temperatures, is 159 mm in diameter, has a wall thickness of 6 mm and was buried in a trench at a nominal depth of between 1.2 and 1.4 m. It has a low oil flow (0.6 to 1) and is prone to frequent breakdowns. Internal and external corrosion has also affected the use of the pipeline. Oil transportation is stopped between November and April to avoid pipeline freezing. A large logistics Centre exists North of Nagqu, where we can see a prominent Petroleum Pipeline Complex.

12.2.8 Terrain Analysis

16. China is investing heavily in infrastructure, be it airports, rail and roads. To their credit, they have used innovation and invention extensively to overcome the extreme difficulties of terrain and altitude. From the details above, China has made significant progress in creating this infrastructure, even in the most difficult mountainous regions. Investment in Infrastructure in Tibet by the Chinese Government – railways, airfields and roads – has served the dual purpose of facilitating an unprecedented tourism boom, expanding mining of Tibet's resources and serving China's strategic and military objectives. The Gormo Lhasa pipeline and the planned mega hydroelectric power project on the Yarlung Tsangpo have or will further revitalise the fledgling economy of Tibet while simultaneously improving the strategic utilisation of its resources jointly by the civil Government and the PLA. This article attempts to enumerate these infrastructures in Tibet to benefit the ordinary reader and assist planners in tackling the seeming military might of China.
17. **Air**. All available airports show their elevation and runway length. China has built a No of Airfields close to our border. The Chinese Government aims to have an airport within 90 mins travelling time from home for every citizen. However, without a strategic aim, China will not construct airports at Burang opposite Mana Pass, Lhatse near Shigatse, or Lhunzhe near Nyingchi. All airports on the Tibetan Plateau are at heights close to 4000m, and even with extended runways of 5000 m, will not be of adequate efficacy for their operational use. For every 1000m increase in elevation, there will be a 20% reduction in the Maximum Take Off Weight (MTOW) and will need to increase the length of runways. Aircraft operating from airports at 4000 m will operate at 40% efficacy. Hotan airport, North of Tibet at 1424 m elevation with a 3200 m long runway, has another runway under construction. It is a major PLAAF Airbase with fighter aircraft, AEW aircraft, helicopters and drones seen on the tarmac. A large no of aircraft, helicopters and drones have also been seen at the Lhasa Gonggar Airport, but its elevation restricts usability. At Nyingchi Airport, a new taxiway built parallel to the present runway gives China two runways to operate on close to the Indian Border. A new runway has also been constructed to the West of the existing runway at Shigatse. These new constructions began after the Galwan Clash, indicating how much Galwan had rattled the Chinese. At 648 m elevation, Urumqi is being developed as a major Airport with three runways, which is approximately 1342 km from Leh Airport. A high-altitude airport recently opened at Tashkurgan on the CPEC Highway needs close observation. Any conventional air attack on Indian airfields from airfields further away, including Hotan, Xining and Urumqi, will necessitate air-to-air refuelling somewhere over Central Tibet. China has also developed secret landing grounds like the one East of Kongka Dzong and other regular unannounced Airports, but their use may not support sustained operations. Also, we cannot rule out the use of Airfields in Myanmar for the Eastern Sector and Skardu, Chilas and Gilgit in Pakistan for our Western Sector. Conversely, the airfields in Myanmar could be used by us too. Drones can be deployed at many of these forward airfields. Drone swarms can be employed from any good concreted areas along our International Border/LAC. However, it is not easy for him to employ his aircraft for conventional air warfare. The need for close, constant surveillance by every means possible is imperative. The tabulation below will provide a ready reckoner. The data of the Xining and Lanzhou airports have been included in the table though they are over 1200 km from Indian airports. It merits mention

that data on the airports is not easily obtainable. [A lot of the information was obtained through Aircalculator.com.]

18. **Rail**. An extensive railway network has begun taking shape in Tibet. Each train on the Golmud Lhasa Line with 20 coaches capable of transporting 60 tonnes carries 1200 tons. Ten such trains are required for the resupply of one Chinese Division for five days. Even if one Division moves in into Tibet in two days, sustenance is not easy logistically. Of course, once the Kashgar – Hotan – Ngari – Shigatse and the Ya'an – Nyingchi Railway Lines are ready, the capability of rail replenishment will double. This completion is unlikely before 2030. Accordingly, we need to work out the countermeasures to overcome this advantage that the Chinese will have. Another point that needs significant consideration is the Shigatse Burang Railway Line terminating opposite Pithoragarh, only 25 km from Mana Pass. Is the Chinese aim to create unrest, maybe with Nepal's help over the Lipu Lekh Imbroglio? The tabulation below will provide a ready reckoner.
19. **Roads**. China is continuing to create an excellent road infrastructure Network in Tibet. These roads will increase his tactical and logistics capability opposite our forward areas. We have seen in Sikkim that he had surreptitiously built a No of Roads towards the International Border. Close surveillance is necessary on these roads. Interdiction Points on all roads must be preplanned when a sudden need arises. Passes and tunnels need particularly be known and covered. We may not be free to react in a future conflict if we do not collate the information today. The progress of the construction of the North-South G 216, G 562 and G695 Highways needs special attention. The tabulation below will provide a ready reckoner.
20. **Logistics Centres and Missile Bases**. China has created a No of Logistics Centres along the Highways. These need to be mapped and recorded. Monitoring these Logistics Centres will provide an Early Warning of his intentions. The DF 21, 31 and 31A Missiles can quickly be fired from trains or Vehicle trailers. However, their bases will again give us an early idea about his intentions if identified.
21. **The Gas Pipeline Project**. The Gormo Lhasa pipeline project has not been a total success. However, some amount of fuel is being pumped in. The pipeline can move fuel to Yangbajain and Lhasa to move it forward for use by the PLA. Its usage needs monitoring.
22. **The 300 Million Megawatt Hydro Power Project**. The project, projected to generate three times the electricity generated by the Three Gorges Dam on the Yangtze Kiang, opposite Tuting and Geling, has major strategic implications for India. If he uses it to release water to our disadvantage, we will need to control this water weapon by having a series of dams to control any such release. If the main dam creates a large water reservoir which could drown a large area through which new roads and railways are being constructed, China may have to reconsider its infrastructure projects in the Southern Sub Sector. The plan is to build smaller dams to avoid this possibility. A rethink on this by us may also be needed. We also need to cater for the eventuality of the Dams on the Yarlung Tsangpo failing and being forced to manage the sudden flooding. The large dam planned near Yinkiong for the Upper Siang Project and Pasighat for the Lower Siang Project needs to be sped up so that we can control the flooding of the lower reaches.

23. **Communication through OFC Cables**. It has also been learnt that China has laid Optical Fibre Cables (OFC) through its 'China's Advanced Info-Optical Network (CAINONET) project' to more than 90 per cent of its Villages. It may be helpful to monitor this network, particularly at the Junction Points. All border posts along the LAC/International Border have also been provided connectivity.

12.2.9 Conclusion

24. The Chinese have reacted with alacrity to the Galwan Clash, rapidly expanding their road, rail and air infrastructure. This paper seeks to provide a one-stop data solution on the entire gamut of infrastructure development in Tibet. It also records what needs to be done to prevent being surprised by the Chinese. The infrastructure development carried out by the Chinese is difficult to authenticate. However, the available details indicate a need for better management of our intelligence to monitor Chinese activity. The available details will help generate better discussion leading to the requisite planning required to counter the PLA and Chinese intentions. We also need to re-evolve our plans and preparations, which we are sure is happening.

12.3 Airports in West China Close to India

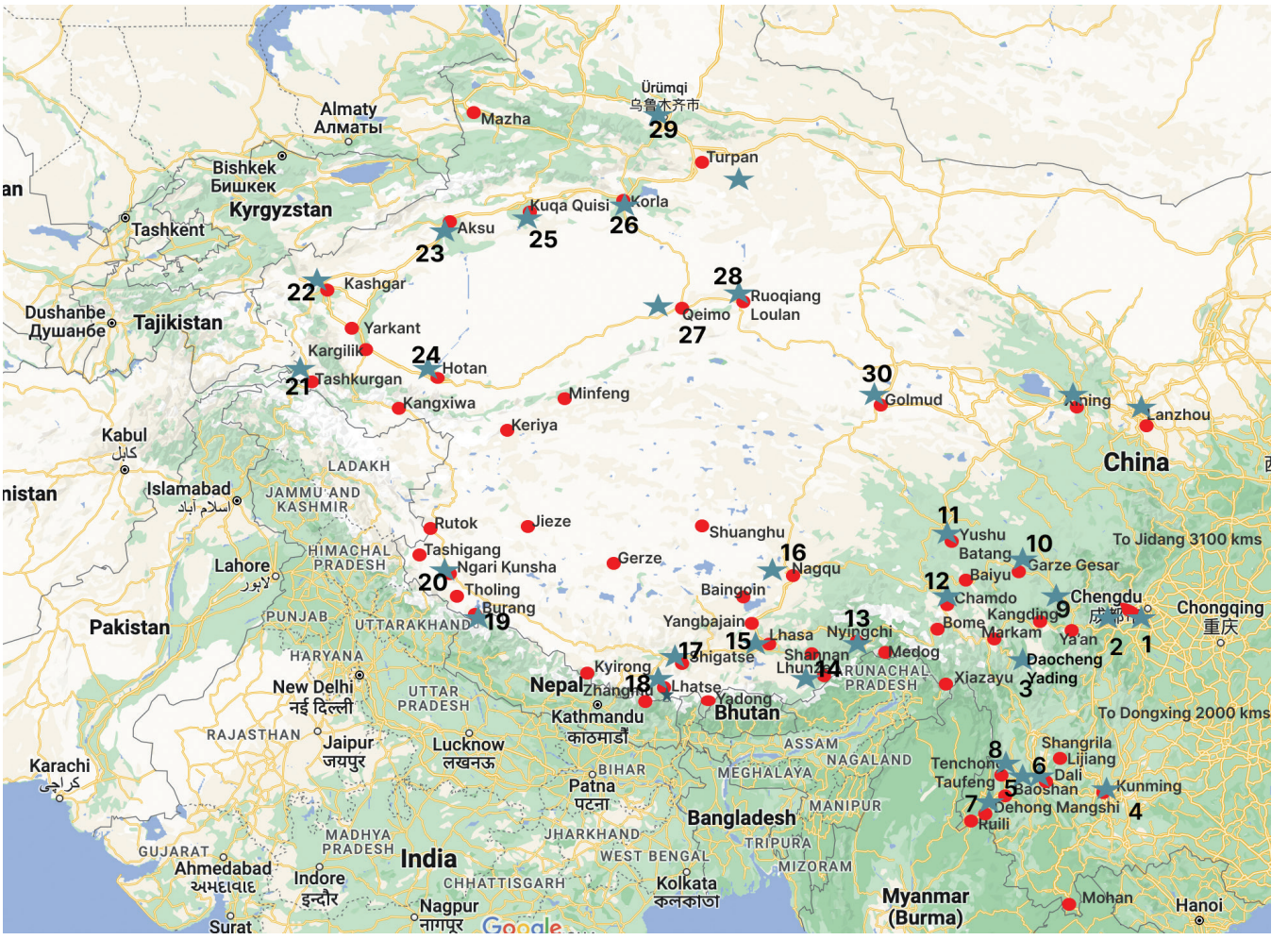


Table 12.1: AIRPORTS

Ser	Location	No of Runways	Elevation (m)	Length (m)	Airport in China	Nearest Airport in India	Remarks
1	Chengdu Shuangliu International Airport	2	495	3600 (both)	Chamdo, 654 km West	Dibrugarh 930 km	19 km West of Chengdu
2	Chengdu Tianfu International Airport	**3** (2 North South and 1 East West) 6 runways planned	440	4000m 3200m And 3800m		Dibrugarh 960 km	70 km SE of Chengdu
3	Daocheng Yading Airport (DCY)	1	4411	4200	Chengdu 400 km	Tezu 424 km WSW	Not seen on Google Maps.
4	Kunming	2	2100	4000 and 4500	Chengdu 617 km	Dibrugarh 831 km	
5	Baoshan	1	1662	2400	Kunming 379 km	Tezu 447 km NW	
6	Dali	1	2149	2500	Kunming 269 km	Dibrugarh 564 km NW	
7	Dehong Mangshi (Near Ruili)	1	877	2600	Kunming 449 km	Dibrugarh 492 km	on Myanmar Border
8	Tengchong Tuofeng	1	1905	2350	Kunming 447 km	Dibrugarh 443km	
9	Kangding	1	4280	4000	Chengdu 300 km	Dibrugarh 719 km	
10	Garze Gesar (Sichuan)	1	4068	4000	Chengdu 446 km	Dibrugarh 870 km	Not seen on Google Maps
11	Yushu Batang	1	3890	3800	Chamdo, 254 km	Dibrugarh, 626 km	An old runway, disused, is visible to the East of the present Runway.
12	Chamdo Bamda	1	4334	4500 (old 5500 m runway is closed)	Nyingchi 301 km	Dibrugarh 397 km	
13	Nyingchi (Linzhi) Mainling Nyingchi Heliport	1	2949	3000	Lhasa Gonggar 331 km	Dibrugarh 213 km	New parallel taxiway can be used as a runway 7 Mi 17 Pads
14	Shannan Longsi Airport at Lhunze	1	3980	4500	Lhasa Gonggar 100 km	Dibrugarh 180 km	Class 4C airport Construction near completion
15	Lhasa Gonggar	2	3570	4000 (both)	Shigatse 155 km	Bagdogra 386 km	The 4500 m long Lhasa Damxung is now a PLAAF Base
16	Nagqu Dagring	1	4436	4500	Lhasa Gonggar 40 km	Bagdogra 420 km	

Ser	Location	No of Runways	Elevation (m)	Length (m)	Airport in China	Nearest Airport in India	Remarks
17	Shigatse Peace	**2**	3782	5000 3000	Ngari Gunsa 936 km West	Bagdogra 312 km	The new 3000 m runway at the West End of the existing runway was constructed post the Doklam Crisis
18	Lhatse/ Tingri Near Mt Everest and Kodari in Nepal	1	4300		Shigatse, 200 km East		Construction near completion Near Mt Everest and Kodari in Nepal
19	Ngari Burang (Seen only on Mapcarta)	1	4250	4500		Delhi, 400 km	Construction was to be completed in end 2021(?). Near India Nepal China Tri Junction
20	Ngari Gunsa	1	4274	4500	Kashgar 902 km NNW	Leh 324 km.	
21	Tashkurgan	1	3258	3800	Kashgar 180 km	Leh 400 km	Opened on 30 Jun 2022
22	Kashgar	1	1380	3200	Hotan 436 km SE	Leh 616 km SSE	
23	Aksu	1	1163	2400	Kuqa Guici 230 km East	Leh 828 km West	
24	Hotan	1 1 under construction/ Completed	1424	3200	Kashgar 436 km NW	Leh 386 km West	Appears to be a maj PLAAF Base
25	Qiemo Yudu	1	1252	2800	Hotan 514 km WSW	Leh, 844 km WSW	Old Airport closed in 2011.
26	Kuqa Quisi	1	1074	2600	Aksu 230 km WSW	Leh 1000 km West	
27	Korla Licheng	1	927	2780	Aksu 480 km West	Leh, 900 km SW	
28	Ruoqiang Loulan	1	890 m	2800	Qiemo 200 km WSW	Leh, 1000 km WSW	
29	Urumqui	3	648	3600, 3600 and 3200	Turpan 163 km SE	Leh 1382 km SW	Maj PLAAF Base
30	Golmud	1	2845	4800	Nyingchi Mainling 790 km South	Dibrugarh 992 km South	
31	Xining Caojiabao	1	2170	3800	Lanzhou, 145 km East	Dibrugarh, 1203 km SW	Asphalt runway
32	Lanzhou Zhongchuan	1	1947	3600, 4000*, 4000*	Xining, 145 km West	Dibrugarh, 1289 km SSW	Asphalt runway, Two new runways 4000m each are under construction from 2019

12.4 Tibet: Railways

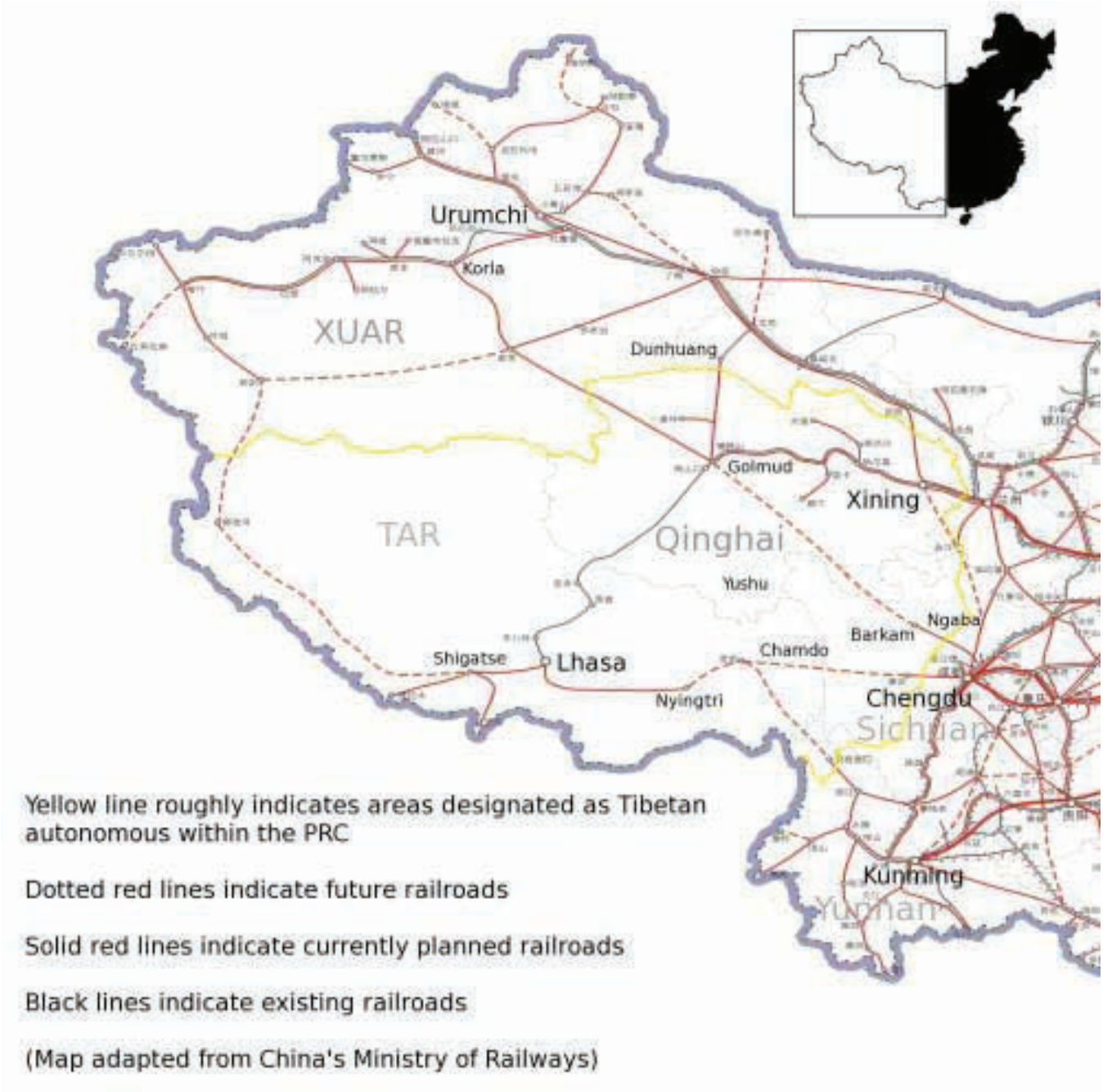


Figure 12.4: Courtesy: International Campaign for Tibet quoting ("*During the 12th Five-Year Plan a strategic rail network to be built through Tibet, Xinjiang*," March 7, 2011, Xinhua [in Chinese].

Table 12.2: RAILWAY LINES TIBET

SER	FROM	TO	DISTANCE km	COMPLETED	
1	Xining	Golmud	814	Yes	
2	Golmud	Lhasa	1142	Yes	
3	Lhasa	Shigatse	253	Yes	
4	Shigatse	Kyirong	556	Planned	
5	Kyirong	Sankhu (Kathmandu)	72	Planned	
6	Chengdu	Ya'an	94	Yes	
7	Ya'an	Nyingchi	1011	No	
8	Nyingchi	Lhasa	435	Yes	
9	Shigatse	Yatung	302	Planned	
10	Shigatse	Burang	984	Planned	
11	Shigatse	Ngari	NK	Planned	
12	Ngari	Hotan	NK	Planned	
13	Urumqi	Aksu	984	Yes	Double Line.
14	Aksu	Kashgar	462	Yes	Single Line
15	Kashgar	Hotan	488		Single Line
16	Lanzhou	Urumqi/	2360	Yes	High Speed
		Alshankou			Connects to Rotterdam
17	Golmud	Chengdu		Planned	
18	Yushu	Chamdo		Planned	

12.5 Roads In Tibet

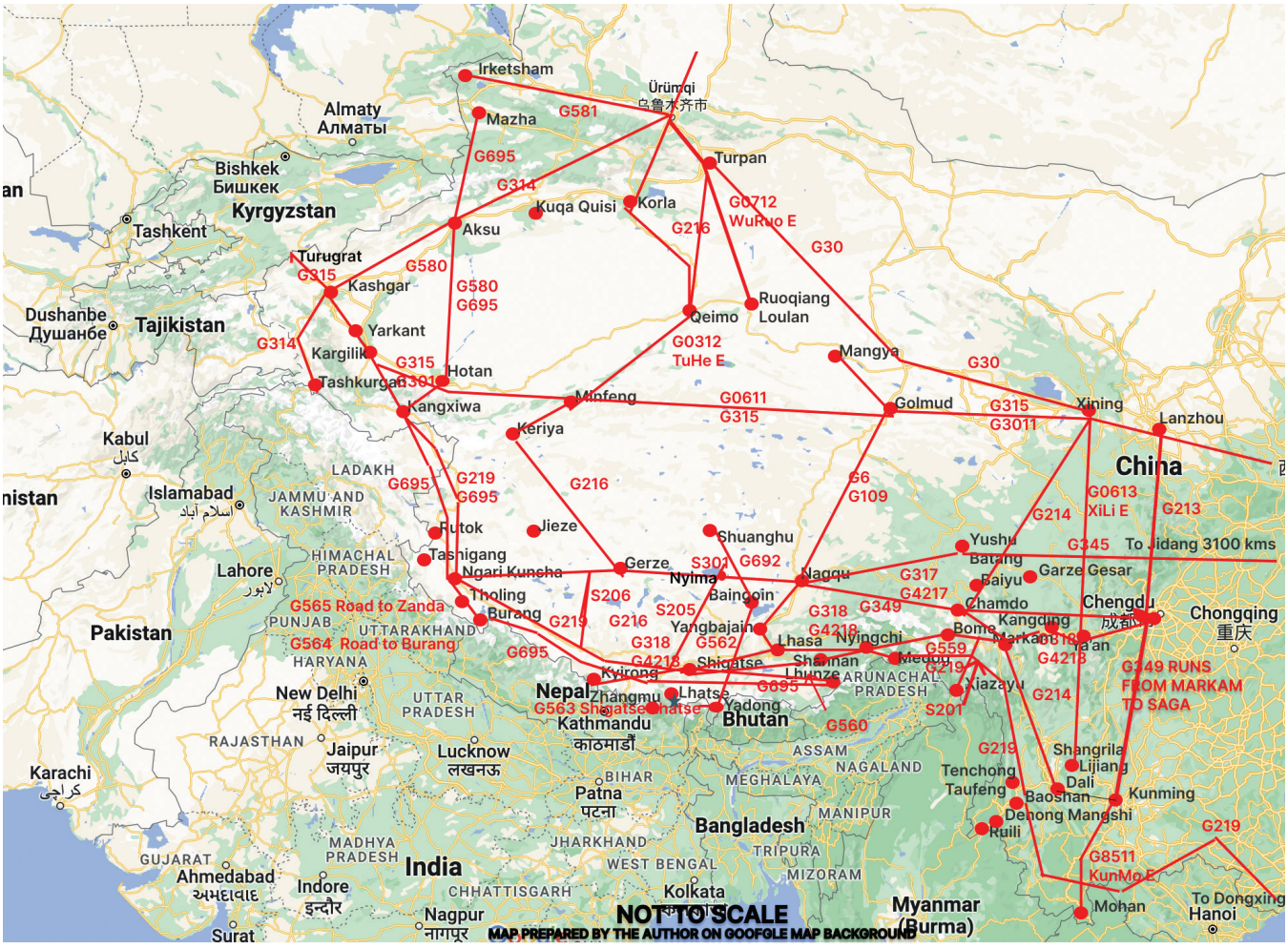


Table 12.3: EXPRESS WAYS

SER	ROAD NO	FROM	TO	DISTANCE km	COMMENTS
1	G6	Beijing	Lhasa	3710	Portions near Nagqu is yet incomplete
2	G4217	Chengdu	Chamdo	1200	Rongchang Expressway. 2x3Lane. 217 km to Ma'erkang completed. Will be extended to Lhasa
3	G4218	Ya'an	Yecheng	3500	Yakang or Yaye Expressway Completed from Ya'an to Kangding. Construction from Lhasa to Shigatse is in progress

Table 12.4: National and Provincial Highways (As related to Tibet)

SER	ROAD NO	FROM	TO	DISTANCE km	COMMENTS
4	G214	Dali	Mangkang (Markham)	724	Joins G318 at Markham and runs together till Bungdazhen South of Chamdo Airport
5	G318	Chengdu	Zhangmu	5476	Shanghai to Zhangmu
6	Unnamed Highway	Bome County	Medog		
7	G219	Yecheng	Dongxing	10000	Longest highway. First highway through Aksai Chin. Runs through Medog, opposite Gelling, Zayu and all along the SE and Southern border of China
8	G 559	Medog	Zayu	400	Unknown Route
9	G560	Lhasa Nyingchi	Lhunze	325	Near Sela Pass
10	G695	Mazha	Lhunze	3500	Introduced in 2022. Planned to run West of G219.
11	S201	Rawu	Xiazayu	226	Connects G318 with Area opposite Kibithu
12	G317	Chengdu	Nagqu	2012	Joins G6 and G 109 Highways at Nagqu.
13	G345	Jiangsu	Nagqu	3000	
14	G349	Markam	Saga	1899	Follows alignment of S303 and S 301
15	S309	Dagaxiang	Gyantse	190	Leaves from G318
16	S304	Yangbaijan	Dazhuka	170	Bypasses Lhasa. Not on map
17	G562	Bangoin	Yatung	709	S203 and S204 merged to form G562
18	G216	Hongshanzui port, *Fuhai, XJ*	Port of *Gyirong, XZ*	2763	Strategically an important Highway.
19	S205	Sansangzhen	Nyima	378	Connecting G219 and S 301
20	S206	Dangbo	Dongcuo	401	Connecting G219 and S 301
21	G563	Shigatse	Tingri	35	
22	G564	Manasarover	Burang	100	Opposite Mana Pass
23	G565	Manasarover	Zanda/ Tholing	135	Opposite Mana Pass
24	Connecting Military Roads	Yatung Valley	to IB		Many roads recently concreted.
25	Mil Rd	Rutog County	Spangur Tso	25	
26	Mil Rd	Anglacuo Lake	Pangong Tso North Bank	80	
27	G30	Lianyungang	Khorgas	4243	From Jiangsu on the Yellow Sea to Khazhakastan Border
28	G3011	Liuyaun	Golmud	670	Further connected to Mangya 452 km WNW
29	G314	Urumqi	Khunjerab Pass	1948	Through Aksu and Kashgar

SER	ROAD NO	FROM	TO	DISTANCE km	COMMENTS
30	G315	Turugart	Xining	1948	Through Kashgar and Hotan
31	G580	Aksu	Kangxiwar	787	Connecting road to G219 Highway near Aksai Chin
32	G581	Kashgar	Erkeshtam	245	Erkeshtam is called Simhuana in China. Connects with European Roue E60 originating from Brest in France.
33	G109	Beijing	Lhasa	3901	
34	S202	Shenquka	Lhasa	175	Runs Parallel to G109 Not on map
35	S305	Nagqu	Yigong	413	Connects G109 with G318 Runs through Lhari County. Not on map
36	S303	Botuocun (G317)	Suanocun (G214)	709	Partly asphalted. Near Lohrong County two prominent Military complexes are seen. Not on map
37	S301	Nagqu	Ngari	1374	Runs through Nyima and Xungba on the Central Highlands of Tibet.
38	S203	Shigatse	Namling		Connecting road between G219 and S301 crosses elevations of 4500m
39	S305	Nagqu	Yigong	413	Runs through Lhari County. Not on map
40	G109	Beijing	Lhasa	3700	Xining to Lhasa is 1912 km
41	G213	Xining	Mohan (Laos Border)	11788	Passes through Chengdu
42	G214	Xining	Lacang	2023	Passes through Chengdu

12.6 Photographs

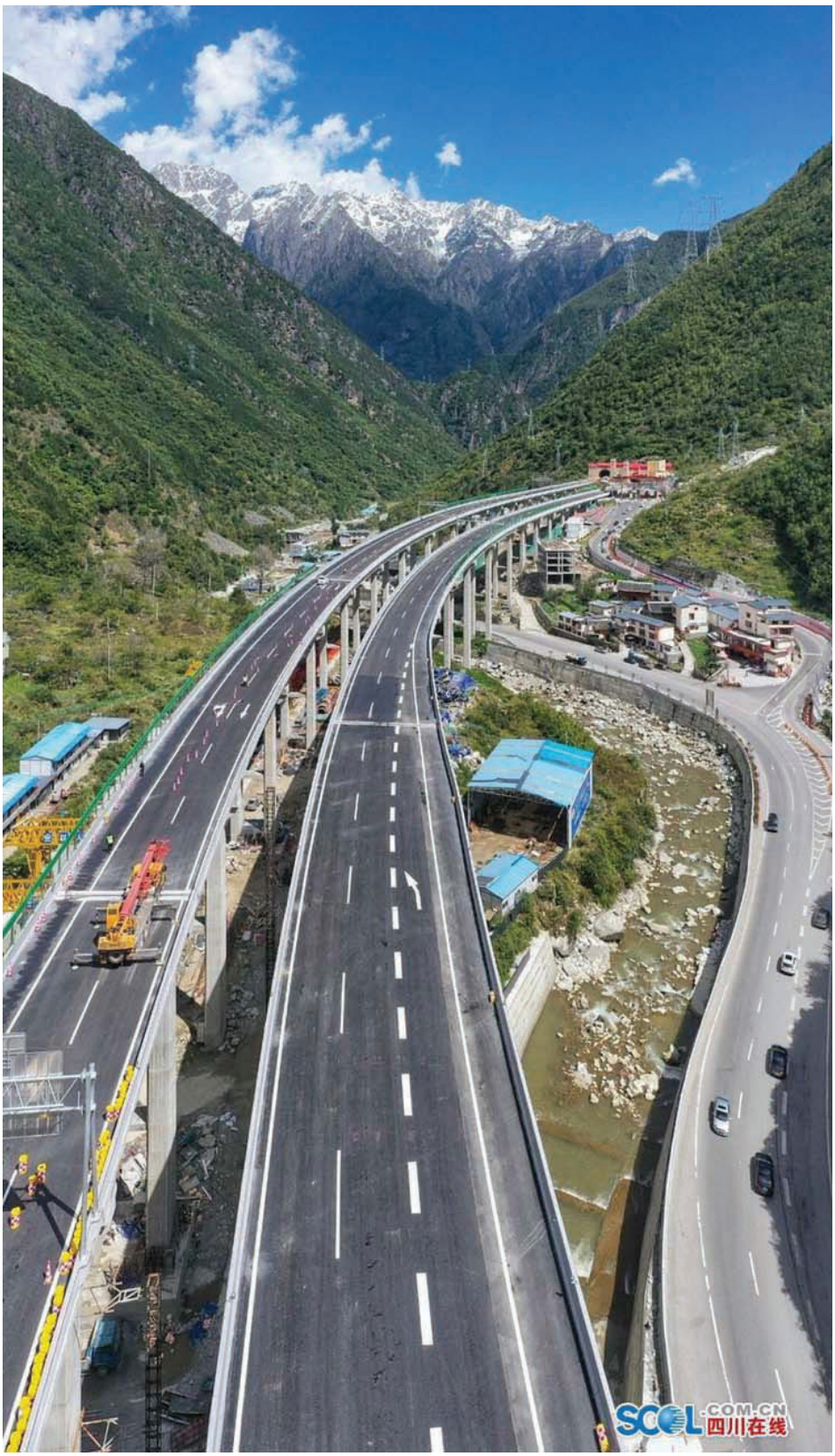


Figure 12.5: The G 4218 YaYe (Ya'an Yecheng) Express Highway at Kangding with the G 318 passing below:-



Figure 12.6: A view of the G4218 near the Dadu River (Courtesy the Xinhua News Agency reporter Jiang Hongjing).



Figure 12.7: The World's highest tunnel, the Milashan Tunnel on the Lhasa Linzhi (Nyingchi) stretch of the G 4218 National Highway was opened for traffic on 26 Apr 2019. It is at an elevation of 4774 m. Each tube is 5727m and 5720m long.



Figure 12.8: A bridge over the Dadu River(Courtesy the Xinhua News Agency reporter Jiang Hongjing).



Figure 12.9: The Xingkang Jinsha River Bridge near Kangding on the G4218 YaYe Expressway



Figure 12.10: A view of the G4218 Yakang Expressway and the G318 Highway near Kangding.
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Figure 12.11: The Expressway to Lhasa Airport from Lhasa over the Yarlung Tsangpo River
Source: By Chlich - Own work, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=52372670

Section 13

WHO "DERAILED" PAKISTAN?

Col Nilesh Kunwar



13.1 Introduction

In its 75 years, Pakistan has been under military coups thrice under four different military rulers. Though constitutionally a democratic parliamentary republic with its political system based on an elected form of governance, Pakistan has, over the years, incessantly fallen under martial law or behind the scene manipulation by the Pakistan army.

It is essential to contemplate that no generation in Pakistan has seen a completely democratic government. The military has always been involved in governance. The people of Pakistan have learnt to accept these interferences and control in their Democracy. The involvement of the Pakistan military has developed into such a fine art that Pakistanis have almost stopped protesting on discontentment regarding the runaway inflation and hike in food and essential utilities.

Ever since its inception, the Pakistan army has driven home the message that it is the final custodian of stability under the so-called 'doctrine of necessity that denigrates politicians as corrupt, self-serving, and

incapable of providing good governance! Pakistan's Army cunningly managed to acquire wide-ranging extra-constitutional powers and utilised this excessive power to exercise control over the entire country. So, suddenly giving it up for a system like 'democracy', which is so utopian to them, is, understandably, out of the question.

In an interview given to BBC Urdu in August 2017, Pakistan's former President and ex-army chief Gen Pervez Musharraf maintained that "Military rule has always brought the country back on track, whereas civilian governments have always derailed it." However, despite this strong assertion, it cannot be said that military rule in Pakistan has brought about any corrective measures or effective governance.

Accordingly, the central theme of this paper is to examine, historically the omnipotent question-who is responsible for the current state of Pakistan.

13.2 Saving Pakistan

There can be no two views that Musharraf's outlandish observation is downright incredulous. Nevertheless, it is a highly pertinent observation as it aptly reflects Rawalpindi's enduring view that politicians are incapable of governing Pakistan.

The Pakistan army had ruled the country for the better part and manipulated elected governments when not in power. Hence, Rawalpindi's perception regarding the professional incompetence of Pakistan's political class has not been drawn from a dispassionate or empirical assessment of their demonstrated performance but is entirely based on the military's prejudiced mindset. So, before analysing the role played by Rawalpindi in bringing "the country back on track", as claimed by Musharraf, it would be worthwhile to recall how Democracy was effectively emasculated in Pakistan briefly.

13.3 The 'Raj' Hangover

Pakistan Army plays a significant role in the polity of the country. Ayesha Siddiqa mentions that the Pakistan "military often justifies its intrusion in the economy as part of the overall cost of national security…project themselves as saviours: protecting the state against corrupt politicians and other exploiters… The general public is convinced that the defence budgetary allocation and the 'internal economy' are a small price to pay for guaranteeing security." (Siddiqa, 2017, p. 15).

Since the 1940s, heightened clamour for independence created strong 'anti-native' sentiments and immense aversion for politicians in the minds of the British ruling undivided India. Unfortunately, rather than dying a natural death after their departure in 1947, this parochial outlook somehow persisted in the minds of many Pakistan army officers holding key positions in the administration and the defence forces. Resultantly, they instinctively looked down upon politicians with utter disdain (Rais, 2017, p. 86). Prof. Steven I. Wilkinson highlights that Pakistan had a completely different trajectory to India regarding civil-military relations (Wilkinson, 2016, p. Ch 6). He highlights that a few civilian, military and political leaders behind closed doors made most decisions in Pakistan. The average politician and bureaucrat appeared enfeebled (Wilkinson, 2016, pp. 194-195).

Former army officer Maj Gen Iskander Mirza, who, after quitting the British Army, had joined the Indian Political Service and held various administrative posts before becoming the first President of Pakistan, was one such person. This former Royal Military Academy Sandhurst alumnus is described as "A Moslem who drinks whisky, smokes, shoots and rides, … [who] has always been blunt about his aristocratic creed [sic]." Mirza had no qualms about admitting that he regarded most politicians as "crooks and scalawags" and defended the imposition of martial law by saying, "I am certain it could never have been a fair, honest [Presidential] election…".

Besides demeaning politicians, Mirza did not even spare his countrymen, as is evident from his insensitive remark that "Democracy requires breeding. These illiterate peasants certainly know less about running a country than I do…". Equally galling was his attempt to justify the imposition of martial law and take the high moral ground by saying, "There has to be someone to prevent the people from destroying themselves." (Time Magazine, 1958).

Writing on the history of Pakistan politics, the Director of Initiative on the Future of India and South Asia, Aparna Pande, notes that 'Between 1951 and 1958, Pakistan had seven civilian prime ministers but only one governor general—Ghulam Muhammad [1951-56]—and one President—Iskander Mirza [1956-58], both of whom were former government officials. Each of the seven prime ministers, while leaders in their own right, were never allowed to stay in power long enough to pose a threat to either the military or the Governor General/President." (Pande, 2012).

13.4 Democratic Experiments

The Pakistan Army has undertaken experiments in providing democratic governance to the country. They prioritised development over Democracy (Rais, 2017, p. 86).

"Controlled Democracy:" "Though overthrown and exiled by his protégé Gen [later Field Marshal] Ayub Khan, Mirza gave Pakistan Army the concept of "controlled democracy," which thrives even today. To put it simply, "controlled democracy" in Pakistan's context can be defined as a hybrid system that presupposes that governance is too important a matter to be left to politicians! However, while Mirza euphemistically put across the notion of the Army ruling Pakistan, Ayub Khan was downright blunt in championing army rule. He contended that since "… the country was going to the dogs … I said to the President [Mirza]: 'Are you going to act? If you do not, which Heaven forbid, we [Pakistan army] shall force a change.' "(Time Magazine, 1958).

"Basic Democracies": While Musharraf may maintain that the Army puts "the country back on track," even a cursory examination debunks his claim. There has long been talked of as a controlled and graduated Democracy (Rais, 2017, p. x). Au contraire, the characteristically obdurate attitude and myopic vision of military dictators have precipitated several crises that continue to haunt the people of Pakistan.

Maj Gen Mirza crushed Democracy even before it could take root in Pakistan by advocating the "Controlled Democracy." His successor Gen Ayub Khan also kept Democracy at bay by introducing a scheme of local government called "Basic Democracies" and enforcing it through the Basic Democracies Order on October 27, 1959. He then cunningly used the 80,000 elected 'Basic Democrats' to legitimise

his dictatorship through a referendum that allowed him to "continue in office as President and to have the authority to frame the future Constitution of Pakistan." (Story of Pakistan, 2003).

13.5 Rawalpindi's Governance Record

Gen Ayub Khan contested the 1965 presidential elections against Fatima Jinnah. Though he emerged victorious, allegations of misuse of government machinery and intelligence agencies and resorting to other illegal actions were rife. However, the most disconcerting part was that to improve his electoral prospects, the military dictator-turned-President even sought help from religious fundamentalists.

A study conducted by staff members and students of Peshawar University mentions that to "remove Miss Fatima Jinnah from his way to the seat of Head of the State," Ayub Khan "… obtained a fatwa from 650 ulemas in the conference held in Lahore and Chairman for the Council of Islamic Ideology. Maulana Badayuni was also present and adopted a resolution stating that: "To assign the office of the Head of the state's office to a female was un-Islamic and haram [prohibited in Islam] besides being destructive of the country and the nation". (Hassan, Jan, Khan, Munir, & Usama, 2021).

Field Marshal Ayub Khan was the one who mainstreamed several debilitating practices that many of his successors in uniform religiously followed. Here are a few examples-

Successive military dictators mainstreamed several debilitating practices:

- Using religious fundamentalism as a handy tool for political expediency.
- Employing Pakistan army's spy agency Inter-Services Intelligence [ISI] to intimidate political opponents and subvert the democratic process.
- Compromising national sovereignty by allowing the Pentagon to establish a base on Pakistani soil for its U2 spy flight programme against the erstwhile USSR.
- Repeatedly violating UN resolutions on Kashmir by attempting to annex J&K through a covert military campaign ['Operation Gibraltar'] that pushed an impoverished Pakistan into the 1965 Indo-Pak war. In 1999, the Pakistan army launched 'Operation Koh-e-Paima' in Kargil and disguised it as the handiwork of so-called Kashmiri "freedom fighters, but its brazen lie was quickly exposed sponsoring a proxy war in Kashmir.

In 1971, Gen Yahya Khan [who succeeded Field Marshal Ayub Khan] deprived the people of what was then known as East Pakistan, their legitimate political aspirations and tried to quell widespread dissent through brute force by perpetrating a genocide of gargantuan proportions under *'Operation Searchlight'* (Dummett, 2011). He even went on to officially declare war against India and in the bargain, not only suffered a crushing defeat, but also ended up losing erstwhile East Pakistan! (Faruqui, 2021).

Six years later, Gen Zia ul Haq overthrew Prime Minister Zulfikar Ali Bhutto's government and went on to institutionalise religious fundamentalism. In return for a great aid programme from Washington, he allowed Pakistan's frontier region to become a veritable breeding ground for terrorists. People in Pakistan are still paying with their lives and limbs for this Faustian deal (Rizvi, 2009, p. 255). Unfortunately, while Pakistan continues to be a victim of terror, an unrepentant Rawalpindi persists in patronising terrorist

groups. Remember former US President Donald Trump's "*They [Pakistan army and ISI] give haven to the terrorists we hunt in Afghanistan …*" tweet of 2018? (BBC, 2018).

Gen Pervez Musharraf, who seized power in 1999, ended up doing great harm to his country and the Army. Pulitzer Prize-winning journalist Mark Mazzetti reveals how "*ISI and CIA agreed that all drone flights in Pakistan would operate under the CIA's covert action authority. This agreement meant the US would never acknowledge the missile strikes. Pakistan would either take credit for individual killings or remain silent"*. His exposé that Musharraf "*did not think it would be difficult to keep up the ruse" and approved this deal, with the utterly demeaning remark that "In Pakistan, things fall out of the sky all the time*" is a damning indictment of his casual attitude towards national concerns (Mazzetti, 2013).

Besides going down in history as the one who surreptitiously sold Pakistan's sovereignty to the US, Musharraf will be remembered more for being the only army chief in modern warfare who abandoned his own dead soldiers killed during the Kargil war of 1999 (Zehra, 2018, p. 182).

13.6 Pakistan Army's Behind the Scene Manipulations

Even when it was not ruling Pakistan, the Army has been complicit in manipulating domestic and international political scenes with the finesse of an adroit puppeteer. An example was the removal of Benazir Bhutto as Prime Minister in 1990. Army Chief Gen Aslam Beg and the ISI Chief Lt Gen Asad Durrani obtained the equivalent of US $ 1 Million from a private bank to execute the removal of this civilian government (Siddiqa 2017, p. 112).

In 2012, Yunus Habib, the 90-year-old banker of state-owned Mehran Bank, testified that before the 1990 general elections, he "*doled out the equivalent of $1.5 million in bank funds to politicians and ISI officers on the orders of then army chief, Gen. Aslam Beg and President Ghulam Ishaq Khan, who was considered close to the army*."

In his testimony, former ISI chief Lt. Gen. Asad Durrani also revealed that "*he was directed by [Pakistan army chief] Beg to distribute the money among politicians from the Islami Jamhoori Ittihad, a right-wing political alliance allegedly set up by the military establishment to counter the PPP. He said Beg told him the money had been collected from the business community in Karachi."*

Pakistan army's interference in domestic affairs is not restricted to only the political arena. In 2018, while hearing the case of a missing person whom an intelligence agency had allegedly abducted, senior Islamabad High Court judge Justice Shaukat Aziz Siddiqui made a scathing remark on the extra-constitutional powers exercised by the Army. He observed that "*It is expected from the top echelon of the army that by appreciating the delicacy, sensitivity and alarming situation, some remedial steps be taken to stop their agencies from interfering into the affairs of other departments and to refrain from assuming the role not assigned [to them] by law*" [Emphasis added] (Dawn News, 2018) (WION News, 2018).

In another shocking incident that exposes the Pakistan army's brazen highhandedness, some army officers on deputation to Rangers [Sindh] and those serving with ISI sector headquarters in Karachi abducted Sindh Inspector General of Police Mushtaq Ahmed Mahar on the night of October 18/19, 2020. They, after that, forced him to sign an order authorising the arrest of retired Capt. Muhammad Safdar

Awan, husband of Maryam Nawaz [and son-in-law of deposed Prime Minister Nawaz Sharif] - from his hotel room in Karachi.

It was only after the entire Sindh Police force came out in a near-open revolt that Rawalpindi was forced to accept the Army's wrongdoings and went on to "*remove the concerned officers from their current assignments for further departmental proceedings*" but instead of pressing criminal charges of abduction and coercion, held them blameworthy for only acting "*rather overzealously*." (Dawn News, 2020).

13.7 Defying UN Sanctions

Unknown to many, during his tenure as Director General of ISI in 1992-93, Lt Gen Javed Nasir had defied the UN arms embargo placed on Bosnia and Herzegovina by secretly airlifting Pakistan-made anti-tank missiles and handing over the same to Bosnian Muslim factions. This handing over is not a mere allegation sans evidence- he had himself admitted to the same while submitting a petition filed by his legal counsel against an English daily which had published a report on his alleged involvement in embezzlement.

Lt Gen Nasir's petition ibid filed in an anti-terrorism court in Lahore on October 23, 2002, mentions that "*despite the UN ban on the supply of arms to the besieged Bosnians, he successfully airlifted sophisticated anti-tank guided missiles which turned the tide in favour of Bosnian Muslims and forced the Serbs to lift the siege, much to the annoyance of the US government.*" [SATP, 2002]. Based on this detailed confession, the International Criminal Tribunal for former Yugoslavia demanded his custody for further investigation in 2011. However, media reports mentioned that "Islamabad had informed the court that the former General had *'lost his memory' following a recent road incident, and was, therefore, unable to face any investigation into the matter*" (The Tribune, 2011).

The moot point here is that if Lt Gen Nasir was medically unfit to depose and defend himself, why did Rawalpindi violate internationally accepted tenets of jurisprudence by not permitting the International Criminal Tribunal for former Yugoslavia to access the former ISI chief and determine his medical condition? Since this accusation directly maligned the international image of the Pakistan army, why did Rawalpindi insist on 'protecting' him through an incredulous 'memory loss' excuse? The answer is simple- allowing the international tribunal access to the delinquent ISI chief would have opened Pandora's box, and many skeletons would have tumbled out of the Pakistan army's cupboard!

13.8 Rawalpindi's 'Jihad'

In matters military, the thumb rule is that even though it may appear to be so, no two situations are ever similar and hence, blindly replicating the template of a successful action can have disastrous results. This replication of a template is more than evident from Gen Zia's ambitious [but self-destructive] plan to duplicate US-sponsored 'jihad' waged by 'mujahideen' against the Soviet Army in Afghanistan in J&K. More than three decades have elapsed since Pakistan-trained terrorists first appeared in Kashmir. However, despite all the bloodshed, Rawalpindi's dream of seizing Kashmir remains unfulfilled and will remain so, given India's firm resolve.

Rawalpindi's paranoid obsession with 'jihad' is no secret. Gen Pervez Musharraf, who has served both as Pakistan army's army chief and the country's President, proudly admitted during an interview that "We poisoned [the minds of] Pakistani civil society for ten years when we fought the Soviets in Afghanistan in the 1980s. It was jihad, and we brought in militants from all over the world, with the West and Pakistan together in the lead role" [Emphasis added] (SPIEGEL International, 2010).

What is intriguing is that when a civilian citizen 'poisons' the mind of civil society in Pakistan, he is hauled up by the Army and charged with treason- but when the military does so, it is patriotism!

Pakistan army also has the dubious distinction of being widely acclaimed by internationally designated terrorists. While Hizbul Mujahideen chief Syed Salahuddin proudly acknowledges his terrorist group's subservience to Rawalpindi by admitting that "*we are fighting Pakistan's war in Kashmir*" (Times of India, 2012). Lashkar-e-Taiba terrorist group co-founder Hafiz Saeed during a TV interview with Channel 24, admitted that "*We support the Pakistani government and Pakistan army in their efforts to help the people of Kashmir. And, we call it jihad.*" (One India, 2015).

Rawalpindi may take solace in its proxy war in J&K through radicalised Islamic terrorists bleeding India. However, it cannot deny that glorifying 'jihad' and patronising terrorist groups are squarely responsible for the bloodshed in Pakistan on a far greater scale.

This bloodshed is precisely what US Secretary of State Hillary Clinton hinted at in 2011 while addressing a joint press conference in Islamabad when she said, "You cannot keep snakes in your backyard and expect them only to bite your neighbours. You know, eventually, those snakes are going to turn on whoever has them in the backyard." (NDTV, 2011). Moreover, with the Afghan Taliban, whom the Pakistan army had hosted for a decade, refusing to crack down on the anti-Pakistan Tehreek-e-Taliban [TTP] terrorist group and outrightly rejecting Islamabad's perception of the Durand Line, her incisive observation has been proved right.

It is the Pakistan army's continuing patronage of designated global terrorists that prompted India's Permanent Representative to the UN, Ambassador T.S. Tirumurti's scathing 2020 tweet that "*Concocting documents and peddling false narratives is not new to Pakistan, host to the world's largest number of UN proscribed terrorists and entities. Remember Abbottabad*!" (The Hindu, 2020). Islamabad did give a rhetorical reply but was factually deficient; it could not counter Tirumirti's seminal observation!

Pakistan army's patronage of the proscribed Haqqani network is globally acknowledged. New York Times has reported that "*After the U. S. drone strike that killed al-Zawahiri, members of the terror group Haqqani network had tried to conceal that the al-Qaeda leader was at the house in Kabul, which reportedly was owned by a top aide to Sirajuddin Haqqani, and restricted access to the site*," (The Hindu, 2022). Doesn't this revelation expose Rawalpindi's continuing honeymoon with terrorist groups?

13.9 Democracy 'Disruptor'

That none of the 22 prime ministers in Pakistan's seven-and-a-half-decade history could complete their stipulated tenure cannot be just a coincidence. While Pakistan's first prime minister Liaquat Ali Khan was assassinated, all the others were sent home packing, thanks to wily manipulation orchestrated by the

Army. This unfortunate trend is even more despicable because prime ministers considered a potential threat by the military establishment were exterminated.

While Zulfikar Ali Bhutto was the hapless victim of what Prof. Ghafoor Ahmad of Jamaat-i-Islami aptly called "*a judicial murder*," [Abbas, 2020]. A United Nations commission of inquiry determined that former Prime Minister Benazir Bhutto's "… *killing by a 15-year-old suicide bomber could have been prevented if adequate security measures had been taken*." [UN News, 2010]. Since Gen Musharraf, who was then at the helm of affairs in Pakistan, admitted later that "*I knew that she is under threat*…" (Musharraf: Bhutto Knew of Risks, 2008). There are good reasons to believe that Benazir Bhutto could have intentionally been thrown to the wolves!

13.10 Authority sans Accountability

As no Prime Minister in Pakistan has yet been able to complete even his [or her] five-year term, to accuse civilian governments of derailing the country is grossly unfair. So, since the Army has always been ruling Pakistan [either directly or tacitly], should Rawalpindi not be held equally accountable for the terrible mess the country is in?

The Army has been apportioning the lion's share of the budget and never ceases boasting about its professional prowess and has a lot to answer. Its abysmal record of military reverses, starting from its failure to seize J&K in 1947 and 1965, the loss of erstwhile East Pakistan in 1971, inability to push back the Indian Army from Siachen Glacier to the shameful retreat from Kargil in 1999, is a case in point.

Pakistan army also needs to explain to its fellow citizens why it has been unable to defeat TTP. With what face [or right] Rawalpindi was negotiating peace with those responsible for the 2014 Army Public School Peshawar carnage in which 134 innocent school children were brutally murdered and hundreds of security forces killed by this terrorist group!

Furthermore, Rawalpindi needs to come out clean about how former TTP spokesperson Ehsanullah Ehsan, who was held in military custody after his purported 'surrender' to the Pakistan army in 2017, still managed to escape along with all his family members in 2020. It also needs to clarify why despite being in the Army's custody for nearly three years, Ehsan was not even charge-sheeted and produced before an anti-terrorism court. Most importantly, Rawalpindi needs to enlighten the people of Pakistan as to why it kept Ehsan's 'escape' under wraps until an Indian news weekly broke this news! (The Sunday Guardian, 2020).

13.11 'Accommodating' Terrorism

Rawalpindi needs to explain to the people of Pakistan why instead of taking timely and determined action to arrest the brazen proliferation of homegrown terrorism and thus save them from this scourge, the Pakistan army has been encouraging religious fundamentalism instead to flourish by allowing it to assume gargantuan proportions. This encouragement of religious fundamentalism is amply evident from disturbing events that unfolded in Islamabad's Lal Masjid between 3–11 July 2007. This standoff culminated in a

bloody battle between Islamist fundamentalists holed up inside the mosque premises and the Pakistani security forces that left more than 100 dead and nearly 300 wounded.

Established in 1965, Lal Masjid "*had been used to recruit and mobilise volunteers to fight in Afghanistan and Kashmir, which also brought its chief cleric [Maulana Muhammad Abdullah] closer to the intelligence and security establishment.*" Despite being notorious for his rabidly radical sectarian views, General Zia appointed Abdullah as a member of his Majlis-i-Shura. Surprisingly, even after the Soviets withdrew from Afghanistan, Lal Masjid remained "*a centre of radical Islamic learning, housing several thousand male and female students in adjacent seminaries.*" (BBC News, 2007).

Despite its sinister religious radicalisation curriculum that was indoctrinating thousands and creating a new breed of 'homegrown terrorists, the Army continued to patronise clerics of Lal Masjid, due to which it gained immense influence and popularity. Author and senior Pakistani journalist Zahid Hussain has aptly opined that "*The Lal Masjid phenomenon [religious radicalisation] did not emerge overnight. It was the product of a decades-long policy of patronising extremist clerics and using militancy as a tool of the country's foreign policy."* (BBC News, 2007).

After the 9/11 attacks, when Pakistan's military dictator-turned-President Gen Pervez Musharraf agreed to join the US in its war on terror, clerics of Lal Masjid turned against their benefactor. During period between end March 2007 and the military operation to clear Lal Masjid three months later, impelled by the ambition to impose sharia law, its students ran riot.

While self-styled anti-vice squads of students abducted men and women [including Chinese nationals] accusing them of running brothels and even kidnapped a number of policemen, Lal Masjid clerics openly threatened a wave of suicide attacks if any action was taken against them or their students. Yet, the Pakistan army did not take any action.

With Pakistani intelligence officials revealing that after the Lal Masjid military intervention [Operation Silence], they had recovered letters written by the then Al Qaida chief Osama bin Laden's deputy Ayman al-Zawahiri from Lal Masjid, and al-Zawahiri himself coming out to swiftly condemn the Lal Masjid attack, the apprehension that this mosque was the centre of international terrorist activities was confirmed (The Times, 2007).

Had a civil government been in power during the Lal Masjid crisis, dithering to take decisive action due to political considerations would have been understandable. However, with a former army chief at the helm of affairs, the inordinate delay in clearing Lal Masjid of terrorists is unpardonable. It is hard to believe that ISI was unaware that Lal Masjid had been turned into a well-armed garrison capable of giving the Pakistan army's elite Special Services Group a run for their money.

An article published just three weeks before the Pakistan army's assault on Lal Masjid noted that Pakistani nuclear physicist and activist Pervez Hoodbhoy had predicted that "*The stage is being set for transforming Islamabad into a Taliban stronghold. When Musharraf exits - which may be sooner rather than later - he will leave a bitter legacy that will last for generations, all for a little more taste of power*" (Hoodbhoy, 2007).

Though directed at Gen Musharraf, this observation holds for all Generals who have ruled Pakistan and gives a fair idea of who exactly has been "derailing" Pakistan and why!

13.12 What propels Rawalpindi's Extraordinary Political and Economic Interests?

In 2016, while replying to a question asked by a Pakistan People's Party senator, Defence Minister Khwaja Asif informed the National Assembly that there were nearly 50 "projects, units and housing colonies" functioning in the country under the administrative control of the Fauji Foundation, Shaheen Foundation, Bahria Foundation, Army Welfare Trust and Defence Housing Authorities (DHA) (Dawn News, 2016). While the involvement of Pakistan's armed forces in commercial activities on such a massive scale may shock the uninitiated, Pakistan's military itself stoutly defends the same.

In his 2004 speech delivered in Karachi during the inauguration of a desalination plant for [DHA] at Karachi, President Musharraf proudly proclaimed, "*Then, we have army welfare trust, we have Fauji Foundation. Yes, they are involved in banking ... they are involved in. ... we have fertilisers... we are involved even in pharmaceuticals. We are involved in cement plants .... So, what is the problem? If these organisations are contributing and being run properly? We have the best banks. Our cement plants are doing exceptionally well. Our fertiliser plants are doing exceptionally well. So, why is anyone jealous? Why is anyone jealous if the retired military officials or the civilians with them are doing a good job contributing to the economy of Pakistan and doing well*? (Siddiqa, Pg. 18).

What Musharraf hailed as "a good job contributing to the economy of Pakistan and doing well" has been appropriately referred to as "*Milibus" [Military business] by noted Pakistani analyst Ayesha Siddiqa. She defines 'Milibus' "as military capital used for the personal benefit of the military fraternity, especially the officer cadre, which is not recorded as part of the defence budget or does not follow the normal accountability procedures of the state, making it an independent genre of capital. It is either controlled by the military or under its implicit or explicit patronage.*" (Siddiqa, Pg. 1). So, it does not require rocket science to infer that it is not national interests but mere preservation of the Pakistan armed forces' humongous financial empire that impels Rawalpindi to become the key player in the country's political and economic affairs!

13.13 Conclusion

As can be seen, the Army has an excessive role in Pakistan's polity and economy of Pakistan due to which civil-military relations in Pakistan have remained skewed in favour of the armed forces. They have been seen to enjoy considerable powers without direct accountability. Further, their governance record has been relatively poor, notwithstanding claims of superiority to civilian administrations. So, while it may be argued that the political class too has not necessarily facilitated effective Democracy in Pakistan, the question is: Did any civilian government in Pakistan ever get a fair chance to govern without being watched by the military?

Author's Note: That this piece endeavours to identify who exactly is responsible for 'derailing' Pakistan, commences and ends with a reference to Gen Musharraf is purely coincidental. Nevertheless, since his allegation inspired this investigation, his conduct as Pakistan's President, and subsequent revelations that have provided the necessary answer, this happenstance is indeed very appropriate!

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Section 14

AFGHANISTAN: FUTURE WRITTEN IN HISTORY

Air Marshal Anil Tiwari

The situation in Afghanistan is like history running in an endless loop. Afghanistan, from the beginning, has been a weak state with decentralised rule and infrastructure. Making the task more difficult has been tribal, sub-tribal and clan loyalties, influenced by regional neighbours like Pakistan, Iran and the Central Asian Republics. This geopolitical combination made it difficult even for Afghan kings to keep the entire area under control and have a central rule. Hence, they resorted to just collecting taxes and a show of force once in a while. Corollary to this, albeit much more significant, were the problems faced by an occupying power in establishing a long-term central rule. Historically, Pashtuns have always ruled Afghanistan. The Durand Line between Afghanistan and Pakistan divided the Pashtun region between the two countries. Afghanistan has the longest border in the South and the East with Pakistan. Therefore, Pakistan will always have a stake in Afghanistan, and there cannot be lasting peace in Afghanistan till Pakistan is onboard.



14.1 Terrain

The US intervention in Afghanistan, like the British interventions of 1839–1919, is history. If one considers past events in Afghanistan, it is apparent that history has repeated itself. The map is from 'Google Maps' (Google, 2022). Afghanistan is a landlocked country. The Hindukush Mountains run in an East-West direction across the country, with the peaks reaching up to 24000 ft. All the countries around Afghanistan have means of sustenance, rivers, sea, fertile land and other resources. In comparison, Afghanistan has just bare mountains and deserts. The rivers are snow-fed and have water only during melting snow. Only dry fruits and opium are grown in Afghanistan. Even salt comes from Pakistan. It is a treacherous terrain upon which there is nothing much to survive.

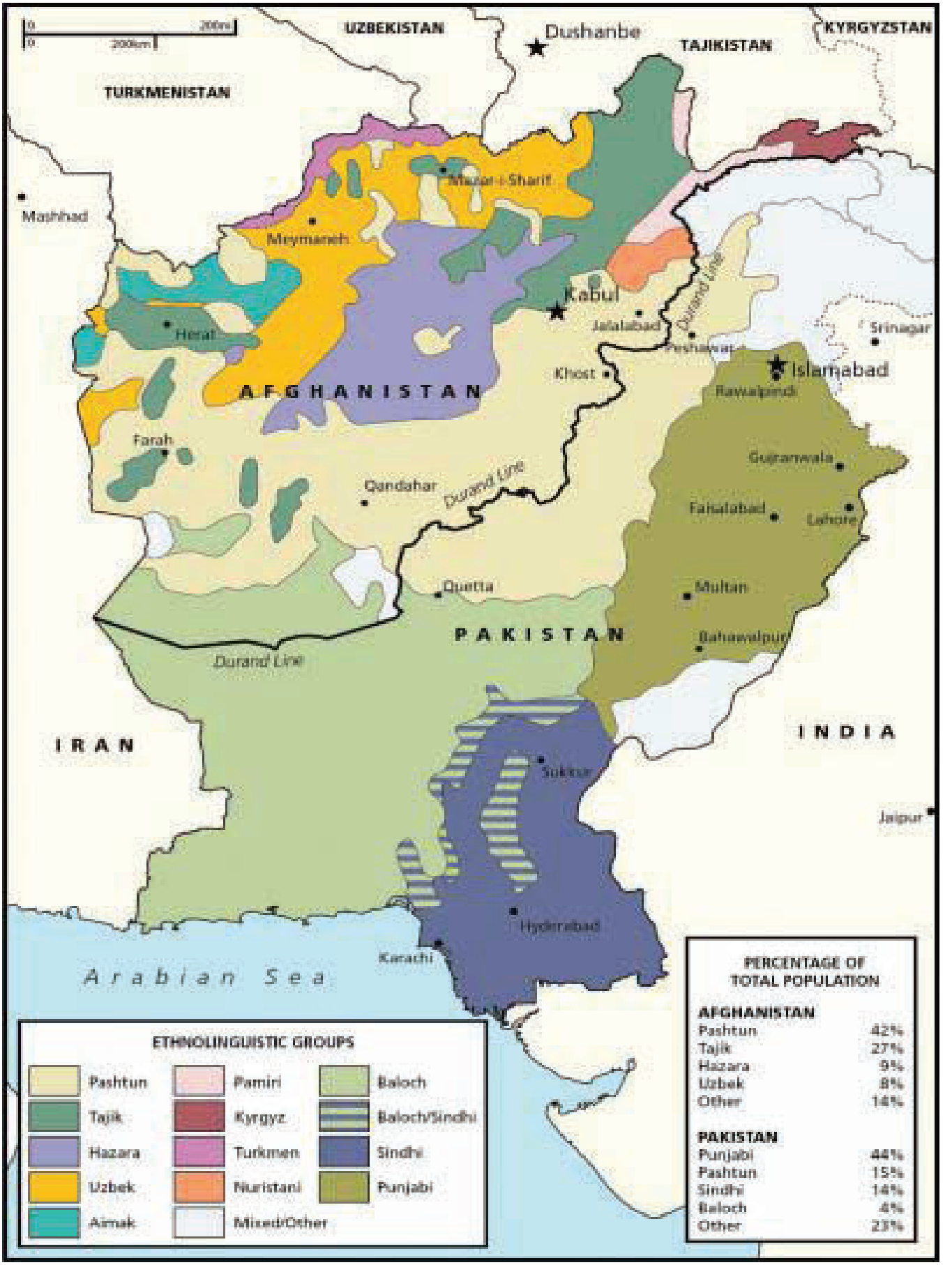


The regional powers coveted Afghanistan only for the connectivity it offered. The Silk Route map is from the website of UNESCO (UNESCO, 2022). Afghanistan was at the crossroads of ancient North-South and East-West silk routes. It used to connect India to Central Asia and China to the Mediterranean. Any trade in these directions had to go through Afghanistan, and to cross this inhospitable terrain; the traders had to depend on the mercy of local tribes. The same applied to all the invaders who attacked India. From Alexander to the Mughals, everyone who invaded India had to conquer Afghanistan or befriend the tribes. The cities like Kabul and Mazar-e-Sharif on either side of Hindukush and Herat came up as transit points before entering the desert. As a landlocked country, one can remove nothing from Afghanistan without dealing with its neighbours.

14.2 Ethnicity

Before analysing the past, it is essential to have some basic knowledge about the ethnicity in Afghanistan. The map provides the location of tribal groups (Afghanistan and Pakistan Ethnic Groups, 2022). The two powerful tribes are Pashtun and Tajiks, 42% and 27% of the population. Others are Hazara, Uzbek, Baloch and Turks. Pashtuns are the largest ethnic community located primarily in the South and East of the country. Pashtuns and Baloch are on both sides of the border with Pakistan. They are also part of Western Afghanistan and have small pockets in the North. King Abdur Rahman Khan, in 1880, settled the ethnic Pashtuns in Northern Afghanistan and some parts of Western Afghanistan. He did it ostensibly to develop the country. However, the real reason was to displace and replace Persian-speaking tribes with Pashto-speaking Pashtun tribes to ease the governance, as the kings in Afghanistan were always Pashtuns. Other than the majority of Pashtun areas in the South and East of the country, these pockets of Pashtun areas provided significant support to the Taliban. The Pashtuns live by their 'code of honour' called 'Pashtunwali'. The main component of Pashtunwali is hospitality, asylum, justice and revenge. The Taliban, being mostly Pashtun, followed Pashtunwali, superimposed on Islam. It facilitated their acceptance by the masses because they just formalised the usual way of life without any change. They felt resistance when they moved into non-Pashtun areas because those tribes lived by their own rules are also influenced by Their sect of Islam, Sunni or Shia also influences their tribal loyalties (Zahid, 2013). Almost 90% of Afghanistan is Sunni and 10% Shia.

The land or province to which they belong influences Afghan loyalty. If one asks someone in Afghanistan about his ethnicity, he might say Kabuli, Panjshiri or Herati before mentioning Pashtun/Tajik or Shia/Sunni. Another peculiar thing about Afghanistan is that despite so many differences, they still want to stay together. When there was turmoil in erstwhile multi-ethnic Yugoslavia, Serbs made their own country Serbia, Croats formed Croatia and so on. Tamils wanted a separate Tamil country in Sri Lanka. However, even after so much of the war in Afghanistan, no one ever talked about greater Tajikistan, Uzbekistan, or Pashtunistan. Afghans, for centuries, have been fighting with each other in the name of land, tribe, or sect of Islam. However, against a foreign power, traditions like Pashtunwali mobilises Afghans to unite and fight. Once the foreign power leaves, the existing tribal and other divides take precedence, and infighting starts again. Winston Churchill, who served in the Army in 1897 in Afghanistan, mentioned, "Every man's hand is against the other, and all against the stranger" (Churchill, 1916, p. 23).


UZBEKISTAN
Dushanbe
TAJIKISTAN
KYRGYZSTAN
TURKMENISTAN
Mazar-i-Sharif
Mashhad
Meymaneh
Kabul
Jalalabad
Durand Line
Peshawar
Srinagar
Herat
Khost
Islamabad
AFGHANISTAN
Rawalpindi
Farah
Gujranwala
Qandahar
Durand Line
Faisalabad
Lahore
Quetta
Multan
PAKISTAN
Bahawalpur
Durand Line
IRAN
INDIA
Sukkur
Jaipur
Hyderabad
Karachi
Arabian Sea
ETHNOLINGUISTIC GROUPS
Pashtun
Tajik
Hazara
Uzbek
Aimak
Pamiri
Kyrgyz
Turkmen
Nuristani
Mixed/Other
Baloch
Baloch/Sindhi
Sindhi
Punjabi
PERCENTAGE OF TOTAL POPULATION
AFGHANISTAN
Pashtun 42%
Tajik 27%
Hazara 9%
Uzbek 8%
Other 14%
PAKISTAN
Punjabi 44%
Pashtun 15%
Sindhi 14%
Baloch 4%
Other 23%

14.3 Past

Historically, Afghanistan has been a weak state with a decentralised socio-political infrastructure and loyalties. Geography greatly influences its history. It always had great empires all around its periphery, Turkey, Iran, India and Central Asia. Its hostile topography and terrain made it difficult for any central government or external power to rule it. Therefore, all occupiers tried to impose direct rule in urban areas and indirect rule in provinces. The locally autonomous tribes paid tribute only when they could not avoid doing so. The tribal, clan and sub-clan loyalties superseded national loyalty. Spread across the national boundaries, the policies of neighbouring states also influenced the tribal loyalties. The influence of Pakistan in the South and East, Iran in the West and Central Asian Republics in the North is significant.

One can trace the recent history of Afghanistan to 1747 AD. By then, the empires close to Afghanistan were in decline, and Ahmad Shah Durrani established the first Afghan empire. He understood the limitation of governing an empire with such rugged terrain and opted for political allegiances of various tribes rather than a cohesive nation-state. He was interested only in collecting revenues and allowed tribal leaders to govern their territory and maintain their local base support. The subsequent rulers followed the same modus-operandi. As a result, the idea of statehood was never firm, and the fragile kingdoms collapsed whenever the centre had a weak ruler. For the next 20 years or so, Afghanistan saw many rulers and a violent end to their rules till Dost Muhammad took over power in 1826. However, to his bad luck and bad luck of Afghanistan, its potential as a trade route and gateway to more prosperous regions was once again discovered by regional powers, this time Britain and Russia. Russia wanted to move southwards from Central Asia, whereas Britain, ostensibly, wanted to create a buffer state between British India and Russia. In the process, Britain went through three wars in Afghanistan 1839-42, 1878-80 and 1919. One can draw many parallels between events at that time with recent happenings. After winning in 1839, the British removed 'Dost Muhammad' and made Shah Shuja king. Shah Shuja was seen as a stooge of infidels and was never accepted. Over and above, to establish a central rule, all subsidies to tribal chiefs were stopped. The tribal chiefs rebelled. British found holding Afghanistan untenable and withdrew in 1842. His subjects killed Shah Shuja and massacred most of the Army. 'Dost Muhammad' again became King and ruled for the next 20 years. By 1875, the British were once more concerned with Russian influence and attacked Afghanistan in 1878. In a repeat performance, they occupied Kabul and, this time signed a treaty at Gandmak on May 26 1879. As per the treaty, there was to be a permanent British embassy in Kabul, and Britain was to oversee all foreign relations in Afghanistan. Promptly three months after signing the treaty, on September 3, 1879, the British envoy, Sir Louis Cavagnari, and his escorts were murdered in Kabul. The British Government again dispatched its forces. The King left his throne and went into exile. By now, the British had enough harassment by Afghan tribes and found it challenging to fund the troops there. So, they installed the previous King's nephew as the new King. They also promised him subsidies to keep Afghanistan peaceful and to delineate the area of responsibility for maintaining peace. The British drew the Durand line between Afghanistan and British India. This line created an unresolved problem; the line divided the Pashtun and Baloch areas between Afghanistan and British India. Over the years, the Afghan rulers, including Karzai, refused to recognise the line. Afghanistan was the only country which opposed the inclusion of Pakistan in the United Nations in 1947. They still feel that the Pashtun and Baloch areas East and South of the line belong to Afghanistan. Therefore, Pakistan can never allow Afghanistan to have

a strong central government, lest they start claiming the Pashtun areas South of Durand Line. The ideal situation for Pakistan is to have a subservient government in Kabul which could help Pakistan keep the border areas calm (Smith, 2022).

In 1919, King Amanullah came to power. He tried to modernise the economy and establish a central rule. He was overthrown in 1929. In 1979 Soviets came to Afghanistan, and this time, in place of the British, the new superpower US, intervened in Afghanistan to restrict Soviet influence. The Soviets left in 1989, and the US interest also waned in Afghanistan. Afghanistan went through civil wars for the next ten years, where regional countries supported various factions. In 1996, the Taliban came to power with the support of Pakistan. The Taliban regime was brutal and suspended all human, minority and women's rights. Strict Sharia punishments like amputations of limbs and stoning to death became the rule. However, the world did not take any notice. Only post 9/11, when the Taliban government refused to hand over 09/11 mastermind Osama Bin Laden, the US attacked Afghanistan. It was history repeating itself once more; this time, the US had come to Afghanistan trying to change the existing system by establishing a central rule and democracy. After 20 years, the US, like other powers earlier, realised that staying in Afghanistan was not worthwhile in cost-benefit analysis and withdrew. The Taliban reoccupied Afghanistan (Ballesteros Martín, 2011). The common reason for all these failures was a failure of governance by the Kabul-centric government, of course, due to rugged terrain, hostile tribes and regional influences. Afghanistan is called the graveyard of empires. See the summary of the reasons in the table below within the framework of history, geography and ethnicity: -

	Britain	Soviet/Russia	US
Occupation	1839 (Great Game)	1978 In search of warm water port	2001 To over throw Taliban
Change of ruler	Dost Muhammad Khan replaced by Shah Shoja	Frequent changes after King Zahir Shah was overthrown	Karzai/Ghani
Change in society	Disarming local militia, Taxes	Disarming local militia, Taxes	Disarming local militia, Taxes
Reduction in funding	Reduced subsidy to Tribal Chiefs	Reduced subsidy to Tribal Chiefs	Reduced subsidy to Tribal Chiefs
Centre Rule	Tried to rule from Kabul	Tried to rule from Kabul	Tried to rule from Kabul
Result	Overthrown	Overthrown	Moved out

14.4 US Failure

In hindsight, there were many reasons for the US failure. For success in any mission, the 'Selection and Maintenance of Aim' is very important. It is the first 'Principle of War', and it is not supposed to be changed mid-course. However, in Afghanistan, it was changed many times. When the US attacked Afghanistan, the aim was to overthrow the Taliban, dismantle Al Qaeda and capture or kill Osama Bin Laden. Overthrowing the Taliban was achieved within a month, and Al Qaeda was on the run. Subsequently, the US included the creation of Western-style democracy and nation-building. The objectives changed with every President and sometimes more than once by the same President. The

enhancement of objectives happened without a corresponding increase in effort. There was no long-term plan. The US did not fight a 20 years' war but fought 20 one-year wars. Moreover, each President kept announcing a withdrawal timetable or date. Obama started in 2011. All Taliban had to do was wait for US withdrawal.

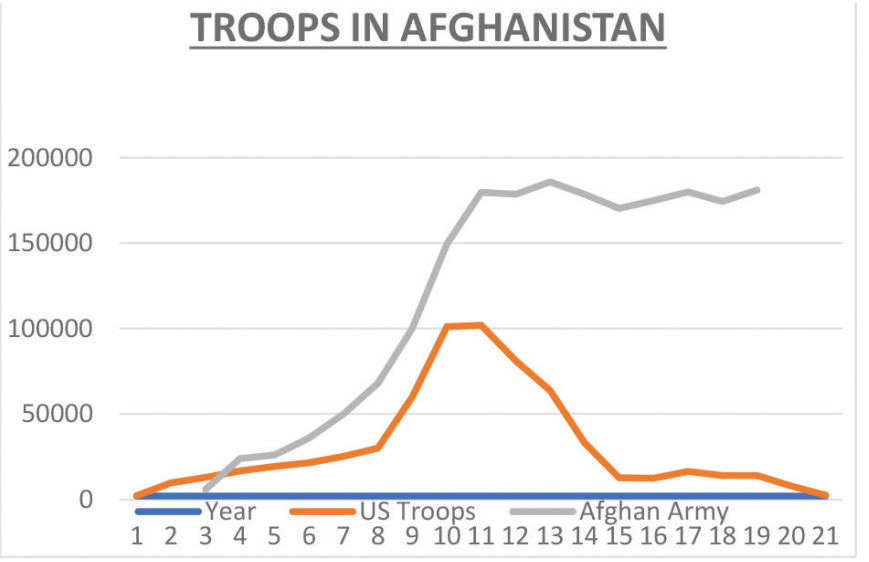
Secondly, as long back as 1500, Machiavelli, in his book, 'The Art of War' advised using overwhelming force to keep the war short (Machiavelli, 2011). Typically, the troop-to-population ratio is an essential determinant of the success of a stabilisation operation. Two years before the invasion of Afghanistan in 1999, the United States and its NATO allies deployed 50,000 troops to stabilise Kosovo, a country of 1.9 million. Afghanistan's population in 2001 was 21.6 million—yet by the end of 2002, there were only around 8,000 US troops in a country that was more than ten times Kosovo's size and had no army or police of its own (Dobbins, 2021). For ease of understanding, we have compared the size of Afghanistan and Jammu & Kashmir.



During 2010-11, at the peak of fighting and surge in US troops, the total strength was 1,50,000 Western troops and about a similar number of Afghani troops, some of whom trained for one month or less. As per open sources estimates, there are 7-10 Lakhs Indian troops in J & K to counter insurgency and terrorism supported by Pakistan. J & K also has the advantage of a fully functional civilian administrative infrastructure. The task of not only defeating the enemy but also holding ground was simply overwhelming for such a small force. The US designed their war effort for failure. Moreover, the war against terrorism changed into a war against insurgency, which was never clearly acknowledged. The insurgency cannot be defeated until the insurgents have secure launching bases in Pakistan.

Machiavelli also mentioned the dangers of 'exiles' as advisors and believing them excessively. The US made this mistake in Afghanistan and Iraq with Jalal Talabani. It brought in Hamid Karzai and, after him, Ashraf Ghani as President. Educated in the west, could speak English, but were not grassroots leaders or warlords with a large following. In Afghanistan, the importance of a person is judged by his tribal and ethnic closeness. That was why Ghani, an ex-world bank employee and a professor, left the country in a hurry.

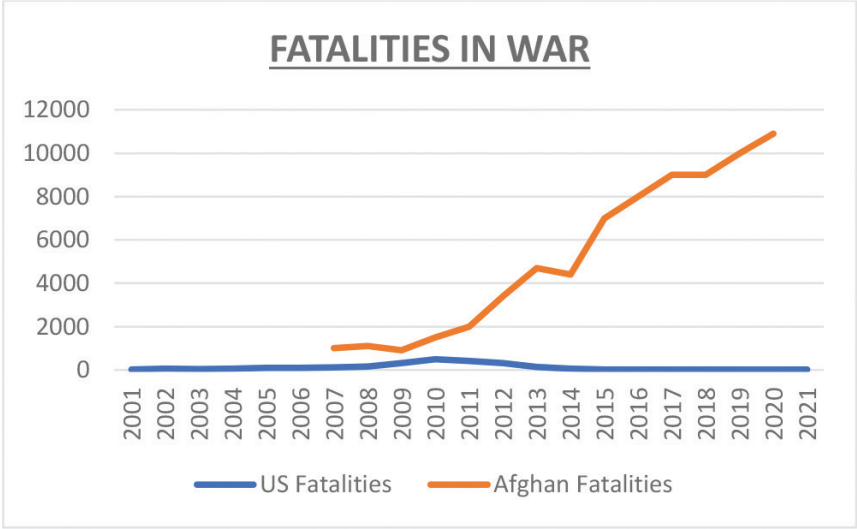
Thirdly, the Bush administration and subsequent ones neglected to commit the necessary financial resources to the Afghan stabilisation efforts. In Bosnia, the United States and other donors had provided economic assistance amounting to $1,600 per inhabitant per year for the first several years after that war. The comparable figure in Afghanistan amounted to $50 per person (Dobbins, 2021). When the US invaded Afghanistan, it tried to bring western-style democracy, constitution, schools, the justice system and others. However, it was not like Japan or Germany at the end of World War II when upgrading the existing system to Western standards was essential. In Afghanistan, the prevalent Sharia system was unacceptable to Western liberal values. So, everything had to start from scratch. It was challenging to generate faith in people's minds about the new system. The job became problematic when the system did not function. There was a minimal effort for capacity building; Therefore, the Taliban could move in wherever they found a vacuum.



The second problem, linked to the first, was Pakistan. The US boxed itself by coming to Afghanistan. On the western border was Iran, on which the US had applied sanctions and could not use that route for

logistic support. Central Asian republics aligned with Russia in the North were of little help. So, the only route left was through Pakistan. Other than average delay and bribery, US contractors paid about $1000 per truck to local warlords and smugglers for safe transit at the peak of the war. Once Imran Khan became prime minister of Pakistan, he increased the difficulty for western forces for domestic political reasons. With no secure access to Afghanistan, it was challenging to continue the war effort.

Like all the empires before it, the US found the cost and effort of maintaining troops in Afghanistan prohibitive, and there was nothing much to gain. Therefore, it decided to pull out of Afghanistan. Many people have been blaming the US pull out for the fall of Government in Afghanistan. The war was Afghan-led and fought. It was not the pullout but the abruptness of it which cascaded the collapse. The US withdrawal from Afghanistan did not take place overnight. The process started in 2011 after the killing of Osama Bin Laden. By December 28, 2014, the US had completed a significant pull out and declared its forces' end of combat operations in Afghanistan. Since then, the US forces were only in training, advisory and capacity-building roles (Gollob & O'Hanlon, 2020). The US also provided required air support. The graph shows the drop in the number of US troops in Afghanistan after 2014. The writing became clear on the wall when President Trump appointed Zalmay Khalilzad to talk to the Taliban without Afghan government representatives.



Now a word about the meltdown of the Afghan forces. Irrespective of what anyone says, the Afghan forces fought bravely. It was not a meltdown, as depicted. The Afghan forces have been fighting against the Taliban since 2014 when the US stopped the combat operations. From 2001 to 2014, the Afghan forces suffered 14,000 deaths compared to 2500 US combat deaths. However, after the US stopped the combat operations, from 2015 to 2020, an estimated 45,000 Afghan troops were killed fighting Taliban insurgents, whereas the US lost 93 servicemen (Gollob & O'Hanlon, 2020). Initially, it mentioned that the fighting in Afghanistan is always issue-based. USSR could not afford the cost of war and, in Jan 1992, declared a stoppage of financial aid. It resulted in the collapse of the Najeebullah Government in three months. Strong Mujaheddin forces were in Kabul by April 92. When these Mujaheddin, who had defeated USSR, realised in 1996 that Pakistan's support had shifted to the Taliban, and they gave up the war. In 2001, the Taliban vacated all the fortifications. They ran to Pakistan when they saw the massive airlifts out of Kunduz to evacuate their facilitators, Pak military and civil personnel. In the instant case, one of the main reasons for

the fight was the presence of US and western troops in Afghanistan. When the US started talking directly with the Taliban, leaving Afghanistan's Government out and deciding to leave Afghanistan under a peace deal with the Taliban, there was no reason to continue fighting. The meltdown was not in isolation. There was no rationale for fighting anymore (Goodman, 2022).

14.5 Present

Internal Dynamics. One year after the withdrawal of US troops from Afghanistan, the US Taliban Peace Deal is in tatters. The deal's main points were ceasefire, withdrawal of foreign troops, intra-Afghan negotiations and counter-terrorism assurance (Maizland, 2020). Besides withdrawing foreign troops, the Taliban has violated all the other points. After the withdrawal of US troops, the Taliban did not declare a ceasefire and start an intra-Afghan dialogue. They continued with their assault, occupied Kabul and overthrew the Government. The Taliban had promised an inclusive all-Afghan government. However, when formed, it was an exclusive group of Taliban male and, in many cases, UN-declared terrorists. Mullah Akhund, who is under UN sanction for his role in the previous Taliban, leads the Government. Sirajuddin Haqqani is the interior minister who is a US-declared terrorist with a price on his head. It was the Haqqani group that, on ISI's instructions, tried to blow up the Indian embassy in 2008. The defence minister is Mullah Mohammad Yaqoob, a son of Mullah Omar. The hardliners have sway in the Government. The initial impression that Taliban 2.0 is moderate was also incorrect. They have revoked all women's and girls' rights; they cannot go to work, and girls cannot study beyond primary classes. They have strictly implemented Sharia law. Women must be in a burqa, moving out of the house, and escorted by a male family member. There are discussions about no recognition of the Taliban government unless they mend ways. The first Taliban government, from 1996-2001, was recognised only by Pakistan, Saudi Arabia and UAE, and they survived. The Taliban leaders also do not care much about travel restrictions, as the only time they travelled abroad was to Guantanamo Bay prison. So, non-recognition may not make any difference to them as they will continue to get humanitarian aid. Moreover, their neighbours, led by China, are ready to do business with them.

If we talk about terrorism, there has been a mild drop as the Taliban, the main terror threat, has formed the Government. On July 31, the US killed Al Qaeda Chief Ayman al-Zawahiri with a drone missile while he stood on a balcony at his home in Kabul. He had a $25 million bounty on his head and was the primary coordinator of 9/11, which killed 3,000 people. Zawahiri was staying in the Sherpur area of Kabul, an erstwhile diplomatic enclave. It is a sign that the Taliban have restarted its support for Al Qaeda (Burke, 2022). However, more worrisome is the emergence of the Islamic State of Khorasan Province (ISKP), an offshoot of ISIS, a successor to Al Qaeda and a relatively new player in the Afghan muddle. It emerged in late 2014 in Southern and Eastern Afghanistan to extend the caliphate in South and Central Asia. While the Taliban followed the Pashtunwali code of conduct and focused on throwing the 'infidel' out and reoccupying Afghanistan, ISKP followed Salafi- Jihadi philosophy which was not of Afghan origin. As they were considered outsiders, their degree of acceptability was low. They had to fight Afghan and western forces as well as the Taliban. All the neighbours of Afghanistan, China, Pakistan, Iran and Central Asian Republics were worried about the spread of their influence in their respective countries (Schindler & Fisher-Birch, 2022). With their defeat in Iraq and Syria and opposition

in Afghanistan, many of their senior leaders were killed, drastically reducing their numbers. However, after the withdrawal of the US, ISKP is trying to regroup with the help of disgruntled Taliban members and resistance forces and trying to fill the power vacuum. Since the Taliban came into power, most of the terror attacks in Afghanistan, including Gurudwara and hospital attacks, have been attributed to them (Karacalti, 2022).

As far as the economy is concerned, Afghanistan on August 21 was not the same Afghanistan that which Taliban had occupied in 1996. Now it had schools, hospitals, ATMs, businesses, infrastructure built up, and work for women. However, when the US pulled out of Afghanistan, they did not pull out only the military but also stopped all the money they were pouring in. Also, the US froze Afghan assets in foreign banks, amounting to approximately $9 billion (DW, 2022). More than half of the Donors supported Afghan Government's $ 6 billion annual budget. Foreign donations met 40% of GDP and 80% of government expenditure. So, after the US pulled out, the Afghan Army and the entire Afghan economy collapsed.

A word about Afghan resistance: Amrullah Saleh, the former vice president of Afghanistan, and Ahmad Masoud, son of Ahmad Shah Masoud, are trying to start a resistance movement. They make statements about increasing the struggle during winters, but its efficacy is not visible. Three things are prerequisites for any armed resistance: funding, a firm base in the country and a secure base in any neighbouring country. Presently, none of this is available to the struggling Afghan resistance.

External Influence. As was mentioned earlier, the situation in Afghanistan depends not only on its internal dynamics but also on its neighbours' interests. Until the US was in Afghanistan, all its immediate neighbours enjoyed the security it provided but, for strategic reasons, were either outright against the US presence or made it difficult for the US to operate. After the US withdrew its forces and all the money it provided, the neighbours tried to come to terms with the problem and resolve it. Although no country has recognised the Taliban so far, the neighbours have become the most vocal supporters of humanitarian aid to Afghanistan and the removal of sanctions so that the Afghan disturbance does not spread in their countries.

China has a minimal border with Afghanistan. However, it is concerned about Uyghur unrest in its Xinjiang region and East Turkestan Islamic Movement (ETIM) activists taking shelter and forming Afghanistan bases to infiltrate China. During their previous stint, the Taliban had allowed ETIM to open offices in Afghanistan. China is also concerned about Baloch Separatist Movement and Tahreek-Taliban Pakistan (TTP) threat to its BRI projects. Both these groups have been disrupting project activities and attacking Chinese nationals. US withdrawal from Afghanistan and the Taliban-led Government's isolation have given China a unique opportunity. China feels that if they support the Taliban in their crisis, the Taliban will be obligated and negate shelter to the groups like ISKP and ETIM. Simultaneously, it does not want to show that they overtly support the Taliban government, which is yet to be recognised by any government in the world. Outwardly, China has asked the Taliban to form an inclusive government and respect human and women's rights. On the ground, it has been making quiet inroads in Afghanistan. It recently provided the US $8 million worth of aid to earthquake victims in Afghanistan. In April this year, it allowed the Taliban to open its embassy in Beijing. Chinese companies are already in discussion with central and provincial governments in Afghanistan for various projects. On July 26 this year, at an

Afghan-related conference at Tashkent, China announced a transnational railway connecting Uzbekistan to ports in Pakistan. Although the Taliban promised they would not allow terrorists to operate from their territory, there has been no implementation. The presence of Zawahiri in Kabul indicates that either they are lying or incapable of filling the power vacuum and controlling Al Qaeda, ETIM, ISKP and TTP.

Anything about Afghanistan is not complete till we consider Pakistan's involvement. Former Pakistani President General Muhammad Zia ul Haq told his ISI chief, Akhtar Malik, in December 1979 that the water must boil at the right temperature in Kabul. He was referring to the need for careful calibration of mujahideen activities so that USSR does not get tempted to start a full-scale war. Pakistan continued the same policy while the US was in Afghanistan for twenty years. They provided shelter, protection, training and funding to the Taliban so that they remain a significant threat to Afghan stability. At the same time, it controlled it so that, despite being aware, the US took only limited action against Pakistan. It identified Pakistan as a major non-NATO ally (Ahmed, 2007).

Pakistan supported the Taliban hoping to reduce Indian influence in Afghanistan and establish a friendly Pashtun government that could control Tehreek-e-Taliban Pakistan (TTP) activities in Pakistan. Moreover, for the success of the China- Pakistan CPEC project, peace in Afghanistan and the border area of Pakistan is very important. Most ministers in the present Taliban Government are obligated to Pakistan or have been working with ISI. In 2011, Admiral Mike Mullen informed the US Senate Armed Services Committee that the Haqqani Network acted as a veritable arm of Pakistan's Inter-Services Intelligence agency. Presently, Sirajuddin Haqqani is the interior minister of Afghanistan. However, the Taliban still showed reluctance in controlling TTP and wanted Pakistan to negotiate with TTP. TTP increased its attack on Pakistani forces after the Taliban came to power. The situation deteriorated so much that Pakistan had to carry out air strikes in Afghanistan. The strike killed 20 civilians. Both governments warned each other. Now Pakistan is in a quandary about its next course of action. It is also worried about TTP joining with ISKP, which dreams of forming a caliphate in the region. Therefore, it has started negotiating with the TTP not out of choice but out of compulsion (Mir, 2022).

14.6 Future

The US has pulled out of Afghanistan and has limited interest in it. The US did not mention Afghanistan in its 'Indo-Pacific Strategy' document of February 2022. The US will maintain an overwatch and conduct military operations like the one that killed Zawahiri but may not send any boots on the ground (Jones, 2022). The financial help may also come in small measures for humanitarian reasons.

One of the reasons for US failure in this 20-year war was its limited or no control over Afghanistan's neighbours. However, now China has Afghanistan on a platter. It controls all the neighbours of Afghanistan. Pakistan is its strategic ally and is heavily in debt. After Western sanctions, China is the only major economy doing business with Iran and Russia. Russia is also obligated to China for its support in the Ukraine war. China also does not care about human rights or the form of Government and is likely to turn a blind eye to the Taliban's doings. The Chinese companies are already in Afghanistan and working out various projects. Funding is a significant problem. US and allies paid 80% of the Afghan budget last year, which was 5.5 billion. Without these funds, there will be an economic collapse and chances for insurgency and fighting to restart.

Secondly, the efficacy of the Central Government's writ in provinces is almost non-existent. The Taliban are not a monolithic structure. These are factions coming together only to fight against a foreign invader. Now with the invader gone, there is no unifying thread. Like in the past, the Afghans are likely to act as per tribal and regional interests. In case the Taliban does not get its act together and fill up the power vacuum, the danger of ISKP and TTP firming the roots and spreading unrest in Afghanistan, and this time around in neighbouring countries also is genuine (Sarkar, 2021). After all, the main aim of ISKP is to carve out a caliphate in the region comprising Central Asian countries, Afghanistan, and parts of China, Pakistan and India.

14.7 A Role for India

After the US withdrawal and the Taliban taking over the power, there was much jubilation in Pakistan regarding a pro-Pakistan Taliban coming into power in Afghanistan. However, the relationship between Pakistan and the Taliban deteriorated within a year. Two central points of contention are the Taliban's objection to Pakistan creating border fencing as per the Durand line, which they do not recognise and the Taliban's reluctance to curb the anti-Pakistan activities of TTP. The relationship slowed when Pakistan carried out an airstrike inside Afghanistan against TTP, killing civilians. Therefore, the Taliban decided to keep the option other than Pakistan open and started a dialogue with India. Moreover, India was the fourth largest donor to Afghanistan. India spent all this money for developmental projects and infrastructure building. With the lack of funding from western governments, even China feels the need to involve India in helping Afghanistan. Although India has not recognised the Taliban Government, it has opened an embassy in Afghanistan for humanitarian works. Since August 21, India has sent 17,000 MT of wheat out of its total commitment of 50,000 MT, 500,000 doses of Covaxin, 13 tonnes of essential life-saving medicines, more than 60 million doses of polio vaccine and winter clothing (Sinha, 2022).

India's national interest is to have a strong and sovereign Afghanistan, which is opposite to that of Pakistan, which wants a subservient government in Afghanistan. The Indian Government's national interest and the national interests of any Afghan government will always be aligned. Therefore, it must treat the Taliban as the present Government in Afghanistan and restart its developmental and humanitarian aid programmes in consultation with them (Summers, Mehta, & Jarenwattananon, 2022). There is a need for India to keep working in collaboration with other countries to help Afghanistan normalise. India must work towards developing Central Asia, Afghanistan, and Iran road links to Chabahar port in Iran. It will reduce Afghanistan's dependency on Pakistan for trade and transit.

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PART 6

MARITIME AND INDO PACIFIC

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Section 15

NON – TRADITIONAL THREATS TO MARITIME SECURITY

V Adm M.P. Muralidharan (Retd)



15.1 Introduction

1. Maritime security and, more so, its non-traditional threats gained prominence towards the end of the Twentieth Century mainly due to the impact of piracy and maritime terrorism. These two issues have impinged upon nation-states' sovereignty and threatened the global economic framework. However, the emergence of these maritime threats was, in a way, ironic, for they appeared when the end of the Cold War was to signal an era of unprecedented peace and stability. A 'New World Order was

on the anvil with durable interstate structures. Destabilising threats to national and international security were expected to decline commensurately. With hindsight privilege, we know this was not to be. While States were geared for traditional defences, a series of unconventional threats emerged in realms characterised by lesser regulation and control –across porous land borders, amidst ethnic populace within a nation-state, on national systems and networks, in cyberspace, and of course, in the maritime arena.

2. On reflection, given its vast unregulated spaces, the Maritime domain was an area for such threats to emerge. However, this free nature of the seas was historically upheld as an arrangement of choice. Dutch jurist Hugo Grotius, in his book "Mare Liberum" or The Freedom of the Sea, written in the 16th century, postulated the unrestricted use of the seas by one and all (Grotius, 1609). This Freedom constitutes one of the founding principles of modern international maritime law and is covered in Article 87 of UNCLOS (United Nations, 1982). In the days of Hugo Grotius, the seas were also an arena of intense mystery, and mariners were looked at as adventurers. It was, thus, a widespread belief that the vast and uncharted oceans were best left to their own devices. It is therefore not surprising that international systems and mechanisms were not oriented towards controlling or regulating the vast ocean spaces ab- initio.
3. However, it would be incorrect to assume that non-traditional threats to maritime security are a recent phenomenon. Indeed, such threats and crimes at sea are as old as the use of the maritime arena by mankind. Piracy has existed ever since mariners and commodities transited the oceans. Ancient Roman, Greek and Chinese mariners all reported piracy attacks. Julius Caesar was captured by pirates in 76 BC and vowed to end the menace for all time as soon as he was released after paying a hefty ransom.
4. But why go that far? Kautilya in Arthashastra has written on maritime dimensions of security. He had a post of Chief Controller of Shipping and Ferries, responsible for various maritime activities, such as the welfare of sea traders and seamen, ensuring the seaworthiness of ships and significantly tackling piracy. He also mentions that pirates and enemy boats violating territorial limits should be destroyed (Rangarajan, 1987).

15.2 Overview of Non-traditional Maritime Security Threats

5. Are piracy and terror the only non-traditional maritime security threats? While these two subjects have spurred greater focus, several other ingredients are less glamorous, if one may use the term, and consequently less reported. Non-conventional or non-traditional maritime security threats or challenges which are also called LIMO or Low-Intensity Maritime Operations, would include maritime terrorism, piracy, drug and human smuggling/ trafficking, gun running, Illegal, Unregulated and Unreported, or IUU fishing, an illegal gathering of sensitive seismic and economic data and threats to energy security, economy, and environment (Indian Navy, 2016, pp. 43-45). Other than the nature of the medium and its predominantly ungoverned state, as mentioned earlier, some familiar, underlying causes lead to the emergence of non-traditional threats to maritime security.

6. It is correct to say that every form of crime or threat at sea has its roots and solution on land, as most of them reflect corresponding geopolitical complexities on land. The rise of Piracy in South East Asia in the 90s was attributed to political turmoil and economic recession. Australia saw an influx of refugees or human Smuggling through boats from Afghanistan and Iraq in the late 1990s due to wars in those nations. Piracy off the Horn of Africa is a prime example where the absence of an effective central government since the early 90s has led to ethnic strife, famine, severe socio-economic hardships, poaching of marine resources and eventually piracy.
7. Global dependence on maritime trade has increased over the past few decades, where around 80% of the global trade by volume and 70% by value are carried by sea, as per UNCTAD data (UNCTAD, 2021). The total sea-borne cargo grew from about 2.5 billion metric tonnes in 1970 to over 11 billion in 2019. While there has been a slowdown due to the current pandemic, global maritime fleets have doubled between 2005 and 2020 to 2,033 million DWT and 62,100 vessels (Department of Transport, 2021). This increasing dependence not only means a corresponding economic impact but when combined with over 6500 ports and terminals worldwide, a limitless range of tempting high pay-off targets tapped by criminals and terror organisations.
8. Policing the seas remains a challenging proposition. Consider the expanse itself. Covering 139 million (139,768,200) square miles, the oceans equate to almost two and a half times the planet's terrestrial surface area. Matters are made complex by the legislative and regulatory frameworks that administer the maritime environment. Flags of Convenience Vessels, for instance, aggravate problems commonly associated with maritime trade, and phoney companies hiding their true intent and purpose makes tracking activities difficult. The United Nations Convention on the Laws of the Seas that came into force in 1994, five decades after the 'freedom of the air' arrangement, applies only to nation-states, leaving activities of non-state constituents, such as shipping companies, ship owners and cargo owners, open to jurisdictional interpretation. Denies that threats and crimes emanating in the maritime arena are much more challenging to monitor and resolve than those on land due to peculiarities of the maritime domain.
9. Coming more precisely to India's maritime context, it would be observed that India is as much a maritime nation as a continental one. While India has a land area of over 3 million square km with a border of 15,000 km, her coastline is over 7500 km, with nine Coastal States, four Union territories and close to 1200 Islands. More significantly, this gives India an Exclusive Economic Zone (EEZ) of 2.2 million square km with another 0.5 million sq. km to be added to the continental shelf (Indian Navy, 2015, p. 62). Nearly 90% of India's trade by volume is through the oceans. Its location at the base of continental Asia, on top of the Indian Ocean close to the choke points of the ocean, gives it a vantage position concerning the entire area from the African coast and West Asia to South East Asia and beyond into the Pacific Ocean. As we are now looking at the concept of Indo-Pacific, the region accounts for nearly 60% of the world's GDP and close to 60% of global maritime trade (Nicolas, 2021). It gives India an added stake in the security and stability of waters in the Indo-Pacific region, as it is located close to the world's largest source of oil and natural gas, i.e., the Gulf Nations and Central Asia. Another concern for India is that many of her Island territories, both in Andaman and Nicobar and Lakshadweep, are uninhabited and are therefore

susceptible to use as hideouts or havens for transhipment or caching of arms or drugs or illegal fishing activities.

10. Having taken an overview of various non-traditional threats in the maritime arena and the possible overarching factors for its emergence, let us take a deeper look at them.

15.3 Piracy

11. Historically, as mentioned earlier, piracy has existed ever since maritime trade started. As commercial trade expanded, piracy also expanded. By around the 14th and 15th centuries, many navies were created with the express aim of protecting shipping and trade from piracy. Piracy peaked during the ten years between 1716 and 1725, a period called "the Golden Age of Piracy". Navies responded by setting up convoys to protect merchant ships or even offering - for a fee - to transport cargo on warships (Library of Congress, 2022).

    Most pirates were captured or eliminated due to the concerted efforts of navies. By the turn of the eighteenth century, piracy was a forgotten phenomenon. History repeated just when it was thought that pirates were only in Hollywood. By the 1980s, merchant ships were reporting piracy attacks, first off West Africa and after that in South East Asia. The number of incidents tripled between 1991 and 2001. Between 2006 and 2011, piracy incidents outnumbered the previous year for five straight years (International Maritime Bureau, 2011).

12. Piracy modus operandi was strikingly similar to that encountered in the olden days. Like other maritime crimes, its transnational imprint is a key subscript of piracy. Other than the pirates, who were at the front end, an elaborate 'back-office' arrangement was in place to manage the piracy industry. After a successful hijack at sea, the ship owner was contacted, and negotiations concluded concerning the ransom amount and its delivery. As the rise in Piracy trends in the early part of this century became alarming and ransoms too rose internationally, several initiatives were launched to address piracy concerns. At the operative level, nearly 25 countries deployed their Naval forces, some independent and some in groupings, in the piracy-affected regions off Somalia.

13. Several UN Resolutions and other inter-governmental mechanisms were established to fight piracy. The Regional Cooperation Agreement to Combat Piracy and Armed Robbery Against Ships in Asia (ReCAAP) was the first regional government-to-government agreement to promote cooperation against piracy and armed robbery in Asia (RECAAP, 2022). The Djibouti Code of Conduct, towards suppression of piracy in the Western Indian Ocean and the Gulf of Aden with Information Sharing Centres at Sanaa, Dar-es-Salam and Mombasa, came up (IMO, 2009). UK Maritime Trade Operations (UKMTO) was set up in Dubai in 2001 (UKMTO, 2022). Other initiatives like Maritime Security Centre – Horn of Africa (MSC-HOA), the NATO Shipping Centre, and the International Maritime Bureau Piracy Reporting Centre at Kuala Lumpur emerged (MSCHOA, 2022) (NATO, 2022) (ICC CCS, 2022). A designated transit corridor called the Internationally Recommended Transit Corridor (IRTC) was promulgated by the UK Maritime Trade Organisation as a safe transit route for merchant

traffic plying through the Gulf of Aden with the waters monitored by multinational forces. All these measures helped bring down piracy, and in 2021, as per IMB, there were only 229 attempts of piracy and armed robbery across the world, with a steady improvement off Somalia (International Maritime Bureau, 2022).

15.4 Maritime Terrorism

14. Maritime terrorism is another issue of concern for security agencies worldwide. The maritime environment is an obvious choice for attacks for several reasons (Indian Navy, 2015, pp. 59-60). Firstly, as discussed earlier, is the unlimited range of high pay-off targets that the marine environment offers. Secondly, maritime attacks tend to be disproportionately skewed in favour of the attacker in terms of costs, unlike land-based or air-borne attacks.

    The MV Limburg attack, for instance, cost only a few thousand dollars to execute. But it resulted in a short-term collapse of international shipping in the Gulf. It led to a 48% hike in the price of Brent crude oil, caused the tripling of war risk premiums on ships calling at Aden, resulted in a 93% drop in container terminal throughput and cost the Yemeni economy an estimated $3.8 million a month in port revenues. A simulated study on a terror strike at the port of Los Angeles indicated that it could result in the closure of all US ports for a week. It would cost the economy $58 bln and 92 days to clear the backlog of containers! Incidentally, the attack on USS Cole cost about $10,000, while repairs to the ship cost almost $250 Million (Boutilier, 2004). Incidentally, it costs significantly higher to carry out terror attacks, say by air or over land. 9/11, for instance, cost nearly half a million dollars to execute. The disproportionate pay-off in case of maritime attacks is also in terms of loss of life. Ships offer a unique opportunity in which large numbers are aggregated in a confined physical space.

15. However, historically, oceans have not been a major focus for terrorist activity. Maritime terror incidents constitute only 2% of all international terror attacks in the last three decades. While terror organisations aspire to operate with impunity in the world's waterways and seas, a major disincentive is the complexities associated with the marine environment. Operating at sea requires terrorists to have mariner skills, access to appropriate assault and transport vehicles, the ability to mount and sustain operations from a non-land–based environment and certain specialist capabilities that are not easy to acquire. The international community also came up with many initiatives to counter this menace, such as the 1988 SUA Convention, or the Suppression of Unlawful Acts Convention, seeking to ensure that States will either prosecute or extradite those responsible for terror acts at sea, including those undertaken outside their borders (IMO, 1988). India has enacted The Suppression of Unlawful Acts Against Safety of Maritime Navigation and Fixed Platforms on Continental Shelf Act, 2002 (Government of India, 2002).

16. Post 9/11, IMO adopted several resolutions to enhance maritime and port security during the 2002 London Conference on the International Convention for the Safety of Life at Sea (SOLAS) (IMO, 2002). Principal among them was the adoption of the International Ship and Port Security Code (ISPS Code) which prescribed minimum security arrangements to be put in place by ships, ports and

government agencies (IMO, 2004). The US also launched the Container Security Initiative (CSI) (US Customs and Border Protection, 2002).

17. Ominously, even as many of these were being implemented, the attack by terrorists in Mumbai on the night of 26 Nov 2008 saw professional exploitation of the maritime environment (Indian Navy, 2016, p. 104). The terrorists, during their passage on the fishing boat hijacked from Indian fishermen at gunpoint for unsuspected transit to Indian waters, acted and behaved like seasoned mariners. The attack was also path-breaking on another count. Hitherto, all attacks were planned to originate and terminate at sea. 26/11, by contrast, was planned to influence events on land. It also proved that maritime expertise was available in the criminal market for an ideology, or worse still, for a price (Indian Navy, 2015, pp. 59-60). Fortunately, the numbers of maritime terrorism are still small and have been averaging less than 10, with a peak of 23 in 2016.

15.5 IUU Fishing

18. Other than piracy and maritime terror, Illegal, Unreported and Unregulated (IUU) fishing constitutes one of the most common and widespread non - traditional maritime security threats. It is also one of the most economically damaging. Essentially it is Illegal fishing conducted in waters under the jurisdiction of a state without its permission or in contravention of its laws and regulations (Indian Navy, 2016, p. 41). How or why does IUU occur? If you interact with traditional fishermen, you will realise that they will head wherever they can catch fish. Most do not respect International Maritime Boundaries. While they often feign ignorance, traditional fishermen claim to have been fishing in a particular area for generations or hundreds of years. Just because modern nation-states have drawn certain boundaries, they do not have to obey! This often happens in maritime zones between adjacent nations. Many times, modern states looking at larger policy objectives or to further good neighbourly relations agree to change traditional boundaries as perceived by the fishing or coastal community. While all nations and their citizens should respect international or bilateral agreements, dwindling fisheries resources, especially closer to the coast, where traditional fishermen operate, often leads to poaching or IUU. This, in turn, could develop into a major source of conflict between fishermen and nations.

19. Fisheries directly or indirectly employ over 200 million people worldwide. Annual global fish production in 2019 was estimated at around 178 million tonnes, up from around 148 million tonnes in 2010. Roughly 20 million tonnes came from inland fisheries. The fishing sector is a multi-billion dollar business valued at over $ 125 billion in 2017 and was estimated to grow to over $ 155 billion by 2023 (TPCI, 2020). Fish is one of the most traded segments of the world food sector. Around 35% of fish harvested is exported. Economics indicates that the average value of fish landed from a single fishing trip of a medium-sized vessel can run into hundreds of thousands of dollars. IUU fishing is estimated to be between 20 and 25 million tons of fish annually, i.e., about 20 to 30% of total fisheries production. It is estimated that annual losses due to illegal fishing are between $ 10 and 23 bn (United Nations, 2021). The incentives for illegal fishing are, therefore, considerable, given the financial benefits that can accrue. While smaller fishing communities could be educated to refrain from IUU

fishing because of the enormous profits, many bigger players or even syndicates indulge in IUU. Despite international efforts to curb IUU fishing, these illegal players have evaded mainly national and international regulatory approaches. It is a menace across the oceans, be it the Pacific, Atlantic or South China Sea. It is very much a growing threat in the Indian Ocean. IUU fishing should also be viewed as a more comprehensive national security threat. Other illegal activities like drug trafficking, gun running and surreptitious gathering of sensitive seismic and economic data in Exclusive Economic Zones of nations often happen along with it.

20. As far as India is concerned, fishing is a major economic activity, with 2.5 lakh fishing vessels generating employment for 15 million people and an income of $6 bn. Hence any IUU in Indian waters directly affects her economy. IUU fishing in our EEZ was a major menace for India till the establishment of the Indian Coast Guard in February 1977 and the subsequent enactment of the MZI Act 1981 (Indian Coast Guard, 2021) (Government of India, 1981). The Indian Coast Guard has been able to ward off illegal fishing from Indian waters to a reasonable extent. Presently the menace of illegal fishing in the Indian EEZ is limited to poaching along the East coast of India and in the Andaman Seas. The Information Fusion Centre (IFC) at Gurugram, in its Annual Report of 2020, has reported 379 incidents of IUU fishing in the Indian Ocean Region (IOR) (IFC-IOR, 2020). So, it is a threat that needs to be guarded against constantly.

15.6 Drugs and Arms Smuggling

21. Smuggling of drugs and psychotropic substances is rampant across the world. The 2010 bestseller 'Cobra' by Frederick Forsyth details the conduct of the international cocaine trade over the sea (Forsyth, 2011). While the book may have fictional characters and a storyline, the modus operandi described therein has substantial truth. Ocean routes are most favoured for concealed transportation of drugs.

    Fishing boats, small cargo vessels and pleasure craft, especially speedboats, provide a standard means for smuggling illegal drugs and psychotropic substances since they are subject to fewer controls and reporting requirements than large-scale commercial vessels. Commercial vessels are used to move large quantities of drugs between countries, particularly unmanifested, well-concealed or falsely declared cargo. Today's traffickers use various routes, often transshipping the cargo several times until its country of origin is completely obscured. Few ports can now be considered safe from attempts to place drugs and other illicit substances on board. Ships become vulnerable to being used as a conduit for the movement of drugs through freight, visitors to the vessel, contractor people who are onboard ships for repairs, as part of a crew, in the structure of containers or packing or concealed in vessels hull machinery. In such cases, the trafficker may have the unwitting assistance of innocent people. India's East and West coasts have been susceptible as staging points for the Smuggling of drugs.

22. There is a symbiotic relationship between drugs and arms smuggling, as these two go hand in hand. Organised crime syndicates mainly do arms trafficking, insurgent groups, and arms dealers, as also rouge states. Some of the terror groups have their vessels to transport arms. Chartered or phantom vessels are also used for this purpose. Arms are subsequently transferred mid-sea into speed boats

or suitable smaller vessels to avoid detection by maritime forces. There have been several incidents involving arms trafficking in Indian maritime zones. The explosives used for the 1993 Mumbai Blasts were trafficked through sea route. Arms trafficking continues to be a concern, and maritime agencies must remain alert. The IFC Annual Report of 2020 has reported 421 incidents involving contraband in the IOR (IFC-IOR, 2020).

15.6.1 Human Smuggling

23. Human Smuggling is another growing concern emerging from political turmoil, civil war, poverty and repression. Most individuals, who consent to be smuggled, are escaping poverty, seeking opportunities abroad, or escaping a natural disaster, conflict, or persecution. Others may be seeking asylum. At this stage, it is essential to distinguish between Human Smuggling and Trafficking. Unlike human trafficking, which is the transportation of people from one place to another without their consent, in order to exploit them, human Smuggling is characterised by consent between customer and smuggler. Human Smuggling gained prominence through the 'Boat People in the late 1970s with the mass departure of Vietnamese refugees. United Nations Office on Drugs and Crime (UNODC) report of 2018 indicates that Human Smuggling in 2016 across land, sea and air was to the tune of 2.5 million people, generating profits between $ 5.5 and 7 billion. It is estimated that about 500,000 were transported by sea routes generating revenue between $ 350 and 500 million (UNODC, 2018). In Indian waters, the movement of boat people has been observed in the Bay of Bengal / Andaman Sea. Stowaways are a linked concern when discussing Human Smuggling. A Stowaway is a person who secretly takes passage on a ship, or its cargo, without the consent of the ship owner or the master. While some of these may be cases of people looking for better opportunities, it is also a way for criminal and terror elements to enter a port or a new country. There have been a few stowaway incidents in Indian waters. IFC annual report quoted earlier indicates 337 incidents involving 19,217 immigrants in IOR (IFC-IOR, 2020, p. 15).

15.7 Threats to Economy, Energy and Environment

24. Countering threats to economic security in the maritime arena essentially would imply maintaining a smooth flow of trade and energy supplies, as it is the key to the economic wellbeing of any state. While in times of conflict, a host of military and procedural measures would be put into place to ensure the safety of trade and energy supplies, it needs to be ensured even in peacetime. Since 80% of the world's trade by volume, which is 90%, is transported over the oceans, threats to sea lanes of communications (SLOC) are a major concern. Considering her strategic location and as a major power in the region, India has a stake and regional responsibility in ensuring that the sea lanes of communications in the Indian Ocean remain open at all times and that there is no disruption of maritime traffic, especially at choke points. This is more so given the globalised nature of world trade and economy. It is also for consideration that since Indian-flagged vessels cannot meet all their trade requirements, foreign-flagged vessels carry a large amount of cargo for and to India. This makes it even more critical to ensure the safety of sea lanes in the area; otherwise, many vessels may avoid plying in the area or

demand exorbitant remuneration. Since mercantile shipping is being examined separately, the security of shipping, ports, and connected infrastructure needs to be ensured against unconventional threats.

25. Energy security encompasses not only the safety of sea lanes of communications or protection of ships carrying oil and gas but also the defence of coastal and offshore energy infrastructure, such as refineries, offshore platforms, pipelines and single buoy moorings. India also has a stake in the security of its overseas exploration efforts. With hydrocarbon interests becoming transnational and extending worldwide, with pipelines running across national boundaries, future threats would include disrupting such energy flows.

26. Environmental security is another issue of concern, with about 600 million people living in areas less than 10 meters above sea level worldwide, of which 200 million are in areas less than 5 meters above sea level. In India, about 44% of our population lives in coastal States, of which 14 to 15% live in coastal districts, with 50% in low-level areas. The impact of floods, cyclones or chemical spills on coastal communities can be well visualised. With 145,000 ships transiting the Indian Ocean annually, averaging between 13,000 to 15,000 vessels per day as per the IFC report quoted, oil spills are a realistic possibility as there could be collisions, groundings, or even damage to ships due to terrorist attacks. Spills from offshore platform accidents are also a distinct possibility. There have also been instances of dumping toxic waste by passing ships and discharging toxic material from ships that come to ship-breaking yards. Any major oil or other chemical spills close to our shores would be disastrous to the environment and the livelihood of those who depend on the coastal zone for sustenance. The IFC report of 2020 has indicated 592 incidents/accidents in the IOR, with 42% being sinkings or collisions (IFC-IOR, 2020, p. 13). Fortunately, there were no major oil or chemical spills due to them.

27. While the quest for financial gains or ideological supremacy underscores most maritime threats, another theme likely to emerge soon relates to the exploitation of deep seabed resources. Deep sea, generally considered to be beyond the 200m depth contour, constitutes the largest ecosystem on Earth. The exploitation of deep seabed resources is governed by the Seabed Declaration adopted in 1970. According to the declaration, the sea bed and ocean floor beyond the limits of national jurisdiction of 200 nm, collectively called ‘the Area’, is a common heritage of mankind. No state or individual can exploit resources in the area in a manner incompatible with the international regime. The International Seabed Authority (ISA), an inter-governmental body based in Jamaica, was established under the United Nations Convention on the Law of the Sea (UNCLOS) in 1994 to organise, regulate and control all mineral-related activities in the international seabed area beyond the limits of national jurisdiction (International Seabed Authority, 2021). ISA allocates specific areas to those entities that apply for seabed exploration for polymetallic nodules. Seabed exploration, which started a little over 150 years ago, was on a slow track due to the limitations of technology. However, with technological advancements, extraction of mineral resources from deeper reaches of the oceans is likely to be commercially viable in the near future.

28. India has a Pioneer investor status and was allocated 1.5 lakh square km in Aug 1987 by the International Seabed Authority in the Central Indian Ocean for the recovery and processing of polymetallic nodules. After a detailed survey, 75,000 square km of it has been identified for further

development and extraction of polymetallic nodules (Ministry of Mines, 2011, p. 194). We also have interests in Antarctica, where there may be prospects of resource exploitation in the near future. While we develop economically viable technologies singly or together with like-minded nations to harness ocean wealth, we need to ensure the security of our EEZ and other areas allocated to us. This security will prevent the unauthorised exploitation of resources or even the surreptitious gathering of seismic data in those areas.

15.8 HADR

29. While it cannot be strictly termed as a security threat, search and rescue and disaster relief, or HADR (i.e., Humanitarian Assistance and Disaster and Relief as now termed), is another challenge to security forces at sea. In a way, there is a linkage, as collisions, groundings or major damage to ships or platforms at sea could result in environmental and economic threats, as observed earlier. Prediction mechanisms, warning systems, contingency plans and rapid reaction forces need to be put in place to mitigate the effects of disasters like tsunamis or cyclones when they happen. Smaller nations in the Indian Ocean region look to countries like India for help and evacuation assistance.

15.9 Maritime Domain Awareness

30. It would be apparent that non - traditional maritime threats and challenges thrown by them have become complex with transnational linkages. While individual states could tackle some, others would need a bilateral or multilateral approach. Some of the smaller nation-states may need the assistance of others as their enforcement agencies would need more resources. In essence, closer cooperation between nation-states with trans-regional linkages in intelligence, surveillance network, information sharing and capacity building, not to mention effective patrolling by maritime forces, would ensure safer oceans. These actions, in turn, would call for enhancing knowledge or awareness of the maritime domain. While the term Maritime Domain Awareness, or MDA as we now call it, is comparatively new terminology, the concept itself is nothing new. Nations and maritime forces from ancient times have tried to enhance maritime situational awareness to thwart enemy attacks and retain an advantage over other competitors in trade. It was, in fact, a basic necessity as even for navigation across the seas, one had to monitor trade winds and weather conditions.
31. Maritime Domain Awareness (MDA) has been defined by the International Maritime Organization (IMO) as the effective understanding of anything associated with the maritime domain that could impact security, safety, the economy, or the environment (IMO, 2012). The maritime domain, in turn, can broadly be described as comprising areas on, under or bordering oceans and connected waterways, maritime-related activities, infrastructure, people, cargo, and vessels operating in the area. Therefore, any nation looking to safeguard its national interests in the maritime domain and its security interests would need to focus on enhancing domain awareness to ascertain inputs that could threaten its economy and security. MDA is needed continuously, as only such awareness would enable the timely identification of threats and the development of plans to overcome them at both strategic

and operational levels. MDA is also critically important in today's geopolitical context for effective national/strategic and operational decision-making to guard against conventional and unconventional threats.

32. It would be apparent that MDA is not something that is easily achieved, as the seamless nature of the maritime domain enables a steady flow of threats and challenges from one area to another. The critical ingredients of MDA, such as Intelligence, Surveillance and Reconnaissance, calls for combined efforts of multiple agencies to monitor areas of interest to gather continuously, correlate, analyse and fuse inputs, to develop a coherent tactical picture for timely dissemination to decision makers to initiate actions as necessary. The proliferation of ship and aircraft tracking technologies and surveillance and monitoring systems and methods provide a large amount of maritime information. The Automatic Identification System (AIS) required by the International Maritime Organization (IMO) provides a ship's course and speed, name, call sign, registration number, and classification (IMO, 2015). The Long-Range Identification and Tracking (LRIT) system, a satellite-based system, if installed onboard ships, allows real-time updates. Over the years, Maritime Patrol Aircraft (MPA), apart from pure naval reconnaissance missions, are also being used for EEZ patrols. Space-based surveillance using electro-optical and radar imaging satellites and Unmanned Aerial Vehicles (UAVs) are also used for maritime domain data gathering. Thus, various inputs from various systems, including satellites, ships and patrol aircraft of the Navy and Coast Guard, coastal radar and DF chains and merchant ships tracking, identification and reporting systems, are available to enhance domain awareness. However, such vast and varied data can only be helpful once it is systematically analysed.

33. India took a major initiative to augment and collate maritime domain awareness information in the Indian Ocean Region by setting up an Information Fusion Centre (IFC) in December 2018. The Centre's stated mission is to advance maritime safety and security in the IOR by enhancing maritime domain awareness and coordinating activities through information sharing, cooperation and expertise development along with partner nations and agencies (IFC-IOR, 2020). As maritime security or safety incidents affect multiple nations and agencies, they can be effectively addressed only by the collaborative participation of multiple nations and agencies. Over two years, IFC-IOR has made tangible progress by collaborating with like-minded partners. IFC-IOR has become a platform where not just countries but also multinational constructs can work jointly to counter the multifarious maritime security challenges that emerge in the region to ensure Safety and Security. The Centre currently has linkages with 21 partner countries (with many of them having Liaison officers based at the Centre) and 22 multinational agencies worldwide to enhance the surveillance of maritime spaces and sea lanes of communication across the Indo-Pacific. The Centre has been publishing a Monthly Maritime Security Update (MMSU) that provides an overview of the maritime security situation in the IOR, focusing on certain overarching issues from beyond these waters. IFC published their maiden Annual Report of 2020. The report highlights 1998 incidents monitored in 2020 about maritime security challenges. The incidents have been grouped under the categories of Piracy and Armed Robbery, Contraband Smuggling, Illegal Unreported Unregulated (IUU) Fishing, Irregular Human Migration (IHM) and Maritime Incidents (IFC-IOR, 2020).

34. While IFC – IOR has been a significant initiative in collaborating with countries in the region and multinational agencies to enhance MDA, the revived Quadrilateral Security Dialogue, also known as Quad, could provide another opportunity on similar lines. Quad nations viz India, Japan, Australia and the United States, each having considerable maritime interests and geographically located in the four corners of the Indo-Pacific, can significantly enhance MDA in the entire region. It can also play a significant role along the area's Sea Lanes of Communications (SLOC). Expanding MDA and like-minded nations in SE Asia and beyond could develop a common Indo–Pacific Maritime domain picture. In the current globalised world economy, MDA would continue to play a vital role in enhancing security along SLOC, which is essential for maritime nations' economic wellbeing.

15.10 Conclusion

35. The diverse nature of threats in the maritime sphere and their widespread impact blur the distinction between traditional and non-traditional threats. Increasingly, the impact of these threats transcends established confines; non-state actors may perpetrate maritime terror attacks with the tacit approval of some states. Maritime security and its challenges have become vastly complex and demand innovative approaches. It is more so as current threats to Maritime security do not recognise political boundaries, and there is a limit to what an individual state can do to counter such threats. A globalised economy has further enhanced the interdependence of nations. Hence cooperation between all stakeholder nations is necessary to ensure peace and stability across the seas to safeguard common maritime interests. Trust and confidence between nations are essential to ensure cooperative security. Confidence building could begin through bilateral and multilateral dialogues, and conferences followed up with exercises between Maritime Forces of nations. High-level contacts and regular meetings among political and military leaders of countries could further institutionalise the process and sustain continuity.

36. As far as India is concerned, her geographical position enables her to strategically influence her economic growth and those of many other nations in the Indo-Pacific region. Therefore, India's maritime strategy should encompass all maritime activities to safeguard its military, economic, commercial, scientific and political interests. Therefore, her maritime forces, the Navy and the Coast Guard need to be developed to support such a strategy. In order to safeguard her maritime interests, India should endeavour to build a favourable maritime environment and enhance net Maritime Security all along the Indo-Pacific region in cooperation with Maritime Forces from friendly nations. Enhancing MDA across the region is an initiative that would provide timely inputs on the developing situation across the Oceans to initiate actions as necessary, be it for humanitarian assistance or to counter developing threats.

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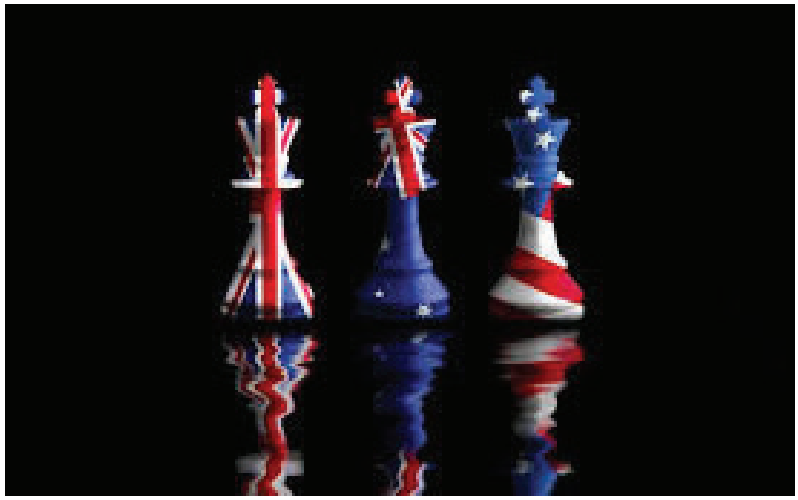
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Section 16

AUKUS AND IMPLICATIONS FOR INDIA

Rishi Athreya



Australia recently announced the creation of the AUKUS pact with the United Kingdom and the United States. The core aspect of this agreement is these two countries' transfer of technology for nuclear-powered submarines to Australia. Concurrently Australia has cancelled a 2016 deal with France to build conventional submarines. It raises numerous questions about security and diplomacy in the Indo-Pacific and larger global arena. As India is an active player in the Indo-Pacific Region, it must evaluate the implications of this development and weigh its responses.

16.1 AUKUS Partnership

The Australian Defence and Foreign Ministers issued a joint statement titled, Australia to pursue nuclear-powered submarines through new trilateral enhanced security partnership (Minister for Foreign Affairs, 2021).

Nuclear Submarines: A significant part of this agreement is the USA and the UK's transfer of nuclear submarine technology to Australia. The Australian Government mentions plans for commencing technology transfer within eighteen months. It further mentions that being a three-ocean nation, it needs

the most advanced technology provided by nuclear-powered submarines (Minister for Foreign Affairs, 2021).

There are doubts about this deal's technological viability (Jennings, 2021). According to Dr. Andrew Davies of the Australian Strategic Policy Institute (ASPI), technological capability concerns the whole submarine deal more profoundly. There are concerns about whether there will be transfer on a sufficient scale and timeframe (Davies, 2021). The Australian Government has created a Nuclear-Powered Submarine Task Force to facilitate Australia's role in AUKUS (Department of Defence, 2021).

Nuclear Non Proliferation: According to Dr. Manpreet Sethi, At another level, there are more critical questions about Nuclear Non-Proliferation raised by the AUKUS partnership (Sethi, 2021). There is a specific remark in the aforementioned ministerial statement that Australia does not plan to acquire nuclear weapons (Minister for Foreign Affairs, 2021). However, there is a view that non-proliferation norms are relaxed (Joshi, 2021). There are doubts about whether it is viable to operate nuclear submarines without a domestic nuclear industry (Davies, 2021).

Tri Service Capabilities: In the introductory Statement on AUKUS, the Australian Government mentions plans to acquire additional long-range strike capabilities for the Australian Defence Force. Additionally, the statement says that, throughout the decade, Australia will rapidly acquire long-range strike capabilities to enhance the ADF's ability to deliver strike effects across the air, land, and maritime domains (Minister for Foreign Affairs, 2021). There is a need to see the decision to scrap the deal with France and the Naval Group in the larger context of all three services and a need for integrated defence.

16.2 Power Transition Theory

This paper shall use the Power Transition Theory (PTT) as an explanatory framework. This theory is a branch of the Realist school of International Relations, which classifies countries as dominant, middle, and trim. Even for the dominant power, alliances are essential. There is often a tendency for dissatisfied nations to seek to increase power (Parmar, 2016). There is a converse view that the dominant nation too can be dissatisfied (Yilmaz & Xiangyu, 2019).

According to Prof. Kerry Brown, in a paper on the Chatham House website, China may see the creation of AUKUS more as a sign of insecurity rather than strength among hegemonistic powers. He also opines that China is a rising power and that the US is now no longer a dominant power and has to act in concert with allies (Brown, 2021).

A dominant nation may sometimes seek to share power with friendly allies. In the case of the UK, it facilitated the USA becoming a dominant power after the Second World War. Given that the sun was setting on the British Empire, even Australia and New Zealand became US allies (Thakur, 2021). Even France, to a lesser extent, supported the USA. In the current scenario, USA and UK are transferring precious nuclear technology to Australia (Huisken, 2021).

The USA has long been the dominant power in the post-cold War world. In the past two decades, China has been on the rise (Dam, 2020). The USA has also been keen to withdraw its global role. In this context, it is transferring power to friendly nations. Among these are UK and Australia. India, too, has good relations with the USA and Australia as part of the Northern Quad and Japan (Athreya R., 2020a).

As an emerging power, India is not necessarily dissatisfied with the major power, i.e., the USA. However, it is keen to deter the growth of China. This paper posits that the creation of AUKUS is part of the withdrawal of the USA from its global role and engaging friendly nations. The role of neutral middle powers is also addressed.

Until the mid-2010s, the USA was the dominant power in the Indo-Pacific. However, there has been a decline in US power and the rise of China. This decline has caused France to develop its regional Strategy as a middle power.

Possibly it was dissatisfied with the rise of a new power and the decline of a friendly power and NATO ally. However, France is dissatisfied with the latest chain of events (Regaud, 2021). Here too, it may look to build alliances that will prevent the formation of a status quo detrimental to French interests.

India has long been a neutral middle power having good relations with France and with all three AUKUS countries, so India must evaluate their position in deciding the best course of action.

16.3 Australian Strategic Position

Australia follows a Realist approach to International Relations and Strategic Affairs. The AUKUS partnership and deal should be seen in the light of Australian Government policy documents. The 2020 Defence Strategic Update (Department of Defence, 2020) and 2020 Force Structure Plan (Department of Defence, 2020a) are the latest two documents of the Australian Government. There has long been a sense of security as part of a USA lead world order. There is, however, a realisation that this is no longer an assurance of security (Seebeck, 2021).

The latest document mentions Strategic Competition between China and the United States (Department of Defence, 2020, p. Para 1.2). There are concerns about a significant power becoming more assertive (p. Para 1.3) and carrying out coercive activities (p. Para 1.4). There is a mention that countries in the Indo-Pacific are accelerating their military modernisation (p. Para 1.7). A specific concern is North Korea acquiring nuclear weapons (p. Para 1.8).

In an immediate practical scenario, Australia believes that the previous ten-year strategic warning assessment is not valid (p. Para 1.13). As long ago as April 2021, Dr. Shoebridge attributed this directly to the increased belligerence of China. This belligerence, in turn, has encouraged Australia to be part of alliances like the Northern Quad and Five Eyes (Shoebridge, 2021). Dr. Robin Niblett of Chatham House opines that the decision to acquire nuclear weapons is based on increased threats from China in the Pacific Region (Niblett, 2021). It is based entirely on Realist considerations of the balance of power (Barker, 2021).

Dr. Ron Huisken of the Strategic and Defence Studies Centre at the Australian National University (SDSC) points out that acquiring this nuclear technology would increase governance challenges for Australia to appear credible to allies (Huisken, 2021). Additionally, as Dr. Shoebridge of ASPI highlights, there are challenges with all three of the armed forces (Shoebridge, 2021).

While Australia may profess nuclear non-proliferation, there is a fear that this deal will increase the nuclearisation of the Indo-Pacific. This increase will create concerns for regional groups, especially ASEAN (Thakur, 2021).

16.4 Australia France Relations

Earlier policy statements from Australia speak of close ties with France (Department of Foreign Affairs and Trade, 2018). An important consequence of this decision on AUKUS's partnership with the USA and UK is the termination of an existing partnership with France. As recently as June 2021, it was stated that the Contract of the Century on the Futures Submarines Programme opened the path for a bilateral strategic partnership (Regaud, 2021, p. 23). France, a resident power in the Indo-Pacific, has been keen to develop ties with Australia and India (Regaud, 2021).

In the introductory Statement on AUKUS, the Australian Government explicitly mentioned that they would not proceed with Attack class submarines with the French Government-owned Naval Group. They also say that the decision was not taken lightly and that Australia wishes to continue close ties with France in the Indo-Pacific (Minister for Foreign Affairs, 2021). Further, they thank the Government of France and the Naval Group for their assistance hitherto in building Attack class submarines.

The Statement by the Australian Government was an apparent attempt to pre-empt any diplomatic fallout. This attempt may have yet to be successful. In an immediate response, the French Foreign and Defence Ministers issued a joint statement describing the decision as regrettable. It also mentions that this goes against the spirit of cooperation between France and Australia. It mentions that the American step of excluding a European ally shows inconsistency. Further, France stresses the need for European Strategic Autonomy (France Diplomacy, 2021).

The deal and subsequent events show that there may have been underlying differences between France and Australia even while entering the deal in 2016. According to Dr. Peter Jennings of the ASPI, France viewed the deal as part of a geopolitical strategy in the Indo-Pacific. At the same time, Australia saw it more as a commercial transaction. From a political viewpoint, Dr. Jennings believes this is part of Anglosphere connections (Jennings, 2021). While Australia and UK are both Commonwealth countries, the USA is not part of this grouping even if it uses the English language. Another ally of the USA, Canada, is also a Francophone country. Australia discarded the deal with France since it was becoming commercially unviable. Further, given that Australia has closer ties with the UK and still shares a head of state, they naturally converge on most matters.

It is a continued challenge for Australia to rebuild relations with France. There were suggestions for pecuniary compensation by Australia to the Naval Group. Given the geographic proximity of France's Indo-Pacific territories to Australia and India, there have long been possible convergences in benign roles of climate change, environment, and Maritime Domain Awareness. Australia could benefit from French presence in East Africa (Regaud, 2021, pp. 23-24).

Given the presence of the Overseas Territories of New Caledonia in the Pacific, Australia would continue to be a potentially reliable ally to France (Piper, 2021). Australia and India have long been middle-power allies of France and its overseas territories in their respective regions (Athreya R., 2021, p. 43).

India needs once again to take a neutral position between all concerned countries.

16.5 Australia India Relations

Australia and India have, in recent years, developed close maritime diplomatic ties. India has close ties with the UK (Athreya R., 2021). The AUKUS partners of Australia are both friendly countries to India. Some suggestions to enhance the Commonwealth link may include the UK (Athreya R., 2020a, p. 74).

Joint Operations: India operates Airpower and maritime diplomacies jointly (Athreya R., 2021, p. 43). In the case of Australia, India participated in the Royal Australian Air Force lead EX PITCH BLACK in 2018 (Government of India, 2021). More recently, India participated in the USA lead EX SEA DRAGON along with Australia, Japan, and Canada.

This participation once again shows the natural convergence of navies and air forces. While the USA, Japan and India were represented by their Navies, the Royal Australian Air Force and Royal Canadian Air Force represented their respective countries (Commander, US 7th Fleet, 2021). The inclusion of Canada in this exercise shows the extension of the historic Commonwealth Dominion link to the Northern Pacific.

In April 2022, India and Australia held the India - Australia Maritime Patrol Reconnaissance Aircraft (MPRA) Coordinated Operations. The Indian Navy deployed their P81 Maritime Patrol and Reconnaissance Aircraft to Darwin (Ministry of Defence, 2022). In return, the Royal Australian Air Force P-8A Poseidon aircraft has deployed to India under a combined India-Australia maritime surveillance initiative (Department of Defence, 2022).

Ministerial Meetings: There was a 2+2 meeting with the Australian and Indian Foreign and Defence Ministers in September 2021, soon after the announcement of the AUKUS deal. This meeting reaffirmed the close cooperation in the Indo-Pacific, including in defence diplomacy.

The Australian Defence Minister Peter Dutton was keen to invite India to join EX TALISMAN SABRE (Ministry of External Affairs, 2021). This is a joint exercise between Australia and the USA. Participants in the latest iteration included Australia, the USA, Canada, Japan, New Zealand, South Korea, and the UK (Department of Defence, 2021).

India and Australia recently held Foreign Ministers' meetings on the sidelines of the Northern Quad. These Foreign Ministers' meetings restated close ties (Minister of Foreign Affairs, 2022). There were also meetings of the Trade ministers that supported ties in trade and tourism (Minister for Trade Tourism and Investment, 2022). A cross-government statement by ministers of foreign affairs, trade and tourism, employment, communications, and immigration spoke of close ties with India (Minister for Trade Tourism and Investment, 2022a). This statement shows that ties are being extended to other domains besides security and trade.

The two Prime Ministers held a virtual summit on 21 March 2022. Prime Minister Modi appreciated the briefing by Prime Minister Morrison on the Australia-UK-US (AUKUS) partnership. The Leaders recognised Australia's commitment not to develop nuclear weapons and to uphold the highest standards of non-proliferation. There was a reaffirmation of continued maritime cooperation in the Indo-Pacific, ASEAN centrality the Quad. The two countries supported UNCLOS and welcomed enhanced maritime

information-sharing and maritime domain awareness. They affirmed their commitment to build upon defence information-sharing arrangements to coordinate more closely across the Indo-Pacific. There was a call for a ceasefire in Ukraine. India plans to participate in Australia's Indo-Pacific Endeavour exercise later this year (Prime Minister of Australia, 2022).

India-Australia bilateral ties are ingrained in their foreign policies and transcend party political agenda. Following the election of the new Labour Government in Australia, Australian Deputy Prime Minister & Minister for Defence, the Hon Mr. Richard Marles MP, visited India from 20-23 June 2022. The Indian Defence Minister Rajnath Singh held a meeting with Mr. Marles. They reaffirmed their commitment towards the implementation of the Comprehensive Strategic Partnership. They welcomed the growing defence exercises and exchanges between the two countries. They agreed to build upon operational engagements through the India-Australia Mutual Logistics Support Arrangement (Defence Minister, 2022). India-Australia bilateral ties are clearly ingrained in their foreign policies and transcend party political agenda.

Training Links: Vice Admiral Jonathan Dallas Mead, an alumnus of the National Defence College of India and formerly Australia's Defence Adviser to India, heads the Nuclear-Powered Submarine Task Force (Department of Defence, 2021). While his connections with India may be coincidental, it gives a shared link. Australia and India have long mutually trained the other country's officers (Australian High Commission, New Delhi, 2021). An important part of Military Diplomacy is training the country's armed forces (Malik, 2013, p. 181). This connection also points to the Commonwealth connections and exchanges in staff colleges (Athreya R., 2021). These connections create a Soft Power opportunity for India.

Most recently, there has been the creation of the General Rawat India-Australia Young Defence Officer Exchange Program (Prime Minister of Australia, 2022). India is known to have training links with several countries (Athreya R., 2020). While these are primarily developing countries, the above example demonstrates that officers from developed countries are also being trained in India.

Defence Technology: Minister Marles, on the above visit to India, first landed at Goa on the Western Indian coast and visited the Indian state-owned Goa Shipyard Limited. He was briefed about India's latest naval technologies and manufacturing (Goa Shipyard Limited, 2022). The Ministers discussed further opportunities for industrial cooperation between India and Australia to increase the resilience of supply chains and deliver capabilities to their respective defence forces (Defence Minister, 2022). Besides being a strategic ally at sea and in diplomatic fora, Australia, as a long-term ally, is cooperating in creating defence production capabilities. In a joint statement, both Ministers committed to giving a fillip to the India-Australia Joint Working Group (JWG) on Defence Research and Materiel Cooperation

Besides being a strategic ally at sea and in diplomatic fora, Australia as a long term ally is cooperating in creating defence production capabilities.

Rare Earths: Critical minerals are a new area of cooperation between India and Australia (Prime Minister of Australia, 2022). This area is vital since many of these have applicability in the defence sector (Krishnan, 2022). There have long been suggestions for India and Australia's cooperation in this sector (Bhaskar, 2019).

16.6 France Strategic Position

The French Government has released several documents to enunciate policy on the Indo-Pacific. India has been France's valued defence and strategic partner (Athreya R., 2021). The Defence and National Security Strategic Review of 2017 mentions that France has permanent deployments in overseas territories in the Indian and Pacific Oceans. These areas and their stability are essential to France (French Republic, 2017, p. Para 59). This document considers China a rising power that can challenge the United States (p. Para 118). China's assertion in the South China Sea is seen as significant (p. Para 57).

There is a document titled France's Defence Strategy in the Indo-Pacific (Ministere Des Armees, 2019a). This document mentions that the US, China, Japan, India, and Australia have adopted maritime strategies. It mentions Australia, India, Japan, and Australia as major defence partners (p. Para 17). These partnerships are significant for India, given that India and Australia are members of the Northern Quad, Japan, and the USA. French Strategy in the Indo-Pacific document also mentions India as an important partner (Ministry of Europe and Foreign Affairs, 2019b, p. 16).

The presence of France in the Indian Ocean is due to Reunion Island. New Caledonia and French Polynesia make France a Pacific power. In both regions, the support respectively of India and Australia has become important (Grare, 2020).

France-USA Relations: France has long had a policy of Strategic Autonomy. It thus may not want to be part of an alliance that we lead against China (Pajon, 2020, p. 174). France has had a long and chequered military relationship with the USA and UK dating back to the Second World War. There is a call from France for European Strategic Autonomy and less dependence on the USA lead NATO (Peifer, 2021). The President of the European Commission, Ursula von der Leyen, has spoken in favour of France and expressed disappointment at the cancellation of the deal (von der Leyen, 2021). Some scholars believe France is perhaps disillusioned by USA lead global non-proliferation norms (Joshi, 2021).

India France Relations: India has long had good relations with France. Since it is a resident power in the Indian Ocean, there is close cooperation. There are joint military exercises and humanitarian cooperation. Given the common thread of Strategic Autonomy, there are suggestions for an Australia-France-India trilateral (Athreya R., 2021).

France is India's most important European Union ally and a long-term defence partner. India could replace Australia as a regional partner in the Indo-Pacific (Thakur, 2021). India is keen to enhance its nuclear submarines and not depend on Russia. France could be a potential source of this technology (Joshi, 2021).

India needs to maintain cordial ties with France along with Australia and USA.

16.7 United Kingdom Strategic Position

The entering of the AUKUS pact is also a reflection of the UK's foreign policy. The latest central document is the Integrated Review of Security, Defence, Development, and Foreign Policy (HM Government, 2021). There is a mention of the Indo-Pacific tilt. Security intensifying geopolitical competition is mentioned. Also stated is the need for freedom of navigation for trade going through multiple choke

points (p. Para 66). South China Sea and Strait of Hormuz are expressly mentioned (p. Para 92). The importance of middle powers, especially in the Indo-Pacific, is highlighted (p. Para 27). There is a mention of the need for defence and humanitarian relations with India (pp. Para 62,67). There is also the UK Maritime Doctrine (Development Concepts and Doctrine Centre, 2017). This doctrine mentions the Strait of Hormuz as a vital choke point (p. Para 14). This document considers naval diplomacy necessary (p. Para 22). This diplomacy can be competitive or collaborative (p. Para 53).

Some scholars believe that the UK is attempting to chart a foreign policy independent of Europe in the post-Brexit scenario. It further opines that UK foreign policy depends on the United States (Brown, 2021). British scholars believe that the UK has, for the past year, been attempting to make its presence felt in the Indo-Pacific (Niblett, 2021). However, this depends on Commonwealth links, especially with Dominions (Athreya R., 2021).

The UK, however, has the challenge of rebuilding relations with France. A more profound challenge is the possible chasm within NATO (Billon-Galland & Kundnani, 2021). The UK's defence priorities remain in Europe. There are hopes for the UK to have a more significant role in NATO (Niblett, 2021).

India should maintain cordial ties with the UK even if it is not a principal ally.

16.8 United States Strategic Position

The United States of America has long been active in the Persian Gulf region. The US National Defense Strategy (NDS) states that it will support a free and open Indo-Pacific. Further, it will build partnerships for deterrence and free access to common domains (US Defense Department, 2018, p. 9). The Indo-Pacific Strategy Report mentions the relevance of a Free and Open Indo-Pacific. This relevance includes governance, peace, diplomacy, economics, and security (Department of Defense, 2019, p. 3). The NDS aims to have a stable Middle East that enables stable global energy markets and trade routes.

Given that China is a rising power, the US is now no longer a dominant power and has to act in concert with allies (Brown, 2021). There is a view that the USA prefers giving Australia nuclear technology over other regional powers like South Korea or Japan (Thakur, 2021). This preference points towards a conscious power transition to an ally.

India should be able to benefit from US cooperation while avoiding joining any alliance.

16.9 India Strategic Position

India has long had a Realist approach to Strategic Affairs (Ranganathan, 2020). While India may like to profess Strategic Autonomy, it has, in recent years, not openly opposed the position of the United States of America (Athreya R., 2021a). In the latest Northern Quad Foreign Ministers meeting, the joint statement did not mention Russia and the current Ukraine crisis (Ministry of External Affairs, 2022). This avoidance of mentioning Russia is notwithstanding USA's current tensions with Russia on this issue. In contrast, Australia supports the NATO position on Ukraine and Russia (Minister of Foreign Affairs, 2022). The latest bilateral called for a cessation of hostilities. They agreed to remain closely engaged on the issue and its broader implications for the Indo-Pacific (Prime Minister of Australia, 2022).

India has embarked on maritime diplomacy in the past two decades. The Indian Navy released the first doctrine in 2009. In 2007, Freedom to Use the Seas: India's Maritime Military Strategy was released (Indian Navy, 2007). A second version of the Indian Maritime Doctrine was released in 2016 (Indian Navy, 2015). The same year, a Maritime Strategy Paper was also released (Indian Navy, 2016).

The latest Joint Doctrine of the Armed Forces was released in 2017 (Headquarters Integrated Defence Staff, 2017). These provide the conceptual basis for India's defence policy and Strategy, including Military Diplomacy. The Indian Air Force released a doctrine in 2012 (Indian Air Force, 2012). It mentions the vision of the IAF as follows:

To acquire strategic reach and capabilities across the spectrum of conflict that serves the ends of military diplomacy nation-building and enables force projection within India's strategic area of influence (Indian Air Force, 2012, p. 1).

Defence Diplomacy: The primary aim of India's defence diplomacy is to promote goodwill towards India overseas (Headquarters Integrated Defence Staff, 2017, pp. 21-22). The two main aims are increasing cooperation and signalling intent to rivals (Athreya R., 2020, p. 60). The larger purpose of the Navy's diplomatic role is to favourably shape the maritime environment to further national interests in consonance with foreign policy and national security objectives (Indian Navy, 2015, p. 151). As part of maritime diplomacy, India has adopted visions of security and growth for all in the region (SAGAR) and the Indo-Pacific Oceans Initiative (IPOI) (Athreya R., 2020a).

AUKUS is bound to act as a deterrent to China. Thus, it would indirectly be to India's benefit. A nuclear-armed ally would also be to India's advantage (Joshi, 2021). It is a welcome development if this shapes the maritime environment to India's benefit.

However, in response to the transfer of nuclear technology by the USA to an ally, there may be similar attempts on the part of China to give such technology to Pakistan or North Korea (Sethi, 2021). India needs to oversee this space since it will impact India's position on global nuclear non-proliferation.

There are issues with India's strategic position and threat perception being understood. India is currently seen as a reliable ally by Australia, France, and the USA.

As is evident, India must balance all parties while safeguarding its interests.

Track 1.5 events are important in this context (Athreya R., 2020). This event organised by IIRF seeks to fill that gap. The latest Northern Quad Foreign Minister's meet reaffirms the need of such exchanges (Ministry of External Affairs, 2022).

16.10 Other Groupings

Some other groupings in the region are also significant.

- **ANZUS:** Australia, New Zealand, and the USA entered the ANZUS Treaty in 1951. There is a mutual defence clause (Department of Foreign Affairs and Trade, 2017, p. Para 5.8). These close ties continue between Australia and USA. There is a view that AUKUS cements existing ties. It could also give Australia a greater say than USA and UK (Fruehling, 2021).

- **Five Eyes:** Australia, Canada, New Zealand, the UK, and the USA are part of the Five Eyes intelligence sharing agreement (Department of Defence, 2020, p. Para 2.8). As can be seen, all three AUKUS countries are part of this group.
- **Five Powers Defence Agreement:** Australia, Malaysia, Singapore, NZ, and the UK are part of the Five Powers Defence Agreement. This agreement again reaffirms the Commonwealth connection (Athreya R., 2021). Here too, there are two AUKUS states present.
- **FRANZ:** Australia, France, and New Zealand entered an agreement in 1992. FRANZ is a civilian-led arrangement that is supported by defence forces. Under the arrangement, the three partners agree to coordinate disaster reconnaissance and relief assistance in the Pacific when requested by partner countries. A majority of Pacific Island countries are partners.
- **Northern Hemisphere Quad:** Australia, India, Japan and USA form the Northern Quad (Athreya R., 2021). This grouping has long had a security dimension along with HADR. It is, however, also embracing other Soft Power aspects like Supply Chains and Vaccines (Ministry of External Affairs, 2021). In a statement, the Indian Foreign Secretary Harsh Vardhan Shringla said AUKUS would have no impact on the Northern Quad (Ministry of External Affairs, 2021a).
- In the latest meeting of Foreign Ministers, maritime security was mentioned, including UNCLOS and Non-Traditional Threats. There was also a mention of HADR, Vaccines, Cyber Security and Clean Energy. Interestingly terrorism was mentioned with specific reference to 26/11 and Pathankot (Ministry of External Affairs, 2022). Thus, India continues to receive support on its security concerns.
- **Southern Hemisphere Quad:** USA, Australia, France, and New Zealand are part of the Southern Quad (Athreya R., 2021). There have been suggestions for a Pacific 7 of the two Quads and the UK (Athreya R., 2021). All these countries see India as a reliable partner. All these countries see India as a reliable partner.

16.11 Conclusion

AUKUS is the most significant development in military diplomacy in the Indo-Pacific. While there have been several commentaries on AUKUS, this paper is an early academic study. This paper has studied the position taken by Australia as the principal participant in the AUKUS agreement. It has also studied the positions of France as an affected country. The policies of the UK and USA are also studied. Based on these recommendations are made for further action by India.

This paper applied power transition theory as an explanatory framework. In terms of transition, the USA is a dominant power losing ground. Just as the sun set on the British Empire after World War Two, the sun is now setting on the USA lead global order. In order to address the dissatisfaction, it is turning to allies to fill the gap. Australia seeks to increase its scope and power as a rising power in the region.

The USA is transferring technology to friendly allies not to have to remain the sole dominant power. As a now declined dominant power, the UK seeks to support the transfer of power from a previous dominant ally to a new one. At another level starting from ANZUS in 1951, Australia was part of the USA lead bloc, and the deal with France in 2016 was deviant.

Australia has a foreign and strategic policy based on Realism. Interestingly Australia sees the nuclear weapons of North Korea as a cause for concern and, accordingly, has sought to develop these capabilities even within the scope of non-proliferation. Realist considerations have governed Australia's decision to scrap the deal with France. In purely technological terms, it is to be seen to what extent AUKUS can deliver results. Assuming Australia wants to emerge as a power in its own right after acquiring nuclear technology, it should be considered separate from any bloc.

As a middle power, France would not like to lose ground and is maintaining Strategic Autonomy. For Realist reasons, France may not alienate Australia, the UK, or the USA. However, given France's Strategic Autonomy, Australia may have preferred to enter a pact with a supposedly dominant power.

India, too, is a rising middle power. Given the commonality of goals with all three AUKUS countries and France, India should maintain Strategic Autonomy and not be seen as part of a bloc. As a neutral middle power, India should maintain neutrality between all powers. Any decision on whether to buy nuclear submarines and from where these are to be sourced should be based on technological and strategic considerations. As the latest Northern Quad Foreign Minister's Statement exemplifies, India continues to have support on relevant issues, including UNCLOS and terrorism.

Importantly Australia and India continue to have close bilateral ties. Further, India has not sacrificed its Strategic Autonomy. India should weigh these factors in taking a call.

These bilateral ties are exemplified by the recent bilateral meetings of the Foreign Ministers, Trade Ministers, and the newly appointed Defence Minister. As can be seen, the change of political party has had no impact on bilateral military and diplomatic ties. Interestingly India and Australia are also moving toward cooperation in defence technology.

India should certainly not oppose or criticise AUKUS. The latest bilateral with Australia, where India supports the Australian position, is a welcome step. This alliance, even if indirectly, serves the purpose of signalling India's main rival, China. Given the shift away from the Northern Quad from hardcore security, AUKUS may have a role. Even if India were to benefit from this indirectly, it would be favourable. As both Quads and the other participants in joint exercises, all these countries seek to deter China, which is seen as a rising power that seeks to dominate.

Soft Power diplomacy, including training, has again come to the forefront. Vaccines remain a common link for the Northern Quad. There are also shared links to staff and officer training. In the case of Australia and the UK, there is a shared Commonwealth link. These should be a common platform for India with all three AUKUS member states.

This paper highlights the possible more considerable relevance of AUKUS to all three services and integrated defence from an Australian perspective. This perspective is relevant since there is often a merging of navies and air forces for maritime air power. In India, this is relevant since there is cooperation with Australia of both the Indian Navy and Indian Air Force. India already has air power diplomacy with all Northern Quad and AUKUS countries in creating this new alliance.

These developments also raise more significant global-level issues. The role and relevance of NATO may be coming under question. Nuclear non-proliferation also comes to light with the AUKUS treaty. India endorses Australia's stance on non-proliferation. There may also be an impact on such technology transfer in India's neighbourhood. These raise more significant issues at a global level.

Rare Earths are a crucial area of cooperation. An important aspect is India's continued close ties with Australia. We can see such close ties across the board. On Ukraine, notwithstanding differences, there are attempts at a consensus. This consensus is in keeping with Strategic Autonomy.

Think tanks and track 1.5 events are also significant. The IIRF Events and Yearbook are essential steps in this regard.

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INDUS INTERNATIONAL RESEARCH FOUNDATION
THOUGHTS BEYOND BOUNDARIES



Section 17

INDIA-TAIWAN: WAY FORWARD

By Gp Capt. AV Chandrasekaran



17.1 Introduction

India and Taiwan are both vibrant democracies, and both countries have young, highly educated populations capable of taking their countries to heights. While India enjoys the status of an independent country in the global consortium, Taiwan, on the contrary, finds itself singularly in less than an enviable position. Taiwan frames its national laws, enjoys a clear-cut political system, and an enviable economy which also boasts of the production of high-end technical products and enjoys more than a considerable presence in global supply chains marketing various products. For all its laudable achievements, Taiwan is yet to receive formal diplomatic recognition from most of the countries in the pecking order as the states are wary of provoking China which claims prepotency over Taiwan as a part of its One China principle. Despite constant endeavours, Taiwan struggles to maintain friendly and harmonious relationships with other nations, mainly to the rise of China in the global arena. This time-tested timidity by the major nations ensures that the 23.9 million Taiwanese can conduct business, travel without restrictions to almost all nations, and unfortunately, compete at the Olympics under the name “Chinese Taipei, thus deprived the privileges of statehood (Worldometers, 2022).

A comparison between an elephant and a rhinoceros in the room, the latter is both loathsome and troublesome. India's relations with Taiwan have yet to take the desired trajectory due to the presence of the Chinese Rhinoceros in the room. India's complicated relationship with China has also been playing a role in prohibiting Delhi and Taiwan from escalating their relationship, and India's acceptance of the one China policy also hinders India from actively participating with Taiwan in all spheres. The Chinese Government wrongly conjectures that the body of nations which recognise the PRC should not maintain diplomatic relations with the Government in Taipei. Be that as they may, it does not insist upon toning down its continued cultural and economic affiliations with Taiwan. It was in the year 1995, under the Indian Prime Minister Shri Narasimha Rao, that India established unofficial ties with Taiwan. It is pertinent to mention that India and Taiwan did not maintain even a semblance of institutional contact. It is due to the complexity of the situation and India's inability to steer the transition that even post 1995, India continued its relations with Taiwan treading on utmost caution and confined mainly within the realm of people-to-people relations, without actually vouchsafing diplomatic recognition to Taiwan (Karackattu, 2019).

Despite India's best untiring efforts to maintain congenial ties with China, it has to draw pessimistic conclusions as China has not reciprocated in kind. The past decades have witnessed steady unsteady India-China relations, and the Chinese policies have profoundly impacted the domestic security concerns in India, including wayward Chinese comments on the status of Jammu & Kashmir. The unwavering Chinese support to Pakistan over Pakistan-Occupied Kashmir (POK) and the illegal construction of CPEC through the Gilgit - Baltistan area, trying to give legal legitimacy to the projects despite India's repeated objections at various international fora, amply brings out the sinister design of China and its perceived ignoring of the "One India" policy (Tiwari, 2021).[iii]

Its salami-slicing tactic of expansionism by refusing to resolve border disputes is all too obvious. The recent territorial aggressions by China in Doklam and Galwan corrodes trust and has India rethinking its potential engagement towards Taiwan. A range of concrete steps needs to be initiated to expand the sphere of engagement in multi fields ranging from technology exchange, cyber warfare, trade and training. The paper intends to bring out that despite the absence of diplomatic ties, India should try formulating long-term approaches to enhance the engagement level between the two (Singh, 2017).[iv]

17.2 Isolated Historical Occurrences

It was in 1949 that India officially recognised the PRC (People's Republic of China) and not the ROC (Republic of China) as Taiwan had christened itself. It adopted the faulty One-China policy and strongly supported the restoration of the PRC in the United Nations, thus earning the sobriquet of Global Spokesperson of the One China policy (Deepak & Tripathi, 2016)[v]. Due to India's sad and familiar refrain, the ties between India and Taiwan remained frozen during the Cold war, which saw many wars and regime changes perpetuated by the then superpowers USA & USSR. The 1962 war saw a nose dive in India's relations with China, and India failed to read the pre-assault indicators by China. India had learned the bitter lesson about China's untrustworthiness after the 1962 debacle, which made it rethink its fatal flaw of ignoring Taiwan. In the intervening decade between 1961 and 1970, there was a diplomatic standstill with China and saw an increase in contact with Taiwan as India's relations with the PRC steadily deteriorated

and suddenly saw a surcharged Prime Minister Nehru who was standing up to Chinese intimidation. The apparent reason to increase its intimacy with Taiwan was to put China on notice of its One China policy.

The maiden recorded and reported occurrence of Indian official visitation to Taiwan was the visit of the then Indian ambassador to the Philippines, who attended the Republic of China's National Day celebrations on 10 October 1961. In August 1963, Shri Bohra, Secretary General of the Indian Military Committee, visited Taiwan. In October 1963, Minoo Masani, a Member of the Indian Parliament and co-founder of India's one-time opposition Swantantra Party went on a tour of Taiwan. Further, a delegation of 10 Indian legislators also visited Taiwan in June 1964. The Indians raised the ante as all these visits were overt with no cloud of secrecy. These visits saw a positive response from Taiwan, who were receptive to renewing relations. However, the most high-profile visit by an Indian was in 1968 when Deputy Prime Minister Shri Morarji Desai visited Taiwan, much to the annoyance of the Chinese and his reference to "two China" in Japan drew the Chinese ire (Baron, 2017).

The visits by Indians to Taiwan were virtually reciprocated as both countries realised that China did not possess commonplace decency and decided to press on regardless. There were numerous visits by Taiwanese officials to New Delhi. Moreover, the visit of Taiwan's Economic Minister Li Kwoh-ting — hailed as the planner of Taiwan's "economic miracle" — and Deputy Minister of Foreign Affairs Sampson Shen to a UN conference in India in 1966 infuriated the PRC. The visit of yet another Taiwanese delegation to attend a UN event in 1968 drew guard dog growls from the Chinese, who charged India of trying to create two Chinas (Jha, 2016)[vi]

However, this short honeymoon was to end soon when Shri Rajiv Gandhi visited China in 1988 and formalised relations as a part of the deconfliction protocol. However, India had a visionary as Prime Minister Shri Narasimha Rao, who was practical and was years ahead of his counterparts in charting the trajectory of India's overall growth. He donned the mantle of the Prime Minister when India was badly hit economically during the economic crisis of 1991 and desperately needed an injection of foreign capital to boost its sagging economy and thus set her eyes on attracting FDI. These self-evident circumstances facilitated India's looking up to Taiwan, enjoying positive economic growth and hence initiated the maiden step.

The regular unofficial visits by high-profile Indian politicians and bureaucrats to Taiwan sought to explore economic opportunities. The most significant of these visits was the Indian delegation led by Shri Inder Kumar Gujral, a Rajya Sabha Member, in 1992. The delegation included several eminent personalities like R.N. Malhotra (retired Governor, Reserve Bank of India), A.P. Venkateswaran (retired Foreign Secretary) and Charan Das Wadhwa (an eminent economist) and met all important personalities of Taiwan, including its President Lee Deng-hui. This visit to Taiwan aimed to garner support and scout for FDI for India. These contacts were a shrewd prelude by the Indian Prime Minister to establishing relations in 1995.

After testing the diplomatic waters with Taiwan, the then-Indian Prime Minister Shri Narasimha Rao gave his nod to India-Taipei Association (ITA) in 1995. A seasoned diplomat, Vinod C Khanna of the Indian Foreign Service, was appointed as the Director General of the ITA. As a reciprocal gesture, Taiwan opened a Taipei Economic and Cultural Centre (TECC) in New Delhi. Intriguingly the ITA and the TECC were not official embassies. However, both agencies were given powers to execute agreements in mutually functional areas on behalf of their respective governments without their direct involvement.

The beginning of this informal affiliation was sans any detriment to India's support of the One-China policy as India tended to follow the path of least resistance.

Understandably India did not do anything major to cause a Chinese snarl and kept its good relations with China going at the cost of silently ignoring Taiwan's overtures. Any amount of appeasement by the Indians could never impress the Chinese, who always kept Indians at bay and nudged Pakistan to act against Indian interests. This policy was followed by Shri AB Vajpayee, who succeeded Shri Narasimha Rao as the Prime Minister of India, without realising that India was running its head straight into the Chinese noose. Since then, India has been unwilling to resist China's aggressive posturing.

17.3 Gaining a Toe-Hold

India had displayed its ambivalent foreign policy towards Taiwan to appease China. However, it did not pay any dividend to India as the Indians were under a false notion that China was maintaining peace and accepting the LAC. However, the truth was contrary to Indian beliefs as the Chinese were on a militarily and economically consolidating spree. 2015 pronounced the 20th anniversary of establishing the India-Taipei Association (ITA) in Taiwan and the Taipei Economic and Cultural Centre (TECC) in India. The journey of 20 years has ensured progress only on the economic front but not in other spheres on expected lines. India should seriously reconsider its abandonment issues with Taiwan and place its national interests, not the third party's ones, in pursuance of its strategic goals when it calibrates deepening relations with Taipei.

An across-the-bean counter comparison between India and China will bring out India's need to develop closer ties with Taiwan. The population of Taiwan is a minuscule 24 million compared to India's mammoth 1.2 Billion, a whopping 52 times the population of Taiwan, which is marginally less than that of Haryana, a medium-sized north Indian state. Territorial India is 90 times bigger compared to Taiwan's 35,980 SQ km. These gross disparities notwithstanding, both countries share a common dispute dynamics with China. Both countries have democratically elected leaders at the helm of affairs and share amicable relations sharing similar values with zero disputes between them. Both countries are concerned about China's growing assertiveness and scant disregard for international norms in respecting border sanctity. Since India and Taiwan constantly remain alert and watchful to the escalating Chinese military footprints, there is a common ground to address mutual concerns. This factor can foster closer military and strategic relations, but unfortunately, action from India is not forthcoming. India should effectively ensure its binary choice in favour of Taiwan (Fang, 2016).

17.4 Drivers, Directions & Decisions

It is no secret that Taiwan deeply discerns China's strategic depth owing to its geostrategic proximity and morphological and cultural links. A more intimate relationship with Taiwan would help India gauge the depth of Chinese strategic thinking. It is also true that bonds formed in adversity will certainly strengthen what remains of the relationship to move it forward. The case of India and Russia is a classic example of bondage. The Indian Government has inevitably been going out of the way to enhance its triangular

and quadrilateral coalitions with the US, Japan and Australia as part of its Act East Policy and regional security strategy. It is high time that India plays the battle of slow attrition. Including Taiwan in this forum would satisfy its anxious longing and could be crucial to strengthening democratic forces in the Pacific (Chellaney, 2022).

Despite not having formal diplomatic ties, Taiwan and India have witnessed citizens of both countries bonding over a mutual feeling of being targets of bloc confrontation by illegal Chinese intimidation and bullying. Further, the Indians have ceased using the term one china policy for the past few years, thus sending a subtle yet strong message to the Chinese (Aspinwall, 2020).

There have been several calls from academics and intellectuals in the strategic community across India to deepen ties with Taiwan. The present Government's appointment of seasoned diplomat Shri Gourngalal Das as its new envoy to Taiwan is signalling a foreign policy change and India's seriousness in addressing the issue. This move is a significant step forward from India's general policy of risk aversion and soft diplomacy (Siddiqui, 2020). The appointment of Das as envoy to Taiwan was not a shot in the dark but a well-calibrated decision. His appointment was announced a week after two BJP Members of Parliament, Meenakshi Lekhi and Rahul Kaswan, at the behest of their party, chose to attend the swearing-in ceremony of Taiwan President Tsai Ing-wen on 20 May 2020 virtually. This attendance was a mere fortnight after the Chinese perpetuated standoff on the Line of Actual Control in the Galwan area (Indian Express, 2020).

17.5 Case for Optimism

However, not all is bleak in the shaping of India-Taiwan relations. There are multiple fields in which both countries can effectively cooperate and take their relationships to the next level. As Taiwan looks to the south as part of its new southbound policy (NSP) seeking to expand links with South and South East Asian nations, there has been a particular emphasis on improving its relations with India. The Chinese constraint in developing relations needs to be done with more creative thinking. Both countries must identify areas where interests converge and are complementary, or they can engage stakeholders. The possibility of a broader and deeper engagement is highly possible in consonance with India's "act east" policy, which encompasses health, economic, technological, cultural, tourism, military and security engagement with Taiwan.

17.6 Health Diplomacy

The world witnessed Taiwan's excellent handling of the Covid Pandemic when it effectively nipped it in the bud, thus averting a health crisis through excellent health preparedness and proactive response mechanism. When the COVID-19 Pandemic in the initial stages was spreading across the globe rapidly, the Taiwan model for disease control enticed global attention. The lessons conjectured from the first-hand experience with Severe Acute Respiratory Syndrome (SARS) in 2003 effectively prepared Taiwan for a quick reaction to COVID-19. A combination of evidence-informed expeditious response, excellent workplace dynamics with all stakeholders, early and timely capacity building, and absolute transparency in decision-making allowed Taiwan to effectively overcome the Pandemic and curb the spread of the

disease along predicted pathways, without the accompaniment of strict lockdowns that characterised the response by other countries.

Taiwan embarked upon a self-appraisal on the requisite course of action, much in advance of the WHO, which deliberated and declared COVID-19 as a public health emergency of international concern only on 30 January 2020. In anticipation of local and global needs, Taiwan accelerated the production of masks and other essential medical supplies. This gesture facilitated it to fulfil domestic requirements and offer generous aid to other countries. This proactive approach enabled Taiwan, in 2020, to donate over 51 million masks to more than 80 countries, contributing to and aiding their pandemic-fighting efforts (Nundy, 2022).

In addition, the country simultaneously steered and stabilised its economy in the difficult times post-pandemic when most of the global economies stood tottering. There were several reassured preference calls from countries close to Taiwan to include it in the World Health Assembly (WHA) as a member, a privilege it has been denied wrongly since 2016 at the behest of the Chinese.

Further, the Covid-19 crisis, when analytically considered, can be a milestone in shaping India-Taiwan bilateral relations. The deft handling of the Pandemic with minimal panic by Taiwan could serve as a good template for carrying out a case study for India and the rest of the world. The approach to containment paved the way for Taiwan to effectively shift focus from "pandemic containment to a robust campaign of health diplomacy." Further, Taiwan's timely provision of masks and PPE kits to India during the Pandemic essentially helped India tide over the medical crisis. It ushered in new avenues to enhance India-Taiwan health sector cooperation (Nagda, 2020). In addition, Taiwan also delivered 150 oxygen concentrators and 500 oxygen cylinders to show its strong commitment towards India.

One can never say with certainty that the world has witnessed the last COVID pandemic. There always lurks a fearsome possibility of the outbreak of a new virus which might be a variant of the existing COVID virus. If a new virus threatens to appear, it is better to be guarded and safe than sorry. It will be ideal if India and Taiwan cooperate on managing and governing emergent outbreaks with Taiwan's excellent medical system in place. There were close to 10,000 Indian doctors who were trained by their Taiwanese counterparts sharing their best practices with India. There exists a unified system involving multiple ministries in Taiwan. It was proved that inter-ministerial response is a definite key to responding to such viral outbreaks and would have a massive impact on public safety. If India could effectively use this shared knowledge of this inter-governance mechanism, it would go to great lengths to ensure that India remains capable and ready to counter any medical eventualities.

The relations can bring additional benefits to both nations as India has tremendous proven vaccine expertise starting from indigenous research, mass manufacture and effective deployment that can be shared with Taiwan. This exchange of expertise can form the backbone for a long-term sustainable partnership extending beyond the COVID-19 vaccines. This India-Taiwan medical and healthcare collaboration can help create better and newer vaccines for existing neglected diseases and cement a long-term partnership that can be swiftly leveraged to rapidly create vaccines against emerging diseases (Nundy, 2022).

There is a unique medical field unique to the Asian countries that India and Taiwan are embarking on cooperating. Both countries are earnestly attempting to explore traditional medicine's medical benefits. India, a pioneer in various ancient traditional medicines, took the lead in initiating steps to enhance healthcare ties with Taiwan by donating US $ 20,500(NTD 570,000; INR 1.5 million) to the National

Research Institute of Chinese Medicine for work on traditional medicine. India, a master practitioner of Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy through its Ministry of Health, is collaborating with the AYUSH ministry. It is inspiring research on traditional medical systems being practised in India. Cooperation in this sphere, particularly to enhance the understanding of traditional medicines and the development of necessary analytical tools to test their efficacy and utility, can help their usage across the globe. The critical areas for collaboration are to identify ways of standardising traditional medicines, testing their utility and standardising manufacture. Further, training in traditional medicine can also be a focus area of cooperation.

There is another sphere in the medical field when both Indian and Taiwanese scientists can collaborate is the prosthetics and biomechanical suits. The prosthetics is an essential part of military rehabilitation for the wounded and prosthetics made using biomaterials can revolutionise the healthcare industry, particularly as the world faces an ageing population. Taiwan is fast emerging as the pioneer in precision medicine and would be a potential area of collaboration with India. The principle of Precision medicine is based on the application of technological tools to the analysis of massive genetic data. It would be in the best interests of both these countries if Taiwan's technological solidity coupled with India's data potency can be effectively used to harness this important emerging technology, transforming Taiwan and India into leading global pioneers in this field. Further, the targeted use of precision medicine on relevant diseases can help health outcomes and increase productivity in India and Taiwan (Hsiao, Lin, Fan, & Chen, 2022).

17.7 Economic Embrace

It does not require accentuation that better trade relations between India and Taiwan are necessary. However, the relations should be based on developing economic and political ties on their merit without factoring in the China factor. Taiwan and China have profound trade ties, and the economies of both countries are too closely entangled to de-couple suddenly. To enhance economic relations with Taiwan should refrain from countering the ongoing border issue with China, as reacting to short-term circumstances with long-term measures would be unwise. There are specific facts that need to be borne before India embarks upon any major trade deals with Taiwan, and it has to place pragmatism over passion.

It is irrefutable that Taiwan's economy, despite major challenges and significant differences with China, is closely integrated with the mainland Chinese economy. The available statistics reveal that 42 per cent of Taiwan's total trade is solely with China, amounting to US $ 166 billion (Xinhuanet, 2020). On the contrary, the bilateral trade between India and Taiwan in 2020 was mere $4.79 billion, which had dwindled from $7.05 billion in 2018. On similar lines, the Taiwanese investments in India linger at $1.09 billion and factoring investments through third countries, which would come to roughly $2 billion.

Over the past decade, Taiwanese firms have invested more in China, Vietnam, Thailand, Malaysia, the Philippines, Cambodia, and India. Taiwan's share of trade with India is around one per cent of its global trade. The figures on the board reveal that only around 200 Taiwanese companies are operating out of India, in stark comparison to nearly 100,000 in China. The Taiwanese workforce in China is roughly one million compared to a paltry 1,000 Taiwanese citizens in India. A fact that needs to be borne in mind is that there are around 300,000 Taiwanese based in Vietnam, which is considered a

popular investment destination for Taiwanese companies. The leading cause for this vast disparity in populating in India is the difficult living conditions in India and a not-too-friendly Indian population (Guha, 2021).

India needs to be culturally sensitive towards Taiwanese sentiments. There are numerous gaps between the Indian intention and actual realisation of the proposed investment due to a multitude of factors, including red-tapism, ineffective bureaucracy, and the absence of a way ahead framework, which has led to complications in the timely implementation of projects in the long term. These aspects must be addressed post haste to take the economic embrace forward.

On the positive side, India needs investment, and Taiwan is looking to diversify from its traditional investment targets (particularly China). Hence the creditable assertion is that India and Taiwan have complementary economic structures and high-quality human capital. There are several commercial synergies to explore, and Taiwan has an acknowledged hardware manufacturing expertise while India has an established software industry. It sounds nice when 'India and Taiwan' are referred to as IT to indicate that both countries complement each other. The time is ripe for Taiwan to extend a dominant handshake and leverage the open investment environment created by the Indian Government in the field of the semiconductor industry. Further, Taiwan can effectively rescind the hugely underutilised potential of India's extraordinary talent pool, highly skilled workforce, stable political and economic environment, colossal market access to 1.3 billion people, and emergence as a global IT hub (Carnegie India, 2022).[xviii] Taiwan's investments in India largely remain confined to Information & Communication Technology (ICT), electronic engineering, construction, optical, petrochemicals, and shoes.

To ensure the continuity of successful economic cooperation, India and Taiwan need to develop their economic relationship determined by how they reinforce their economic security, implying the ability of both countries to protect and advance each other's national economic interests (Madan, 2019). The joint report tabled by the Chung Hua Institution for Economic Research (CIER) in Taiwan and the Indian Council for Research on International Economic Relations (ICRIER) brings out the numerous new openings in multiple sectors ranging from logistics, automobiles and auto components, information and communication technology, food processing, distribution and retail, and human resource development. In addition, construction, infrastructure development and automobile sectors, textiles and shipbuilding have also been identified as potential areas for cooperation.

The present Indian Government has made an informed choice and introduced several measures to woo investments from countries, especially Taiwan. The introduced schemes to incentivise and ease investments in the semiconductor industry include the Design Linked Incentive (DLI) and Production Linked Incentive (PLI) schemes. Further ensuring ample funding, capital subsidies, and concessional rates for using land, electricity and power for semiconductor fabrication (fab) facilities are some of the positive measures introduced by India recently. The continuity of this posture would certainly shift economic cooperation on an upward trajectory.

Further, the following measures that could be considered and introduced would include

- Establishing free trade agreements (FTAs),
- Altering Indian import tariffs,

- Integrating Indian and Taiwanese investment incentives into the New Southbound Policy, and
- The Taiwanese Government needs a significant push for investment in India.

These measures might facilitate Taiwan to shift its production bases to India. If offered attractive tax holidays, automatic "one window" clearances, and intensive mandarin language training and cultural acclimatisation to facilitate a sizeable section of the Indian youth fully conversant with mandarin to act as intermediaries, it will significantly encourage such a shift. It is the absence of such facilities which was the single biggest obstacle to expanding trade ties. Taiwan needs to study India's business climate and market opportunities and be better aware of India's political and socio-economic environments, which would help Taiwanese companies.

17.8 Educational Ties

Indian students seeking to study abroad are not a new and current phenomenon. It has been going on for decades, primarily due to the absence of quality educational institutes in India. Moreover, an illogical demand-supply gap has been virtually forcing many families to send their children abroad despite steep financial requirements and the long time burden of loans. The reason for diminished expectations of the higher educational institutions in India is that the institutions offering specialised courses at the postgraduate levels are bursting at their seams. This overload forces Indian students to look for greener pastures that offer more excellent educational opportunities across the globe. These convenient opportunities have ensured that 7,70,000 Indian students are currently studying abroad, a substantial rise of over 20% from 4, 40,000 recorded in 2016. On the contrary, the growth in domestic educational institutions has witnessed a mere 3%, a stark comparison to the demand for education abroad (The Print, 2022).

Unfortunately, a country with a population of over 1.2 Billion has only around 80,000 seats in the medical colleges for the basic MBBS degree, which includes both Public and private medical colleges. As per statistics, close to 7 Lakh students clear the National Eligibility cum Entrance Test (NEET) annually, which virtually leaves 80% of the successful aspirants unable to pursue a profession of their choice. The cost of studies in the USA and UK, which offer medical education, is so steep that it is virtually beyond the reach of less than the elite population of India. Hence it becomes tempting for Indian students to consider alternate possibilities.

The number of Indian students studying medicine in China is all in a quandary as they have been debarred from re-entering China post-COVID due to a medical martial law imposed by China. These students' futures appear bleak, and this kind of educational exchange with irrational countries would never yield the desired results. Hence, it is important to have educational tie-ups with politically and economically stable countries. Taiwan fits the bill perfectly as it has excellent educational facilities, as most of the population of Taiwan is well-versed in English due to its global economic reach. As per the data, China has the maximum number of students studying in American Universities, with Indians following a close second. There were close to 1, 93,000 Indian students studying in American Universities. This large No of students studying abroad is akin to Indian students studying in the UK, Singapore, or South Korea. Taiwan, despite stiff competition, has an excellent opportunity to tap Indian

talents by rendering awareness through education fairs on its affordability, excellent lab infrastructures, cost of living, and employment opportunities. Taiwan's outreach in this field would go a long way as the primary concerns, all of which can be offered by Taiwan, for Indian students opting for higher education in foreign countries is:-

- Good environment,
- Reasonable fee structure with a possibility of a scholarship,
- Post-study work opportunities,
- Quality infrastructure and
- Decent remuneration after gaining employment.

According to Quacquarelli Symonds (QS) Asia University Ranking 2021, twenty-seven Taiwanese universities feature in the top 300 Asian Universities and rank among the top 1000 global universities. Additionally, the Times Higher Education Impact Rankings, the only global performance tables that assess universities against the United Nations' Sustainable Development Goals (SDGs), identify Taiwan as one of the top ten places with the most inexpensive fee structure to study at the university level. Naturally, Taiwan becomes a better alternative for Indian students in terms of cost and standard of living compared to the other top educational hotspots in Asia like Singapore, South Korea, Hong Kong and Japan. The education sector needs to be exploited by both countries as Taiwan has the capacity and India needs the capacity, an opportunity that can be mutually beneficial.

There are not more than 1500 Indian students in Taiwan, and it is a fact that the numbers have doubled over the last five years, but this is still a trickle compared to half a million Indian students studying outside India. Taiwan may also consider offering scholarships to bright students opting to do their higher studies in Taiwan as it would go hand in hand with the Indian Government Skill India programme.

In addition, in consultation with its companies, especially those interested in doing business with India, Taiwan may sponsor scholarships and create apprenticeships or internships for Indian students. The measures would mutually benefit both countries by providing work experience for the students and giving the companies access to skilled individuals familiar with India. Both countries can also frame an MOU after a detailed study to offer recognition of both degrees and diplomas from either country (Nair, 2020). To take the educational relationship further, the countries can focus on joint programmes, collaborative research products on science and technology, and networking of scholars to improve the intercultural understanding between the countries. There is a huge demand for science graduates in Taiwan, and they are encouraging couples holding science degrees to migrate to Taiwan. This initiative has been seized by a sizeable number of graduates from West Bengal and Orissa to migrate to Taiwan.

17.9 Military Ties

(a) **Defence Attaches:** The military ties between India and Taiwan have been minimal despite Taiwan's willingness to take the next step. India's reluctance is due primarily to its unease about upsetting China. It is felt that India should up the ante and start building its military ties with Taiwan slowly but steadily. For a start to enhance the ambit of defence cooperation between the two countries in an

effectively pragmatic manner, India can consider posting a military attaché to its office in Taiwan as part of plans to strengthen defence cooperation.

(b) **Military Exercises**: India today has no military alliance with other countries. For a country like India, indulging in a military exercise would significantly improve multi-faceted improvements. The primary objective of multinational military exercises is to study participating countries' best operational practices and to imbibe their maintenance, logistical and administrative experiences suited to our battle conditions. The vast technological advances witnessed today, associated practical problems, and varied operational environment management assist the participant nations in enhancing their capabilities. India and Taiwan can undoubtedly partake in joint exercises, which will greatly assist in forging a bond between both nations and enhance their level of cooperation. This cooperation in the military sphere can expand to technology, human resources, training, education and the economy. Intelligence reports suggest that China reportedly has more than 1,500 missiles aimed at Taiwan. It is also a positive coincidence that India and China field Russian-origin equipment like SU-30 jets and the S-400 air defence system. India can offer the opportunity to Taiwan to study these offensive platforms that would be used against Taiwanese forces, which would immensely benefit Taiwan.

(c) **Training Programmes**: India and Taiwan can also start a cross-training programme in their military institutions for their personnel. The military-diplomatic engagements between nations primarily occur through the diplomatic missions' military wings. These engagements facilitate better engagement between the two militaries with the subject matter expert exchange (SMEE) programmes and a mutual exchange of trainees in courses conducted at various military training institutes in both countries. The commonality in military inventory with both countries is an added advantage. The professional military training between the two countries on combat strategies or combat support equipment carries the military engagement between the two countries to a higher level. The military training of and with military personnel of both these countries has a dual impact: firstly, in capacity enhancement in the partner country, and secondly, in propagating an understanding between two militaries in terms of professional conduct, standard operating procedures and the military ethos. A pertinent factor is that India has offered training to military personnel from various countries at her military training establishments in order to share combat experiences and technical know-how. India is among the top countries highly regarded for its Low-Intensity Conflict Operations, and several countries have sought and benefitted from the Indian experience. There are over 2,000 military training slots to various countries in various military institutions in India, and personnel from 60 countries usually come to India for military training. Unfortunately, Taiwan is not among the countries extended this facility due to India's hesitation in ruffling Chinese feathers. That attitude must change, and Taiwan is included in training in India's military institutions. Besides this, the Indian Army has deployed ten training teams in Vietnam, Lao PDR, Myanmar, Tajikistan, Seychelles, Namibia, Uganda, Bangladesh and Bhutan for capability-building of the host nations (Ministry of Defence, 2017).

(d) **Intelligence Sharing**: Taiwan's knowledge of Chinese military deployments, including troop movements in the west of the country, are of particular interest to India, and hence both countries may agree on intelligence sharing agreements. Using satellite-based intelligence may also be resorted to, as Taiwan's minimal space programme can be effectively supplemented by collaboration with the Indian Space Research Organisation (ISRO) (Torode & Yu, 2018). The entire focus of Taiwan's security

establishment centres on the Chinese threat. By sharing intelligence with India, they can alleviate the pressure on India's intelligence network, which is overstretched due to its constant watch over two hostile threats on its borders. India's advanced satellite reconnaissance abilities can significantly improve Taiwan's Satellite intelligence network over China, and both countries can pool their resources in signals intelligence. By pooling their intelligence assets and creating channels for a continuous exchange of communications, electronic, geospatial, and human intelligence, the two countries can achieve better coverage of China than they can individually (Hooda & Dalmia, 2020). India and Taiwan can also share their respective cyber-warfare capabilities to counter China effectively.

(e) **Non-Traditional Security Cooperation**: Non-traditional security (NTS) cooperation, including anti-piracy, anti-poaching, and human and drug trafficking expertise, may be shared between the nations. The coast guards of both nations can provide regular cooperation in practising Disaster Relief operations. The National Security Guard (NSG) of India, one of the world's finest anti-terror forces, can effectively train Taiwanese personnel in similar duties.

(f) **Naval Drills**: Indian Naval ships can start doing goodwill visits, call Taiwanese ports on the east coast, and indulge in JACKSTAY exercises with the Taiwanese Navy. The Indians have vast experience in successfully operating diesel submarines and can impart their knowledge in helping the Taiwanese diesel-electric submarine project, which would boost Taiwan's capability in the East Sea.

The transfer of the Brahmos Missile to Taiwan may be put on hold for some time. However, there has been a demand to transfer Brahmos technology to Taiwan from various strategic thinkers. The weapons programme may evoke angry actions by the Chinese and may lead to a worsening security dilemma in which reactive security strategies could dangerously destabilise India and China.

17.10 Cultural Ties

India is trying to woo countries through its soft power prowess. This effort is achieved by its Cultural security, which underlines its ability to attract others owing to its culture, values, beliefs and ideology. India already has Buddhism as a cultural diplomacy tool. The Indian Government is working with the World Bank to develop a Buddhist tourist circuit in India. Buddhist countries, including Sri Lanka, Thailand and Mongolia, have expressed deep interest in this circuit. Taiwan, mainly a Buddhist nation, can be easily included in this circuit, and healthy people-to-people relations can be carved out. Both countries being free democracies with strong civil societies is a considerable advantage in the progress of this relationship. The Fo Guang Shan, a Buddhist monastery in Taiwan, has trained many resident Indian monks (Sramaneras) in its New Delhi branch, aiming to help promote Buddhism in India through its people.

There is a huge demand for Indian herbal soaps, fine teas of Darjeeling and Indian films. The Bollywood movie "3 Idiots" became Taiwan's third longest-running foreign language film. India has recently added Taiwan to its e-tourist visa programme to simplify the visa application for Taiwanese visitors. Without formal diplomatic relations, there is also a need to conduct friendly sister-city activities to promote engagement and mutual understanding (Swarajya, 2016). The other facets of Indian culture welcomed in Taiwan include Yoga, Indian cuisine and Indian classical music. These factors can be effectively exploited and significantly increase the soft power reach between both countries.

Agriculture: Taiwan's advanced agro and food processing technologies will immensely benefit the Indian agriculture sector. Once accoutred with Taiwan's technology and rich experience, India can modernise its practices and increase the capacity for waste prevention as nearly 40 per cent of Indian produce of fruits and vegetables go waste after harvesting. This collaboration could effectively change the economic prospect of India's rural areas and agriculture and usher in prosperity for Indian farmers, who constitute almost half of India's population. India has abundant natural bamboo resources, while Taiwan owns world-class bamboo charcoal technology. With this fusion of technology, India can effectively use its bamboo resources to produce high-value-added goods. India's most significant challenge remains maintaining air quality and stubble burning is an important cause of severe air pollution. Taiwan could be a valuable partner in dealing with this challenge through its bio-friendly technologies. These methods are adapted to convert agricultural waste into value-added and environmentally beneficial renewable energy or biochemical. These methods will be a win-win situation as they will help deal with air pollution and enhance farmers' income. Further, New Delhi and Taipei can undertake joint research and development initiatives in organic farming.

17.11 Conclusion

There are some shared values and mutual agendas for India and Taiwan. India should capitalise on that and should not neglect Taiwan at the cost of its national interests and needs to cultivate closer ties with Taiwan as there is a convergence of mutual interests. There lies a vast potential between India and Taiwan in multiple sectors. The island democracy of Taiwan is an acknowledged technological powerhouse and remains steadfastly central to the international semiconductor business. Taiwan also plays an indirect role in India's defence because its autonomous existence ties up a sizable portion of China's armed forces. India, locked in several military standoffs with China, needs to think and act creatively, including helping Taiwan by learning from its historical blunder in Tibet. As a beacon of democracy, India must do its part post haste to help Taiwan reinforce its defences and self-governing status. Greater cooperation between India and Taiwan is critical in helping New Delhi and Taipei achieve their economic goals at home and their strategic aims in the region. It is time to acknowledge the importance of India-Taiwan relations. India should consider its interests, not the third party's ones, when it thinks of developing relations with Taiwan. India's reservations about improving relations with Taiwan can ultimately lead to disappointment and resentment from Taiwan. India should take bold initiatives to reach out to Taiwan and assert its right to decide what type of relations it wishes to have with Taiwan.

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PART 7

GEOECONOMICS

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Section 18

BELT AND ROAD INITIATIVE - A ZERO SUM GAME?

Gp Capt R.S. Mehta

When Albert Einstein remarked that politics is harder than physics, he had in mind the enormous number of variables that the statesman and strategist must consider while studying international phenomena (Owens, 1999). Belt and Road Initiative of China along with the myriad of reactions that it attracts from all quarters, is a testimony to this fact.

In 1992, American political scientist, Francis Fukuyama in his essay End of History had argued that liberal democracy as a system of government had emerged victorious in the world, conquering rival ideologies like hereditary rule, fascism, and communism. He further felt that "…liberal democracy, constituted the end point of mankind's ideological evolution" (Fukuyama, 1992). Liberal intellectual world over, also started believing that post-cold war international environment represented the final triumph of liberal democracy over its twentieth-century ideological competitors, fascism, and communism (Menon, 2018). However, when China staged its spectacular economic success (Figure 18.1) pulling its 1.4 billion population out of poverty (World Bank, 2021) in a record time not through democracy but through a Communist dictatorship, it put a huge question mark on Fukuyama's above theory. Sequence of events leading to the spectacular economic rise (Figure 18.1) of China had started manifesting itself to the world from the beginning of the 21st century itself. However, the start of this process can be traced back to 1970s when the reclusive agrarian Chinese society was pulled out of its bamboo curtains and nudged to get integrated into the global economic system in 1978 (World Bank, 2021).

This was done deliberately by the then American administration partially to wean China away from Russia but also with the high hopes that an economically prosperous China will make the appeal for regressive communist system for its people, weak and redundant. Deng Xiaoping's "domestic reforms" and "unleashing of market forces" were expected to push China towards an open society and an open market system. The above theory of President Richard K Nixon was propagated under the influence of his "shuttle diplomat" Dr. Henry Kissinger (Kissinger, 2011). It lies shattered today.

The very foundations of the capitalist philosophy rooted in the uncompromising notion of the malevolence of communism over capitalism and its propensity to suppress the human spirit and dignity, stands challenged once again. Academics and intellectuals from liberal democracies as well as the conservative capitalist worlds, therefore have to go back to their original drawing boards to find the theoretical explanation for this phenomena. Revival of the ancient silk road by China through its Belt &

Road Initiative, is just one of the many controversial reference points in this big ideological debate of our era. Hence no serious study of BRI can be considered complete, without putting it in the above context.

18.1 Why BRI?

Ever since introduced to the world by Mr. Xi Jinping in 2013, the geo-political motivations behind Belt and Road Initiative (BRI) of China has come under heavy suspicion and criticism. Challenge for observers, therefore, is to rise above polarised views and assess the geo-economic implications of the infrastructure projects under BRI in an objective manner.

However, before dealing with the issue of impact of BRI on the global economy and geopolitics, it will be worth acquiring some perspective of the background in which BRI was conceived by the leadership of China at the first place.

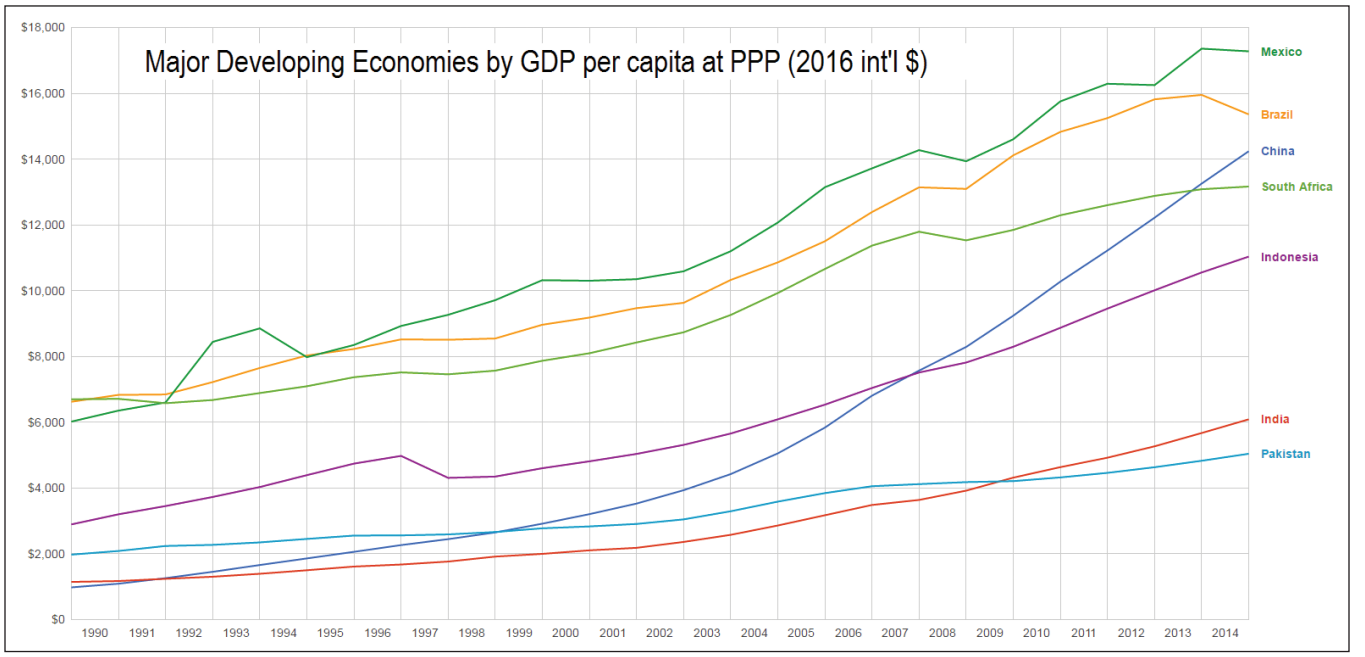


Figure 18.1: By Circle Adrian - Created on Excel from World Bank World Development Indicators 2014 data, CC BY-SA 3.0,

18.2 The Economic Angle

As already mentioned, one of the consequences of integration of China into the world of free market system in 1972 was that western capital and technology started flowing into Chinese economy liberally (Prasad & Wei, 2005). Policies followed by Deng Xiaoping' between 1978-1993 and his successors later, brought significant changes in the economic philosophy of China. It introduced economic liberalisation and brought domestic structural reforms to accommodate market forces in sync with the world economy. His focus on globalisation acted as a catalyst in mobilising its massive national resources that lie idle and untapped till. Once invoked, the hitherto lying idle man, material and intellectual resources unleashed its economic potential as never before (Zhang, 1996). China was able to modernise and scale up its

manufacturing rapidly and took its domestic industrial output to unprecedented heights in a very short time. This was coupled with Chinese access to American and Western markets where, being an "under-developed nation" (at that point of time), it was granted the status of the most favoured nation (MFN) (Salam, 2018). As a result, by the time China entered the 21st century, its economy had started manifesting extraordinary growth in all parameters of economic and industrial growth. (Figure 18.2).

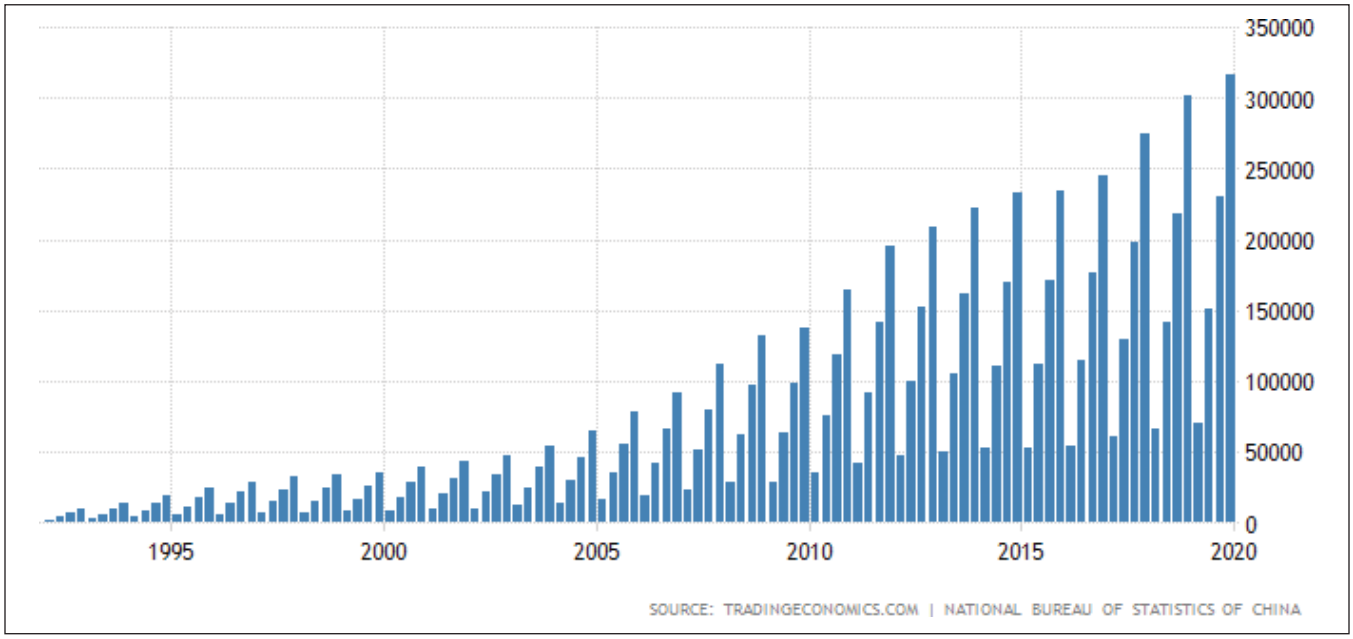


Figure 18.2: GDP growth from manufacturing in billion Dollars

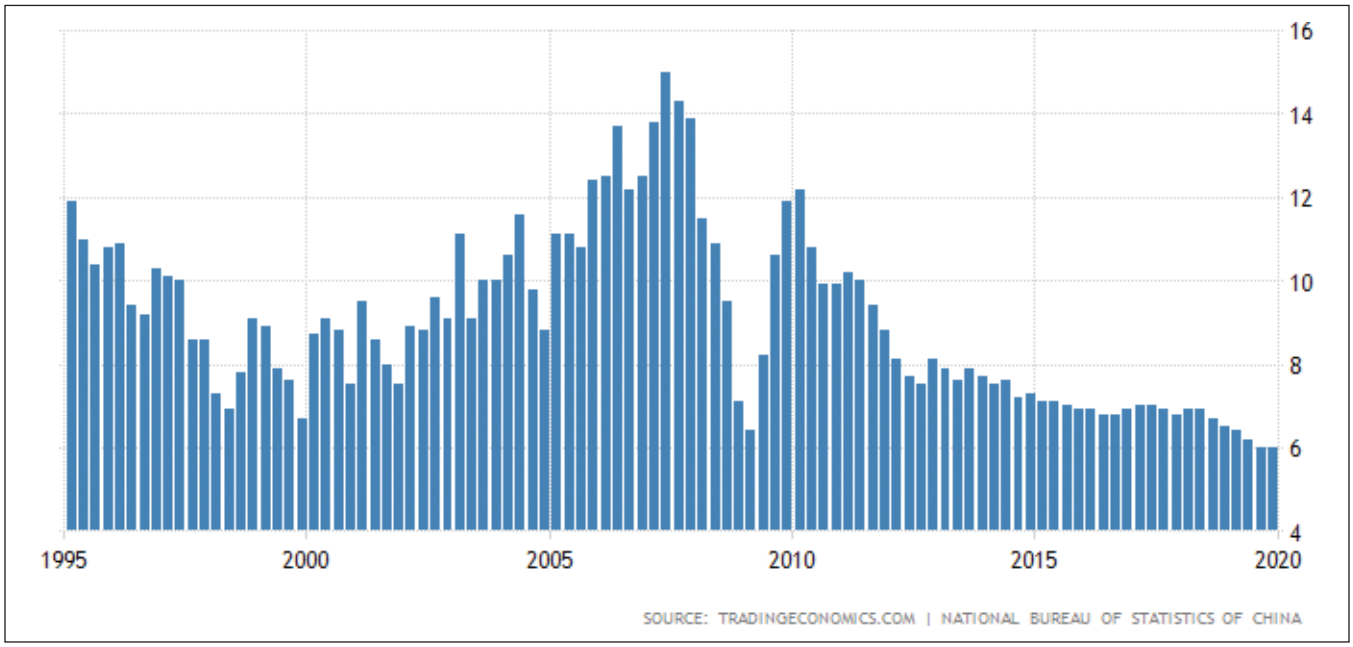


Figure 18.3: China's GDP Growth Rate historical data in percentage terms

Its GDP grew at a rate of an average of about 9.5% during the 90s (Figure 18.3). By the year 2010, China's Gross Domestic Product had quadrupled compared to what it used to be in 1995 (Figure 18.4).

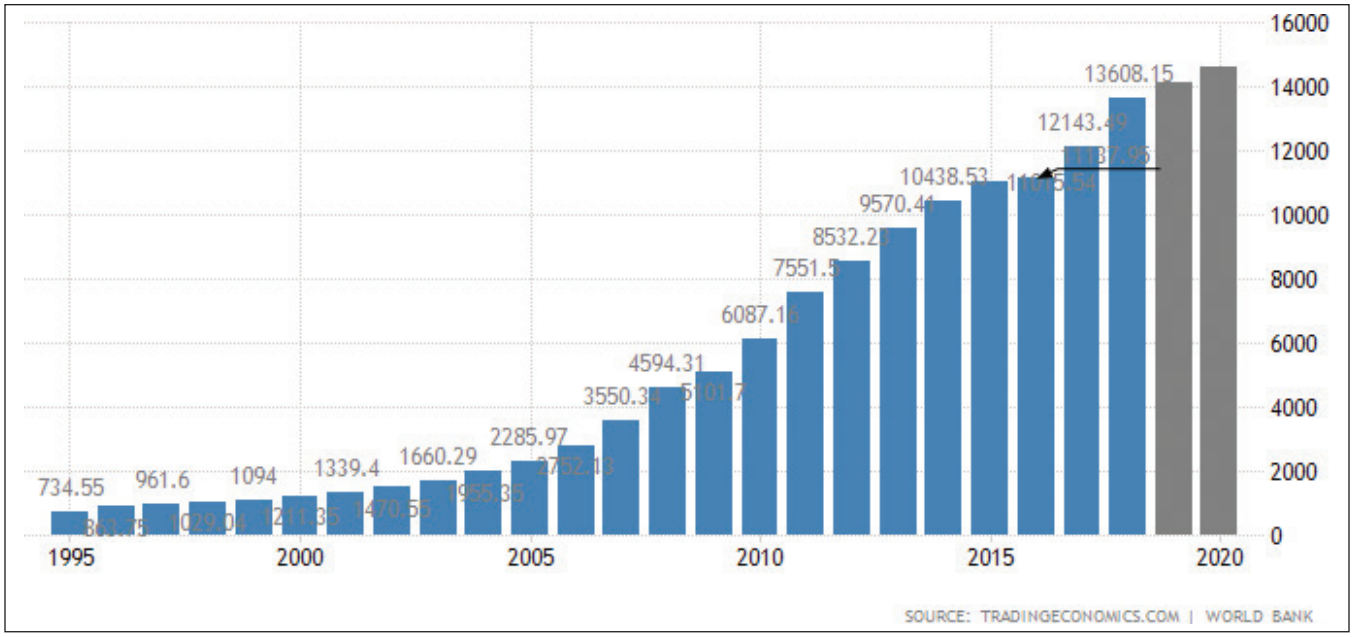


Figure 18.4: China GDP in billion dollars - Historical Data

With a population of 1.39 billion people it had already attained its per capita income (PPP) of $ 4,500 (World Bank, 2020). This made China the second largest economy in the world as it entered the 21st century. The fact that it will surpass USA in GDP terms sooner than later, remained no longer a matter of speculation.

But Chinese economy had to experience significant set backs during the Asian financial melt down of 1997-98. The susceptibility of Chinese domestic economy to the factors beyond its borders over which it had little control came to Chinese leadership as a rude shock. The national growth rate of its economy came down during this period from 14.3% in 1993 to 8.9% in 1997. (Figure 18.5) It dropped to further 7.8% in 1998 and went on going down to 7.1% in 1999 (Trading Economics, 2021).

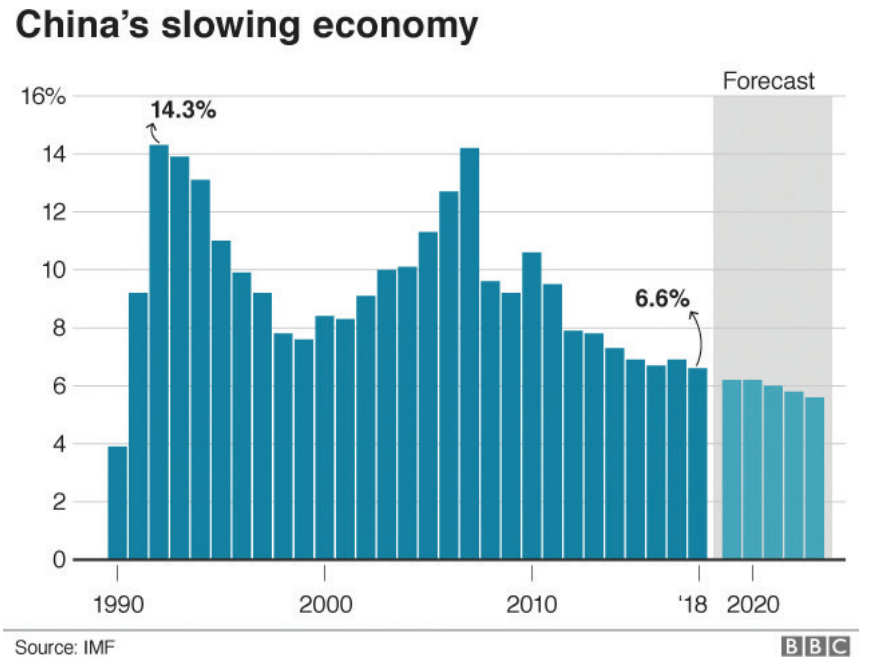


Figure 18.5: Chinese GDP annual growth rate

The Chinese economy did recover impressively between 2000 and 2007 regaining its growth rate once again to a staggering 14% for a brief period of time in 2007, but then the global financial crisis recurred in 2008. US and Arab subprime crisis sent shock waves to the entire global banking and financial systems and the overall global demand and consumption started getting distorted. In a single year, China's growth fell from 14% to 9% and went on sliding year after year between 2008 to 2018 touching a little over 7.5% in 2013. There were strong indications that global demand would go down further throughout the decade affecting the Chinese economy adversely. Marginal recovery made in the year of 2010 (ie 10.45%) were all but washed away. The Euro zone crisis of 2016-19 added further fuel to the fire. It had its own adverse effect on the global demand and put further pressure on the scales of Chinese exports (Trading Economics, 2021).

Following the 2008 global financial crisis, the fragility of economic growth of China and its precarious dependence on a volatile global market of contracting demand was amply revealed to the Chinese policy makers. It was clear to them that the global demand on which the Chinese economic miracle was being scripted, was not going to last long. It was clear that vagaries of west controlled global market system was going to affect Chinese economic growth and stability adversely in the years to come (Narasimhan, 2020). Bouts of global recessions had started raising barriers to international trade. Countries after countries started regulating their imports more stringently. Issues related to adverse trade balances started occupying centre stage in national and international debates. Protection of domestic industries and arresting domestic un-employment became the buzzwords in industrialised nations (Jaishankar, 2020, p. 29). Anti-China sentiments had started making inroads into American domestic politics and was ready to influence its foreign policy. Many nations in Europe and Asia too started questioning the Chinese commercial practices in their countries. Justification for continuation of China's MFN status in America was questioned (Salam, 2018). Though China was already engaged in multitude of economic activities in Africa and Latin America, it understood that excessive dependence on traditional American and European markets were inadequate to support further Chinese growth. China had to do some thing about it.

In tune with the Chinese psych and their typical response when confronted with such massive national problems, the Chinese policy makers instinctively opted for some thing "BIG". Since the existing global market based on Bretton Wood model was proving undependable and unmanageable to sustain Chinese economic growth, CCP under Mr. Xi's leadership, decided to create an entirely new global market system for itself which could remain under its control and which it could manage without outside interference – Thus the idea of BRI was born! (Mishra, 2020).

18.3 Other Domestic Compulsions

China's State owned entities (SOEs) in the sectors like cement, steel and construction by the end of 2010 had accumulated huge overcapacities by expanding their mines, plants, factories and also by expanding their construction work force to such high levels that it became un-sustainable during bouts of economic slow-downs. These construction behemoths were created to serve the massive explosion of Chinese domestic construction activities during the early phases of economic expansion. However, as domestic market started getting saturated and demands for construction started to contract, these giant companies found themselves struggling to put their over capacities and surplus workforce to use. (Cai, 2017)

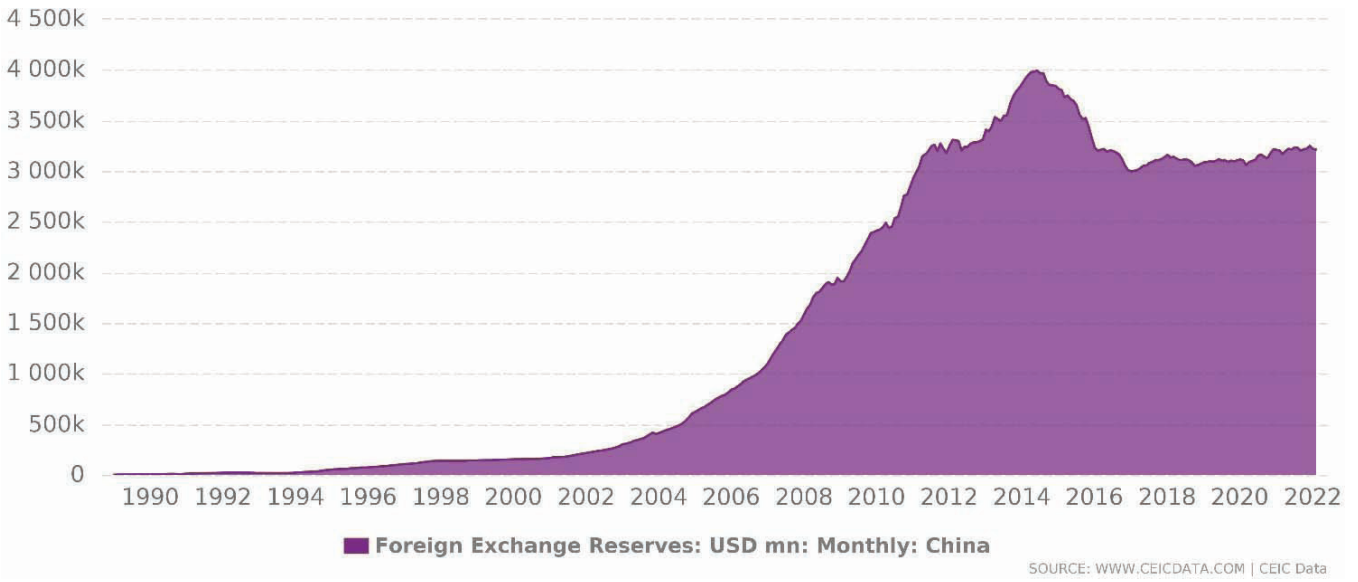


Figure 18.6: Growth of China's Foreign Exchange Reserve. (Source – www.ceicdata.com)

China during this period had also accumulated large foreign exchange reserves (Figure 18.6) and domestic savings that lay underutilized both domestically as well as internationally. Investing in large-scale overseas infrastructure projects conceived under BRI made good sense for China and enabled it to export its excess capacities and savings to BRI member states that also promised to give a new lease of life to its limping SOEs and stressed domestic employment levels.

18.4 The Strategic Angle

As China's growing industrial and manufacturing strength started competing with the progressively weakening western economies in a manner that could no longer be ignored, (Figure 18.7) tensions grew in international relations specially between China and the US. Strategic analyst world over could no longer turn their eyes away from the fact that a new chapter of cold war, in the of global geopolitics had begun.

It is estimated that currently, 80% of global trade by volume and 70% by value, are being carried by sea (UNCTAD, 2016). Of that, 60% maritime trade, relates to Asia alone. South China Sea itself transited an estimated one-third of global shipping. All this made the waters of South China sea strategically very crucial for China as well as its competitors and adversaries. Moreover, the entire shipping traffic of South China Sea and its energy supply has to pass through the narrow Straits of Malacca, (Figure 18.8) which connects the South China Sea to Indian Ocean and on which bulk of its energy supplies and global trade depends.



Figure 18.7: World trade by value 2020 (Source: World Bank Data)

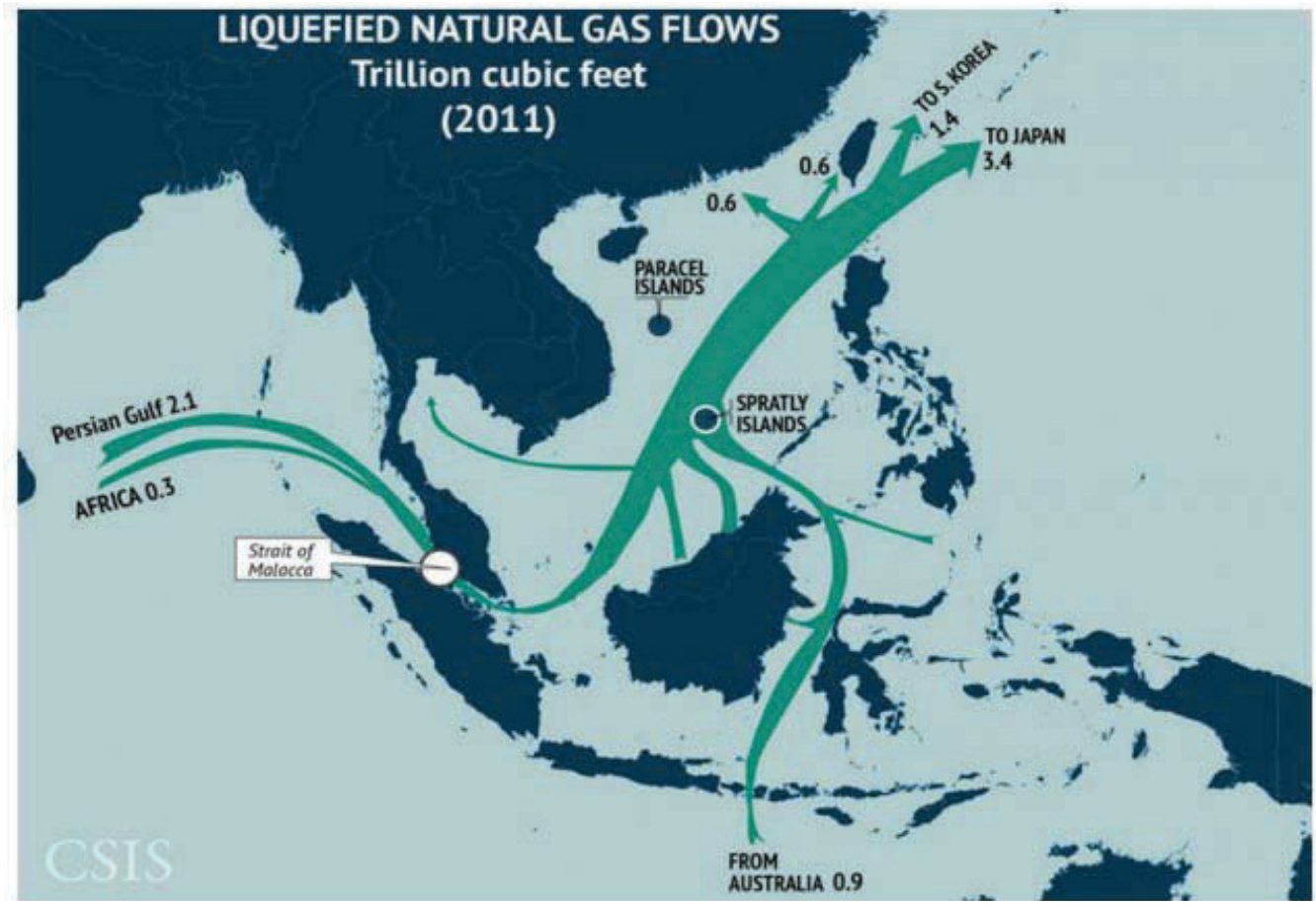


Figure 18.8: Sea traffic of crude oil and other shipping through Malacca Strait

Being the second largest economy in the world with over 60 percent of its trade in value being transported by sea, China was quick to realise that it's economic security was closely tied to control of South China Sea, even during conflict situation. The high concentration of commercial goods flowing through the relatively narrow Strait of Malacca did not inspire confidence. Malacca remained the most vulnerable strategic choke-point for China (Noer & Gregory, 1996) Therefore, in a situation of conflict, China could obviously not let Strait of Malacca become its Achilles heel. To put it plainly it meant China had a task in hand to free itself from the domination of sea lanes of communications (SLC) by the western navies lead by USA.

Yale university professor of International Studies, Nicholas John Spykman in 1942 had propagated the "Rimland Theory" and suggested - "Who controls the Rimland (Coastal and offshore island powers of world) rules Eurasia, who rules Eurasia controls the destiny of the world." (Skypman, 2007), (Sloan, 1987). Ever since then, US geopolitics had remained anchored and revolved around the same theory (El Hussini, 1987). In line with the above formulation, America has continued to exercise its world domination through its ability to control the Sea Lines Of Communications (SLOCs) round the globe. Naturally, if the international tension grew and a military show down with China became imminent, America and its allies, with their current dominance of SLOCs, were sure to use Malacca as a strangulation point to subdue China.

Viewed purely from the Chinese perspective, securing an un-hindered movement for its expanding global trade, energy supplies and navigational freedom, finding a solution to its *Malaccan Dilemma* became one of the top strategic priorities of China (Storey, 2006). For Chinese strategists, this was not just a navigational problem. For them it was their existential issue. China's civilizational pride and growing global stature was not giving them any comfort to find a leash put in their neck whose other end was in the hands of US and its allies. Alternative to this *Malaccan Dilemma*, had to be found and it was found in the BRI (Chauhan, 2020).

18.5 What is BRI?

Belt and Road Initiative of China is an array of unspecified, open-ended, multinational, intercontinental, infrastructure and development projects to promote international trade through improved connectivity and cooperation among nations of the world. It sets no limit to its scope and is open for participation by any country or any organisation willing to join it. (Initiative, 2017) Prima-face BRI appears to be an attempt to compensate the huge infrastructure gap existing in central Asia. While doing so China is merging its economic objectives with strategic goals. As a result BRI today occupies the centerstage of China's foreign policy.

It was initially called One Belt One Road (OBOR), but re-named later as Belt and Road Initiative to accommodate its six major land corridors and one maritime corridor. Literature indicate that an Arctic 'Ice Silk Road' and 'Digital Silk Road' were also added to it later on. The BRI now covers more than 147 countries. Together it comprise of 65 per cent of the world's population who account for 40 per cent of global GDP as of 2017. If completed in full, BRI has the potential to boost the gross domestic product (GDP) of the world by as much as $7.1 trillion by 2040 and reduce global trade costs by 2.2 percent. (Jacob J. Lew G. R., 2021)

Literature on BRI suggest that it is not just the biggest but the most complex set of global connectivity projects known to mankind. It aims at building a new Eurasian Land Bridge and developing China-Mongolia-Russia, China-Central Asia-West Asia and China-Indochina Peninsula economic corridors in Asia. However, if the grandiose of this plan is set aside, BRI basically appears to be China's attempt to connect its western hinterlands and regions of Xinxiang, Tibet and Yunnan to Indian Ocean through South Asia on one hand and connect China by road & rail to Europe on the other hand thereby creating multiple 'Economic Belts' enroute. Another arm of BRI is its sea route connecting South China's industrialised and export oriented coastal provinces to South Asia, Middle East, Africa and Europe through a string of ports (also called string of pearls by western observers) in the India Ocean Region which China calls the '21st Century Maritime Silk Road' (MSR). (Figure 18.9) Apart from the land and sea routes mentioned above a third dimension called the 'Digital Silk Road' was added in 2015.

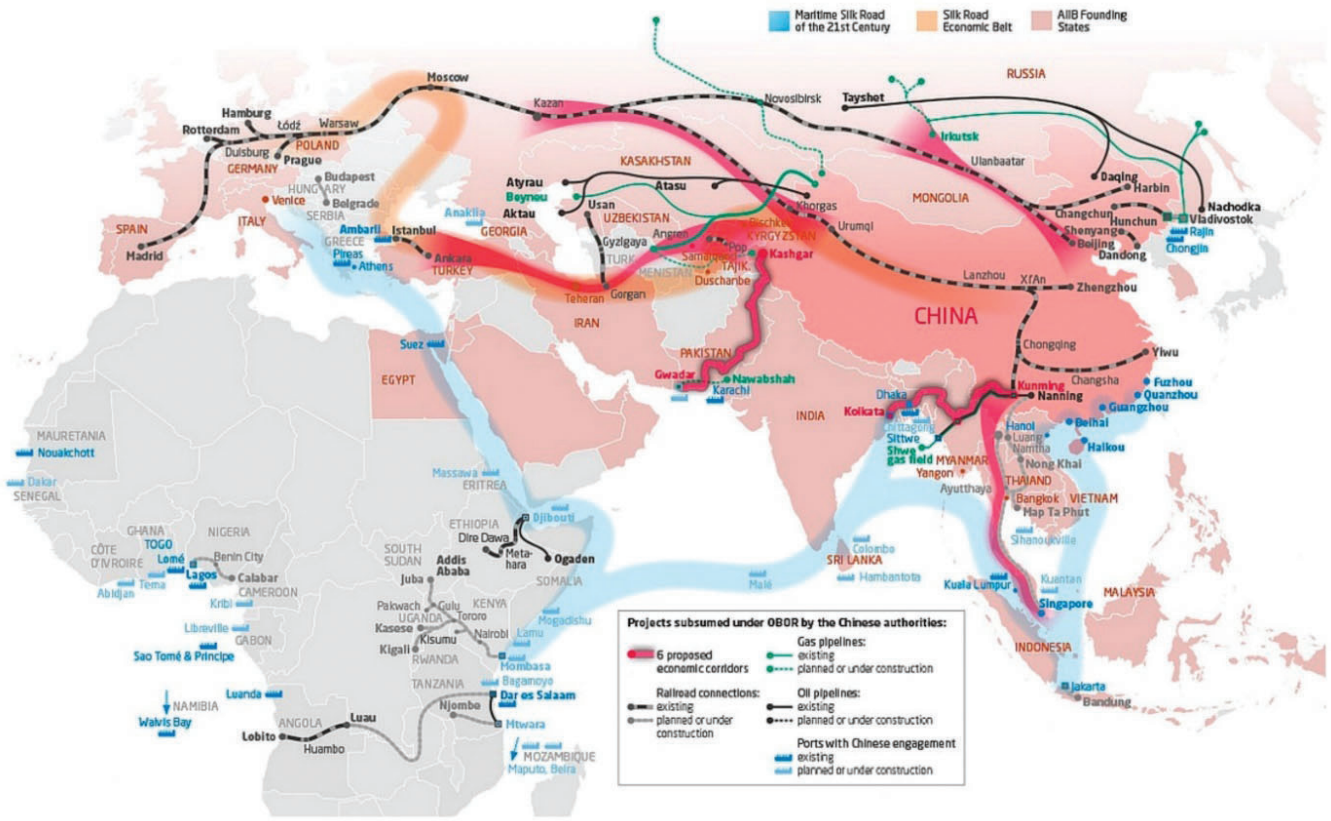


Figure 18.9: BRI Map. Not to scale. Source MERICS

On land the silk route is associated with high speed rail and road links, energy pipelines and power grid connections all along the route connecting China's north western regions to European continent and Bay of Bengal and Arabian sea directly through rapid land transportation system. These land and sea routes conceived under BRI and MSR are ostensibly for trade, but actually not hard to sense that they are likely to pave the way for China to set up many military bases along its SLOCs like the one it has built at Djibouti (Paul, 2021). When completed, China's sole dependence on Malaccan strait will reduce and China expects a direct access from its north western main lands to the Arabian sea and Bay of Bengal through Gwadar and Kyaukphyu ports in Pakistan and Myanmar respectively. These projects are expected to give China its

much needed maritime autonomy and navigational freedom that it feels will secure its economic interests, energy supply needs and maritime trade to Europe, Africa and South American markets.

Approximately 147 member states have already signed MoUs (Center, 2022) to connect their economies through BRI schemes with entirely new set of inter-governmental trade protocols. China is also pushing actively a RMB based alternative EXIM system as a means of exchange for trade and finance outside or parallel to dollar based international trading system. (Timmy Shen, 2021) Therefore, on critical analysis, it appears that over all Chinese objective is to establish a China-centric economic world order in the Eurasian market in general but more specifically in Central, South and South East Asia where it wants less American interference (Wong, 2013). For this, it is gearing itself up to compete with US to control the SLOCs in the South China Sea, including its choke points and then move deep in the Indian Ocean and the Western Pacific. The creation of artificial islands and their militarisation and controlling the EEZs of other nations in the South China Sea are parts of this grand strategy to secure the necessary strategic autonomy and possibly military dominance on land and sea to achieve its full economic potentials without getting impeded by its hostile global competitors.

18.6 The Zero-Sum Game

The backdrop outlined above has given rise to some very pertinent questions vital to the evolving international equations and the shifting global power balance. Is BRI a zero-sum game in which someone has to lose globally to make room for someone to win? Will those joining BRI be the ultimate gainers or ultimate losers in this game? Ideological questions are - whether BRI is to be considered as a new avatar of neo-colonialism? What are the potential dangers to the liberal democratic world if China succeeds through its BRI to control the economic destiny of a good part of the globe? Question closely related to this is - will China try to export its own form of governance model to other countries when it gets in the position to do so? These are some of the vital questions of our era that the researchers, academics, contemporary historians and international relation analysts will have to explore in future and seek answers to it, in the coming days.

The term BRI does not stand for any specific project belonging to any specific region or any specific group of nations. It's a very broad concept applied to different parts of the globe involving many nations, regions and continents differently where no standard or uniform protocol is applied. Notwithstanding, the sheer size and scope of BRI is indicator of the scale of China's politico-economic ambition and design. While Beijing portrays the infrastructure development initiative as purely economic investment and connectivity programme economically beneficial to all parties, calling it a "Win-Win Situation", there are others like America who indeed find strategic dimensions to it and treat it as China's zero sum game.

Multiple global projects initiated in the last few decades by Mr. Deng Xioping under his strategy of going out to secure raw-material, sources of energy and new markets and creation of foreign assets abroad and many such infrastructure projects already in progress globally, were clubbed together by Mr. Xi Jinping to repackage them as the "Belt and Road Initiative". While the initiative began with a predominantly economic focus, it has taken on a greater geo-strategic and security profile over time (Narasimhan, 2020).

Also, BRI can not be seen as an aid program because the Chinese themselves do not see it that way. It certainly does not operate that way. BRI projects are purely commercial investment of Chinese private and state owned businesses entities to increase their global market. The initiative has a blend of economic, political, and strategic agendas that play out differently in different countries. This is illustrated by China's approach to resolving debt, accepting payment in alternate currencies (RMB), commodities, or the lease of assets.

The strategic objectives are openly acknowledged by China when it comes to countries where the investment aligns with China's compulsions to have access to strategic ports and key water ways such as Gwadar in Pakistan, Malacca in Malaysia, Sihanoukville (SSEZ) in Combodia, Kyaukphyu (SEZ) in Myanmar, Hambantota in Sri Lanka and Djibouti in the Horn of Africa (Chauhan, 2020) (Dam, 2020). This is the reason China is flooding strategically important countries in the region with aggressive investment to cultivate political clout and economic dependencies. There has been increased Chinese military involvement in the BRI states to protect its long term interests (Narasimhan, 2020).

China's investments in strategically sensitive ports like Gwadar, its development of overseas military base at Djibouti coupled with aggressive posturing in the South China Sea (SCS) have all caused concern to the United States. Issues related to BRI's impact on democratic governance of host countries, debt sustainability, and impact on existing global environment and labour standards are being raised by the critiques in many countries inimical to BRI (Dam, 2020). Internationally, several developing countries, including India, have questioned China's insensitive transgression of national sovereignty in disputed territories through which some of the BRI projects are planned and under execution. China-Pakistan Economic Corridor (CPEC) crossing the disputed territories of Pakistan occupied Gilgit Baltistan region that India considers own is an example (Dam, 2020).

A dominant part of US policy makers today therefore, prefer to see BRI as a zero sum game, where every bit of Chinese gain is being perceived to be at the cost of US global primacy. Narrowing foreign trade and military strength gaps between China and US are testimony to this fact. Geopolitical theories related to world power equation propagated by Fairgrieve, Spykman & Mackinder and the variants of classical "Rim Land" and "Heart Land" theories are today in full display in the international manoeuvrings of the existing and emerging super powers today. U.S. is formulating its Rim land strategies to counter and contain China to prevent encroachments on its own turf of global primacy. The American global interests seem deeply threatened by China's rising power getting manifested on ground through the BRI projects.

18.7 Conclusion

Some scholars believe that the right strategy to tackle the rise of China is to accept it and adapt to it sooner than later. Liberal world should make concerted collective international effort to multi-lateralize the whole process of China's rise which it believes is inevitable. Member nations of European Economic Community and 147 countries who signed up for BRI appear to gradually getting closer to accept this reality and moving towards above position vis a vis BRI instead of going on a collision course with China on the lines of USA. Russia and its Eurasian Economic Community are also supportive of BRI concept and taking active part in it. Russian Chinese collaboration is key to the success of BRI in central Asia and

development of a new Eurasian market system. To that extend, Sino-Russian relation is at its historical best. However, inherent super power competitive dynamics alone will define this relationship in times to come.

While some others, especially in America and countries aligned to America argue that it is better to adhere to the race-to-the-top dynamic vis-à-vis China. America and its like minded liberal democratic partners who have geostrategic interests in south pacific and Indian ocean region have accordingly re-defined this part of the ocean as Indo-Pacific and come up with the noval concept of Indo-Pacific Alliances. In light of the challenges of rising Chinese assertiveness in South China Sea has galvanized the dormant grouping of Quadrilateral Security Dialogue (QUAD). Alarmed by the threat to its strategic interests in SCS, America has formed a new mini NATO like defence alliance comprising Australia, UK and USA (AUKUS) to face any kind of military threat jointly in South China Sea.

Either strategy requires the developed democratic world to recognise the infrastructure gap that exist in developing world as the first line of the battle ground in this equation. This makes it imperative for them to proactively participate in international infrastructure development programs in the strategic third world countries to wrest the initiative back from China and to pre-emptively ring-fence areas of strategic interests from future Chinese investments. In this regard Japan's "Partnership for Quality Infrastructure" and USA's Millenium Infrastructure Fund, ADB and OCED like organisation have to do much more than what they are doing now.

To what extent the perceived sense of zero-sum game being played by China can be countered by USA is a matter of speculation and further analysis. The realignment of international relations appears to follow the above contours out of which a new world order and a new balance of power is expected to emerge. Failure to arrive at equilibrium in international relation acceptable to all is likely to plunge the world in to a phase of confrontation, conflict, chaos and disruptions.

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Section 19

SAGARMALA – OPPORTUNITIES AND CHALLENGES

Gp Capt R Srinivasan

PART I: SEABORNE TRADE AND RELEVANCE TO NATIONAL ECONOMY

19.1 Introduction

India has one of the longest coastlines in the developing world. The 7500 km long coastal belt has historically been important since, for ages immemorial, Indian spices and crafts have travelled west and east from the ports on this line. Though it may sound ironic, the wealth that poured back from Europe, Africa and the East through the ports of ancient India attracted Portuguese and Spanish adventurers like Vasco da Gama and Columbus to attempt to find sea routes to India. The sea has always been a source of wealth, both from the resources of the sea and the trade that was borne on the sea. Cities like Surat, Bharuch, Colaba, Cochin, Chennai, Vizag and Kolkata flourished in the early and Middle Ages and continued to flourish under kingdoms like Chola, Chera, Vijayanagar and the Mughals. Historians like km Panikkar (Panikkar, 1959) and Peter Frankopan (Frankopan, 2016) provide fascinating details of the trade and wealth that bound its way to India from across the world. The trade that flowed out of the ports of India and the wealth that flowed in rested on one single ability of the kingdoms of the past – infrastructure. The flourish was impossible without the ability to move goods back and forth from ports through an extensive network of roads. K.M. Panikkar and RC Dutt (Dutt, 1904) state that the GDP of ancient India was 25% of that of the world. Bulks of these exports were in spices, cotton and textiles. The staggering GDP rested on substantial infrastructure, both in the form of support to industries and the movement of goods to ports. History books are replete with quotes of Chandra Gupta Maurya, Ashoka, Bimbisara, Raja Raja Chola, Mahendra Varma Pallava, Pulikesin II, Krishnadeva Raya, and a host of great kings of ancient India, followed by Mughal Emperors like Akbar, Jahangir, and Aurangzeb spending considerable efforts to build, expand and maintain roads across their empires. These roads were appropriately planted with shade-giving trees, rest houses for travellers, warehouses for merchants, toll and custom houses and all other necessities that would facilitate movement and trade. Abraham Eraly (Eraly, 2007), a noted historian, details the colossal amounts that the Mughal emperors spent maintaining roads. Historians like Nilakanta Sastri (Sastri, 1955) also record the extensive protection and facilitation the kings of South India offered to farmers, weavers and artisans who produced the goods for exports.

However, the story of the Indian export sector post-independence was quite different. During 1950-1997, the Indian share of world exports declined by about 58 per cent from 1.4 to 0.6 per cent (Mukherjee & Mukherjee, 2012). Though exports grew about 20 per cent during 2002-08, the global economic crisis of 2008 affected the export sector, making the growth rate negative. The global financial crisis revealed the vulnerabilities of the Indian export sector to the vagaries of international markets. The causes of the negative impact were deeply rooted. Restrictive policies of the 1970s were focused on developing the domestic industry while tightening control of foreign trade through quantitative restrictions. This high level of protection and an overvalued domestic currency resulted in demand for imports and severely discouraged exports. Additionally, India's exports suffered because export incentives were available only to a limited number of manufacturing industries and selected agricultural exports subjected to varying export tariffs. The state of logistical support and connectivity to ports played no lesser role in this scenario. However, beginning in the 1990s, possibly prompted by the yawning fiscal deficit, the Government of India took measures to liberalise the economy. The gradual liberalisation of the Indian economy and calibrated policy reforms produced a progressively conducive environment for India's exports to flourish, developing into an engine of social and economic growth in its own right. In the process, India transformed into a significant player in the global market from a closed economy. This development focused on the crucial logistical and infrastructural environment necessary to further this development. Ports and hinterland development, therefore, came into consideration.

In the globalised environment, ports play a vital role in seaborne trade that contributes to over 70 per cent of all forms of trade. The United Nations Conference on Trade and Development (UNCTAD) finds that world seaborne trade reached 10.3 billion tons in 2016 after a steady increase over the last seven years. Since 2009, the volume of goods loaded and unloaded in ports worldwide has grown by 2.4 billion tons. In particular, the trade of dry cargo, petroleum products, and gas by sea has increased. It finds Asia by far the largest trading region. In 2020, 4.4 billion tons of goods were loaded, and 7 billion tons of goods were unloaded in Asian seaports, amounting to 41.3 and 66.5 per cent of world statistics. The other continents registered less than half of these amounts (UNCTAD, 2021). UNCTAD data indicates that in the years 2000-2020, the volume of seaborne trade has nearly doubled in a million tons loaded (at ports) from 5984 to 10648 with reference to India.

Table 19.1: Developments in International Seaborne Trade (Mn Tons Loaded)

Year	Oil	Main Bulk	Other Dry Cargo	Total
2000	2163	1295	2526	5984
2006	2698	1814	3188	7700
2007	2747	1953	3334	8034
2008	2742	2065	3422	8229
2009	2642	2085	3131	7858
2010	2772	2335	3302	8409
2011	2794	2486	3505	8784
2012	2841	2742	3614	9197
2013	2829	2923	3762	9514

Year	Oil	Main Bulk	Other Dry Cargo	Total
2014	2825	2985	4033	9843
2015	2932	2930	4161	10023
2016	3058	3 009	4 228	10 295
2017	3146	3 151	4 419	10 716
2018	3201	3 215	4 603	11 019
2019	3163	3 218	4 690	11 071
2020	2918	3 181	4 549	10 648

Source: Compiled by Author from Review of Maritime Transport, 2021, UNCTAD at (UNCTAD, 2021a).

India took strides in developing port infrastructure as its export volumes grew after independence. The 12 major ports established by the Central Government handle about 75% of the maritime cargo of the country. The cargo handled at these ports has increased from 19.38 million tons in 1950-51 to 383.63 million tons by the end of 2004-05. By 2020-21, the volume of exports grew to 704.9 million tons ((Ministry of Shipping, 2021). The chart below represents the growth in exports in the period 2007-20 (FY) in a million metric tons:

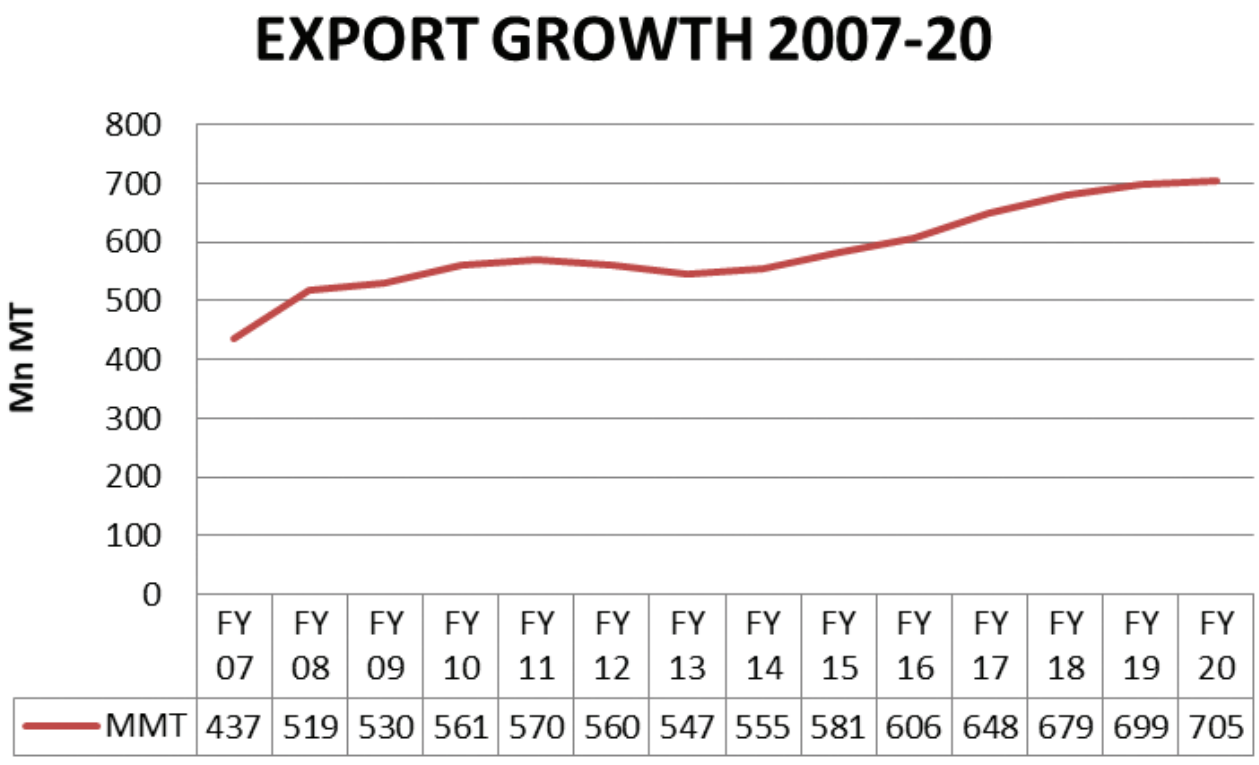


Figure 19.1: Export Growth 2007-20

Source: Compiled by Author based on data available at Ministry of Shipping website at www.shipmin.gov.in

The Government is committed to a GDP growth of 8 per cent per year in a sustained manner. This growth would require quantum growth in developing and modernising the port infrastructure, especially for becoming globally competitive. The GDP growth is expected to exceed 9.5 per cent by FY 2022 (Niti Aayog, 2021).

An interesting development in the same period is the increasing role played by small and medium ports in India. Out of 217 ports in India, 12 are classified as major ports, and 205 are classified as minor. While the number of major ports remained constant at 12 in 2009-16, the number of minor ports grew from 187 to 205 (MoS, 2019). The growth in the number of minor ports indicates an increasing availability of export infrastructure and accessibility to more ports. The minor ports also witnessed an increasing volume of exports from them. In the same period (2007-20 FY), exports from non-major ports grew from 28 per cent to nearly 43 per cent. In fact, in FY 2020, they exceeded 46 per cent of overall exports. The expansion of trade through minor ports indicates the expansion of markets and increasing demand for hinterland connectivity and logistical support to these ports.

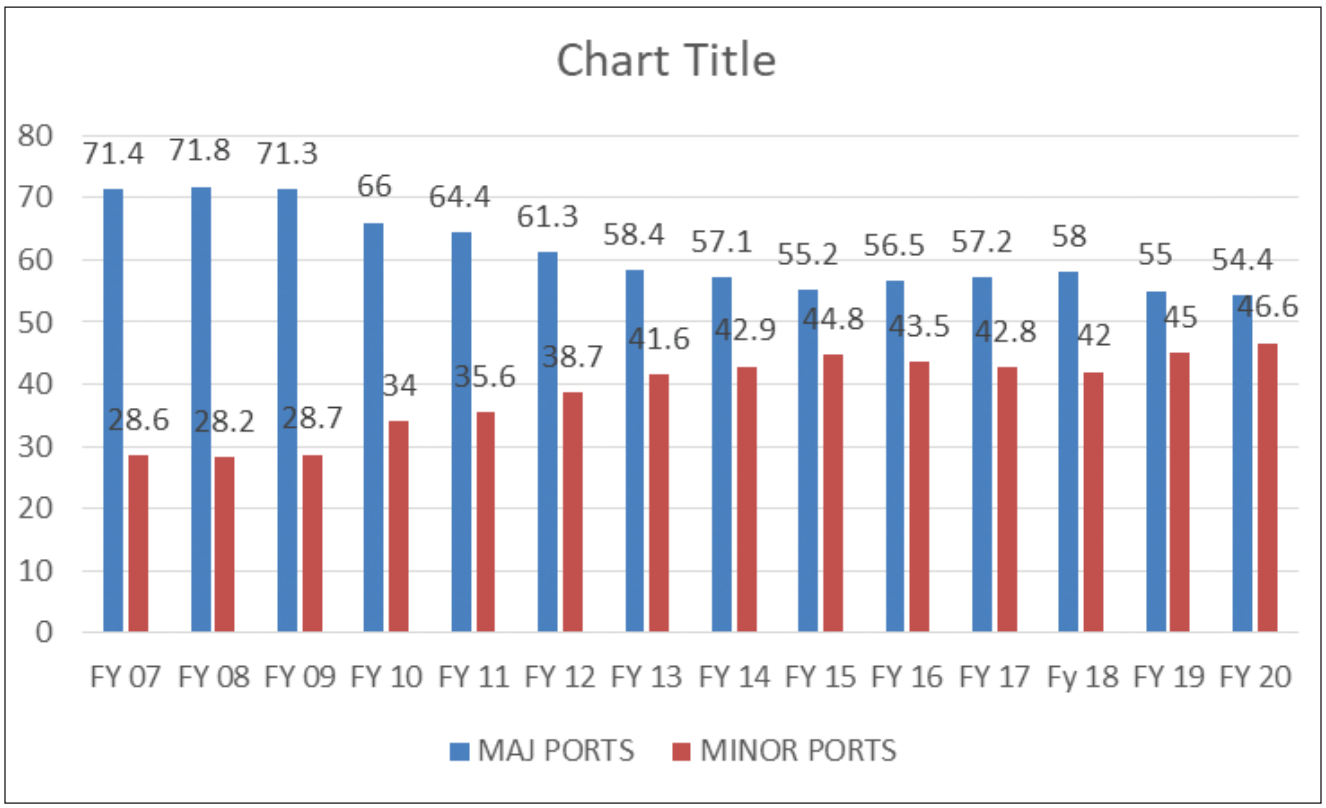


Figure 19.2: Exports from Major-Minor Ports

Source: Author compilation from Port Statistics available at Ministry of Shipping website www.shipmin.gov.in

The exports consisted of a broad range of 13 items that were carted to the ports through five different modes: inland waterways, rail, road, conveyors and pipeline. One hundred per cent of crude oil and LNG were conveyed through pipelines; similarly, one hundred per cent of iron ore from West Bengal, Orissa, Andhra Pradesh and Tamil Nadu were conveyed through rail. While railways accounted for 51 per cent of all cargo, roads constituted a mere 22 per cent. The chart below highlights three important transport modes connecting ports to the hinterland – rail, road and inland waterways.

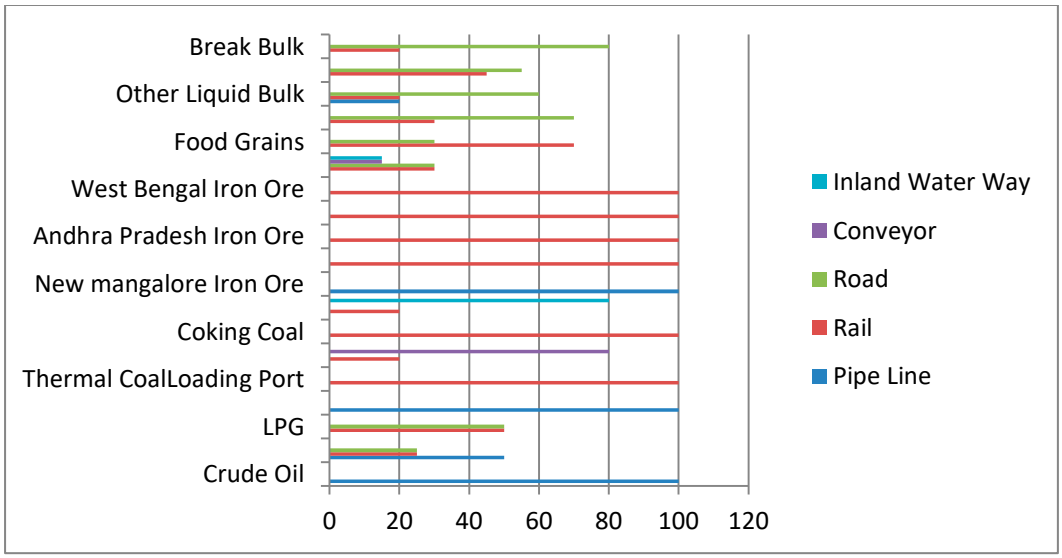


Figure 19.3: Items and Modes of Transport to Ports

Source: Author compilation from Port Statistics available at Ministry of Shipping website www.shipmin.gov.in

Port connectivity is vital in light of the volume of trade and mode of transport. It is also necessary to see the economic user cost of commodities to take the analysis further. The Planning Commission Total Transport Systems Study indicates that transportation by road of material is more economical than the rail or coastal water transport modes. Shinghal (Shinghal, 2005) found that while rail services have an advantage over the road on a pure transport cost basis over the medium to long distances, on a generalised cost basis, road transport has an advantage even over long distances.

Table 19.2: Economic User Cost of Commodities

COMMODITY	RAILWAYS	HIGHWAYS	COASTAL SHIPPING
Food grains	243.70	57.98	
Fruits & Vegetables	204.42	90.67	
Coal & other loose mineral	199.53	102.24	327.22
Fertilizer (Urea)	274.23	189.77	
Sugar	250.45	96.41	
Petroleum products	177.15	72.02	176.59
Cement	256.32	119.46	303.88
Livestock	58.64	31.53	
Iron & Steel	292.79	135.79	
Container	602.04	469.98	648.90
Others	602.04	469.98	648.90

Source: Compiled by Author from Planning Commission Reports available at http://planningcommission.nic.in/reports/genrep/trans/Chapter_5.pdf

The study reveals that the development of roads and associated infrastructure is equally important to increase hinterland connectivity. While considering the various cost-effect benefits of modes of transportation, research commissioned by New Zealand Transport Authority took into account another important dimension – the ecological cost. Cenek et al. (Cenek, Kean, Kvatch, & Jamieson, 2012) found that when considering the maximum number of containers that can be transported by each transport mode (i.e. 550 for coastal shipping, 40 for rail, and 1 for the road), the maritime mode is shown to be slightly more efficient in terms of fuel consumption and CO2 emissions than the rail mode, and markedly better than the road mode. Both maritime and rail modes are about twice as efficient as the road mode. While their study results are specific to New Zealand conditions for their research, they provide an essential pointer towards ecological dimensions of enlarging hinterland connectivity.

PART II: SAGARMALA

19.2 Policy Background

India embarked upon economic liberalisation and expansion of its economic infrastructure in 1991. The opportunities provided by the engines of globalisation, however, highlighted the importance of strengthening Maritime infrastructure owing to the essential linkage of ports and related infrastructure to the national economy. Taking the national aspiration to emerge as an economic powerhouse, India formulated a vision regarding Sagarmala Projects (MoPS&W, 2019). It noted:

The Union Cabinet approved the concept of Sagarmala on 25th March 2015. As part of the programme, a National Perspective Plan (NPP) for the comprehensive development of India's 7,500 km coastline, 14,500 km of potentially navigable waterways, and the maritime sector has been prepared which was released by the Hon'ble Prime Minister on 14th April 2016 at the Maritime India Summit 2016.

In November 2016, the Government of India prepared a perspective plan for port-led development called Sagarmala. The report (MoS, 2016) in six volumes is based on the primary vision of the project, which is:

19.3 The Sagarmala Vision

The broad vision of the Sagarmala program stands on four pillars

- **Change how India moves logistically**
  - Increase the competitiveness of the core industry and the manufacturing sector by reducing supply chain costs and time
  - Increase the volume of trade via inland waterways and coastal shipping
  - Create an IT-enabled national multi-modal logistics system
  - Develop coastal roads through maritime states for inter-state port connectivity

- **Boost development through ports and shipping**
  - Develop three to four new mega ports
  - Develop a world-class trans-shipment port with a capacity of more than 10 million TEU
  - Create additional capacity of 1,200–1,500 MMTPA by strengthening existing ports
  - Develop maritime and manufacturing clusters around the ports
  - Develop 2–3 port-based smart cities and Coastal Economic Zones
- **Create world-class institutions**
  - Set up Sagarmala Development Company to enable project implementation
  - Set up world-class Private Partnership Programs in ports, waterways and connectivity projects
  - Develop an Indian Maritime University as a centre of excellence for maritime education
  - Set up best-in-class maritime services clusters in India
- **Empower coastal communities**
  - Create more than 1 million jobs in maritime and related sectors
  - Increase the GDP contribution of maritime states and sectors through a comprehensive coastal community development plan
- In a nutshell, Sagarmala looks at four broad areas, viz., Port Modernization, Port Connectivity, Port Led Industrialization and Coastal Community Development. The Sagarmala study estimates the potential to save around INR 35,000-40,000 Crores per annum by optimising logistics flows for key commodities by 2025. Four key initiatives could drive these savings:
- Coastal shipping to carry about 230-280 MMTPA from current and planned capacities across coal, cement, iron and steel, food grains, fertilisers, POL (estimated INR 21,000-27,000 Crores saving by 2025)
- New coastal capacities for bulk commodities (steel and cement) of 80-100 MMTPA (estimated INR 5,500-6,500 Crores saving by 2025)
- Reduced time to export containers by five days (estimated INR 5,000-6,000 Crores saving by 2025)
- Increase the share of railways in the container modal mix from 18 per cent by 2025, saving around 2,000-3,000 INR crores.While first two initiatives address port capacity and port area development, the third and fourth initiatives pertain to hinterland connectivity. Sagarmala study identifies the following as part of improving capacity and connectivity:
  1. Last-mile connectivity of ports with National Highways and Railway network:
     - Sixty road projects have been identified and referred to the National Highways Authority of India to be taken up under the “Bharatmala” programme
     - 27 railway projects have been referred to the Indian Railways
     - In addition, eleven dedicated freight-friendly corridors have been identified connecting ports with major production and demand centres

2. Dedicated toll lane for the EXIM containers on the National Highways:
   - Containers spend one day just waiting at the tax/toll stoppages for an inland travel distance of 1,400 km. dedicated toll lanes for EXIM containers can cut down this waiting time.
3. Simplification of customs reforms:
   - Simpler registration and self-sealing processes for factory stuffing;
   - installation of container scanners at major ports and ICDs (currently only at JNPT and Mundra); linking the EXIM license to unique identification numbers to allow for deferred checking of documents;
   - a dedicated fast lane processing area for rated exporters;
   - increased staff strength of customs to provide 24x7 service for importers and exporters
4. Increase the share of Railways in the modal mix from 18 per cent to 25 per cent:
   - The modal mix for container transport in India is heavily skewed in favour of roads due to high railway freight, lack of reliable scheduling of freight trains, and low last-mile connectivity. Moving the modal share of rail from 18 per cent to 25 per cent will reduce crude imports by 1.2 mn KL. The study identifies 14 priority routes for the road-to-rail movement that currently move 2.2 mn TEU from the road but can move 3.1 mn TEU to rail. Three initiatives can enable this shift:
     - Establish linkages with the Western DFC: Four last-mile railway connectivity projects were identified to link ports with the Western DFC to Mundra, Pipavav, Kandla and Hazira. Many of these can be undertaken by the recently established "Port Rail Company."
     - Improve ICD connectivity: ICD connectivity with ports varies a great deal. High-traffic ICDs like Tughlakabad have a frequency of up to 14 rakes a day, whereas many ICDs like Agra and Bhopal have less than one service per day on average. We propose interconnecting the ICDs through a "milk run" for higher aggregation and frequency of service. Three such milk-run routes have been identified
     - Rationalise freight pricing: The study calls for rationalising freight pricing of the railways, especially for more considerable distances, to reflect the actual cost and facilitate the shift towards railways
5. Implications for port and port capacity: The above recommendations have implications for the bulk and container traffic at Indian ports.

19.4 Status of Sagarmala

In the eight years since Sagarmala was conceptualised and implemented, the scale of projects under its overall vision totalled 802 with a total outlay of INR 2, 11,278 crores. The pillar-wise status as of March 2022 presented by the Ministry of Ports, Shipping and Waterways (MoPS&W) is as below (MoPS&W, 2022):

Project Theme	Total		Completed		Under Implementation	
	#	TPC	#	TPC	#	TPC
Port Modernization & New Port Development	242	2,61,052	77	26,968	58	36,955
Port Connectivity Enhancement	208	1,36,331	56	19,488	69	84,360
Port Led Industrialization	33	1,19,845	9	45,865	21	72,706
Coastal Community Development	88	8,174	18	1,423	22	1,362
Coastal Shipping & IWT	231	28,627	21	967	53	15,894
Total	802	5,54,029	181	94,712	223	2,11,278

Source: https://rajyasabha.nic.in/rsnew/Committee_site/Committee_File/ReportFile/20/166/319_2022_3_12.pdf, P2.

The Standing Committee Report indicates that the overall 22.5 per cent of the projects visualised under Sagarmala have since been completed (181/802); 27.5 per cent are in progress, and the remaining 50 per cent are yet to take shape on the ground. The report also points to a low level of committed expenditure caused by legal, institutional and coordination issues. A newspaper report (Saha, 2022) assessing the same progress spelt out a little more details:

Stage	Amount (in Rs. crores)	Number of Projects	Number of PPP
Completed	99,000	194	29
In Progress	212,801	218	31
Sanctioned	104,947	157	13
Detailed Project Report	56,429	138	25
Under Concept	76,004	95	25

Source: https://www.business-standard.com/article/economy-policy/rs-2-trn-projects-to-be-completed-by-2024-under-sagarmala-plan-sonowal-122032501141_1.html

Industry experts point out several reasons for the slow progress that Sagarmala has made, including Challenges Of Last-Mile Connectivity For Ports, Logistics, & Warehousing (Manikandan, 2022), Creating a conducive business environment and tangible incentives for the private players ((PTI, 2018). Counterview, a conglomeration of activists, also point to the challenges to coastal communities arising from Sagarmala by stating (Counterview, n.d.):

> The ill effects of the Enayam port were highlighted, and an upcoming port in Tamil Nadu was considered unviable. It will also lead to displacement in a thickly populated coastal district. The Vizhinjam port, already handed over to the Adani group, which is swallowing the entire coast, is being opposed by the fishing community in the Thiruvananthapuram district. The community and experts have already opposed the expansion of the Kamraj Ennoore port in Tamil Nadu.

However, the Department-Related Parliamentary Standing Committee on Transport, Tourism and Culture was more incisive in analysing the shortfalls of the projects under Sagarmala in its report on pages 34-46. Some of the significant observations by the Committee (MoPS&W, 2022) are:

To be globally competitive, the Indian Ports must drive mechanisation and adoption of technology to improve productivity and establish ancillary services within port premises to improve evacuation time. The Committee is disappointed to note that though the concept of the Sagarmala programme was approved in 2015, nearly eight years later, only half of the projects for ship repairs are under the implementation stage, and not even one has been completed (P 10)

Despite the enormous importance of the connectivity of ports, the Committee feels that the pace of work under this head has been slower than that under the modernisation of ports. Out of 208 projects, only 56 have been completed, and 69 still need to be implemented. Out of the 1.36 lakh Crores funding under this head, only a paltry sum of Rs. 19,488 Crores has been utilised to date in completed projects (p 14).

It was apparent that there was a lack of coordination among the different Departments and that the Shipping Ministry did not have complete information about the status of work being done by all agencies (p 15)

The Committee observes that land acquisition is one of the critical things to facilitate the process of port-led industrialisation (p 22).

The Committee observes that the Ministry had informed that it was funding skill development initiatives under DDU-GKY to train 10,000 persons annually for the next 3 25 years and notes that the actual number of persons trained seems to fall well short of the number (p 24-25)

The Committee notes that out of the 88 projects identified under the pillar of Coastal Community Development with funding of Rs. 8,174 lakh Crores, only 18 projects amounting to Rs. 1,423 lakh Crores have been completed, and 22 more amounting to Rs. 1,362 lakh Crores are under implementation. The Committee observes that not even one-third of the projects under this head has been completed/ under implementation. Only about one-third of the funding under this head has been utilised, which points to poor financial planning on the part of the Ministry (p 27).

The Committee notes that the share of Coastal Shipping and IWT in freight movement is presently significantly less due to limited infrastructure availability, lack of adequate depth of waterways for commercial cargo movement, shortage of inland vessels, and others. The Committee also recommends that the Ministry initiate concrete measures for integrating coastal shipping with other transport systems considering it as a part of the logistics chain so that linkages necessary for seamless connectivity in the multi-modal chain could be built (p 29).

The Committee, therefore, recommends that the Ministry, while amending the Merchant Shipping Act 1948, must establish a comprehensive and vibrant legal framework to reverse the trend of Indian cargo on foreign flag vessels. It must make proper safeguards and develop suitable frameworks to ensure that India has a healthy Indian flag fleet large enough to carry at least 50% of its EXIM and coastal cargos, with particular emphasis on coastal cargos (p29-30).

The Ministry has attributed the delays to many reasons, such as land acquisition, EC clearance, and CRZ clearance. The Committee is of the firm view that if pre-project activities like land acquisition and CRZ clearances had been completed before the award of projects, the pace of implementation of these projects would have been much faster (p 30).

The Committee's Report from pages 34 to 46 lists various recommendations regarding policy gaps, project shortfalls, community involvement and private-public partnerships (PPP) while noting that PPP appears to have made some progress. Considering these limitations, it is essential to evaluate some of the major opportunities that Sagarmala presents, apart from its obvious economic payoffs discussed earlier and the inherent challenges with possible options to hasten the realisation of its aims.

19.5 Opportunities

Sagarmala, as envisioned, presents a host of opportunities to enhance the maritime signature of India in the world. Viewed from political and economic perspectives, four substantial opportunities emerge, especially in view that these opportunities will laterally provide dividends in the social and economic spheres of the nation.

- **Employment Generation:** In the shipping and allied industries alone, as per the Statistics of India's Ship Building and Ship Repair Industry 2014-15, the total number of employees under the eight Public Sector Shipyards was 18,568, and the total number of employees in 15 private sector shipyards was 13,053 as on 31st March 2015. Per the basic Port Statistics of India 2020 (as of 31st March 2020), the employment figures are 9298 employees in Public Sector Shipyards and 4083 in Private Sector Shipyards. Even though this appears to be a substantial reduction in an employment capacity, Maritime India Vision 2030 has set an ambitious target to generate additional employment for 2.5 million persons (0.5 million direct and 2 million indirect) by 2030 in the core shipbuilding as well as the ancillary and supporting industry sector (PTI, 2021). The Sagarmala consultants have projected that the projects proposed as part of the National Perspective Plan, April 2016, will enable the creation of approximately 10 million new jobs, including 4 million direct jobs, in the next ten years (PIB, 2016).
- **Skill Development:** According to a report (Chappia, 2015) by National Skill Development Corporation (NSDC), India will need around 28.4 million strong workforces in India's booming Transportation, Logistics, Warehousing and Packaging sector. The sector, which currently employs over 16.74 million employees, is slated to employ more than 28.4 million employees by 2022. Hence, this sector will have one of the highest incremental human resource requirement of 11.7 million from 2013-2022, across the 24 sectors that have been mapped for assessing incremental human resource requirement in the country.
- **Inter-Ministerial Coordination:** Realising the importance of synergy between government departments, the Sagarmala project has been tailored with an inter-ministerial body of railways and shipping called The Indian Port Rail Corporation (IPRC).
- **Connectivity and Development:** The more significant implications of Sagarmala are multifold. The road transport corridors and railway infrastructure created in the hinterland will also boost local development in terms of commercial enterprises; services; higher demand for consumables; urban, semi-urban and rural infrastructure development, and boost employment in associated sectors of the economy. An integrated approach, therefore, at local, state and national level institutions would be critical to reap the full potential of Sagarmala.

19.6 Challenges

The implementation of government programs is a domain in which public institutions, private corporations, external agencies like FDI investors who will invite the attention of their respective governments, and the local populations in project areas are involved. In a democratic country like India, the complexities of managing Centre-State-Local Body relations to synergise their objectives must also be highlighted. The political landscape, particularly party politics in the affected states and their electoral demands, also warrants balancing. Rent-seeking vested interests with political clout also attempt to channel the projects towards their individual aims. In this paradigm of forces at play, specific broader issues that need to be addressed are:

- **Land acquisition:** In India, Land Acquisition is still guided by the colonial Act of 1894 in many parts. Though the Government has passed the Land Acquisition, Rehabilitation and Resettlement Bill 2015, encompassing various measures to address the complications involved in the process, the mere fact that every project would entail the comprehensive approach guided by 13 other legislations remains a challenge. Additionally, land is a Concurrent Subject. In states in Northeast and Scheduled areas where tribes hold the land, many other aspects like the Forest Rights Act 2006 and Panchayat Extension to Scheduled Areas Act 1996 also come into play. With the growing consciousness about environments and forests, the need to address sustainable development concerns, strong media, active Right to Information and Public Interest Litigation domains, and land acquisition for projects under Sagarmala need to be evolved with multi-agency participation and public involvement.
- **Internal Security Concerns:** Indian export sector is highly regulated with numerous government controls. Apart from the Indian Government, exporters also have to deal with the governments of the countries they trade. Several licenses and permissions need to be taken by both countries, which create confusion in the mind of the traders who refrain from making export due to this.
- **High Government Control:** Indian export sector is highly regulated with numerous government controls. Apart from the Indian Government, exporters also have to deal with the governments of the countries they trade. Several licenses and permissions need to be taken by both countries, which create confusion in the mind of the traders who refrain from making export due to this.
- **Rationalise Trade Policies:** Though a member of WTO, the Indian trade policies are not on the same pace as the international trade policies or requirements. International traders view India as a very complex market with many trade barriers. Their perception of these complexities includes paying high taxes, construction permits, cross-border trading and enforced contracts. India also needs to formulate its tax laws in such a manner to assist industries to compete as well as to comply with WTO agreements.
- **Review Import Tariffs:** The Tariff regime in India is oriented toward balancing the Chinese factor (Lovely, 2018). Non-revision of import tariffs keeping international factors in mind might dissuade many exporters from trading with India. Increased import tariff also leads to an appreciation in the country's real exchange rate. A high import tariff, additionally, encourages traders to lean towards illegal channels of import/export leading to smuggling, which has become a full-fledged industry.

- **Pace of Infrastructure Development:** The pace of infrastructure development will determine the increase in volumes of exports and imports. World Bank observed that one of the main challenges is the state of roads in India and the carrying capacity of the Indian railway. Warehousing and allied facilities will also determine the quantum of increase. Specialised warehousing for specific products will also be a matter to be addressed.
- **Export Publicity Promotion:** While encouraging Coastal Economic Zones (CEZ) under the Sagarmala project, India needs to adopt a calculated publicity campaign to encourage greater utility. Unless consistent and positive government support in terms of facilitation is undertaken, in real terms, the publicity campaigns may pay off very little. India's commercial and diplomatic assets abroad must be put to the best use in this direction. The tax reforms and concessions the Government implements must form the basis of such publicity. The bureaucratic machinery behind implementing these schemes, therefore, needs to synergise.
- **Rationalize and Simplify Processes:** To simplify the processes, an in-house appreciation of what is popularly called the 'Red Tape' needs to be undertaken. The complex documentation processes must be standardised and simplified for 'Ease of Trade'. It is essential to synchronise the tail-end delivery channels with the overall objective.
- **Evaluate and Address Ecological cum Environmental Concerns:** The New Zealand study (Cenek, Kean, Kvatch, & Jamieson, 2012) is a vital pointer, especially in India, where sustainable development is critical to developmental planning. Alongside sustainability issues, climatological concerns like emission standards need to be addressed. CO2 emissions and the eventual impact on global warming due to extension of transport corridors, rail networks, CEZs and hinterland industrial pockets must be addressed comprehensively. Greening the entire length of road and rail networks may look ambitious, but it can be addressed by involving local communities and panchayats through initiatives like Jan Bhagidari.

19.7 Recommendations

The fourfold objectives of Sagarmala have the potential to enhance external trade through port development and, as the vision statement says, 'port-led development. However, realising these objectives would depend on three critical factors – budgetary allocation, bureaucratic resolve and public involvement. Keeping the challenges brought out above, the following is recommended:

- **Group of Ministers (GoM):** The development of a logistical network, port development and coastal area development involves a host of ministries. Ministry of Shipping has already formed IPRC with the railways. On a more comprehensive note, the lead Ministry being Shipping, formation of GoM consisting of Shipping, Surface Transport, Railways, Home, Finance, Defense, Environment and Forests, Commerce, Industries, Power, Water and other allied ministries is felt necessary to formulate and drive policy from the top. Forming an Expert Committee of members from academic and research institutions of relevant disciplines to advise the GoM will help address socio-economic-technical concerns within the policy parameters.

- **Centre-State Working Groups:** The policies and plans need to be driven by bureaucratic hierarchy across the states that are factored in Sagarmala. Working Groups of bureaucrats of the appropriate level are necessary for determining plan prerogatives and evaluation of projects. Area Commander Equivalents of the Army, Navy, Coast Guard and Marine Police may also be factored as members to address relevant issues.
- **Public Interface:** Considering the sustainability issue, land acquisition and other sociological concerns, District Collectors may form working groups with NHAI, state PWD, Water Supply, Forests, Electricity, Irrigation, Railways, Panchayat Representatives, local NGOs, and community leaders to identify community concerns and address them through Centre-State Working Groups. The appointment of Special Development Commissioners to exercise control and drive local.
- **Industry Interface:** Development of infrastructure calls for joint working between Banks, Commissioners of Industries, National Small Industries Corporation (NSIC), Customs, Sales Tax and industry representatives like FICCI, representatives of foreign investors, and other relevant government /quasi-government/private groups. These groups must work with the public interface and Centre-State bodies to synchronise plans and projects.

19.8 Conclusion

Sagarmala, as evident from the Perspective Plan 2016 and the Maritime India Vision 2030, is a comprehensive project to address concerns like export promotion, port-led development, industrial capacity expansion and community development. From the vision statement, it is manifestly an ambitious program. India straddling the crucial Indian Ocean region, is already a vibrant economy, and the GDP is set to grow around 7-8 per cent. With exports already doubling and minor ports increasing the share of exports to nearly half of the total, Sagarmala's objectives are bound to enhance India's maritime signature. The sea has always played a crucial role in the economic development of India, and an integrated, comprehensive approach to translating Sagarmala into reality will pay rich dividends to both the economy and communities that directly or indirectly benefit from the sea.

The onset of Covid19 appears to have affected the progress of the projects connected with Sagarmala. In no small measure, Chinese advances in India's northern borders have also diverted national attention. However, the geopolitics in the Indo-Pacific and ever-increasing Chinese footprints in Indian Ocean Region point to the need to remain committed to the framework envisaged in the project. With India's safety of maritime trade and the infrastructure necessary to execute it, modernisation of its merchant and naval fleets, port and hinterland infrastructure, and connectivity are imperatives to emerging India.

The Indian Ocean contains the third largest plastic patch exceeding five million square kilometres, seriously affecting marine life and the lives of millions of South Asians dependent on the sea for their livelihoods. With the envisioned increase in maritime capacity, other challenges like oil spills and non-traditional security threats would only increase. Therefore, the Sagarmala and other associated programs must develop a policy framework and installed capacity to address these challenges. With an increasingly potent private enterprise emerging in India, there is also an absolute need to promote quality education and research in the maritime domain.

The pace of progress of Sagarmala projects so far indicates that its inherent challenges must occupy priority in resolution. The civil society concerns about environmental degradation and coastal community interests need to be surveyed independently to find a balanced accommodation within the project's overall objectives. This would call for the involvement of expertise from academia, industry, and civil society. Maritime University, founded in 2008, could become the nodal point for theoretical and project-oriented evaluation of the components of Sagarmala.

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Section 20

ECONOMIC ASPECTS OF THE AFGHANISTAN CRISIS

By Sunil Pant



August 15, 2021, was a watershed moment in the history of the Afghan Nation. It saw the return of the Taliban preceded by an abandonment of the elected government by the incumbents and their allies. An immediate fall-out was the cessation of all external assistance and seizure of all foreign currency assets of Afghanistan as the world grappled with an unprecedented situation where most of the persons assuming power were under UN sanctions. Consequently, the new rulers failed to secure recognition from any country, including their erstwhile supporters.

For a country dependent predominantly on foreign aid and remittances to finance its expenses in a primarily imports-driven economy, the above was the proverbial "double whammy"! The situation has been compounded by a drought persisting since 2018, a Covid ravaged economy, a lack of governing experience with the ruling group, a sharp increase in the numbers below the poverty line, an acute scarcity of qualified personnel to man key positions and others.

Afghanistan, a nation with a troubled and conflict-ridden history, is now confronted with a humanitarian catastrophe, near collapse of the economy, an increasingly moribund Banking System and international ostracisation. Even as challenges abound, the spectre of starvation and disease, mounting numbers of

internally displaced persons, and political conflicts, among others, looms large. The drive for a meaningful resolution remains bogged down in a web of rules, regulations and unstated self-interests.

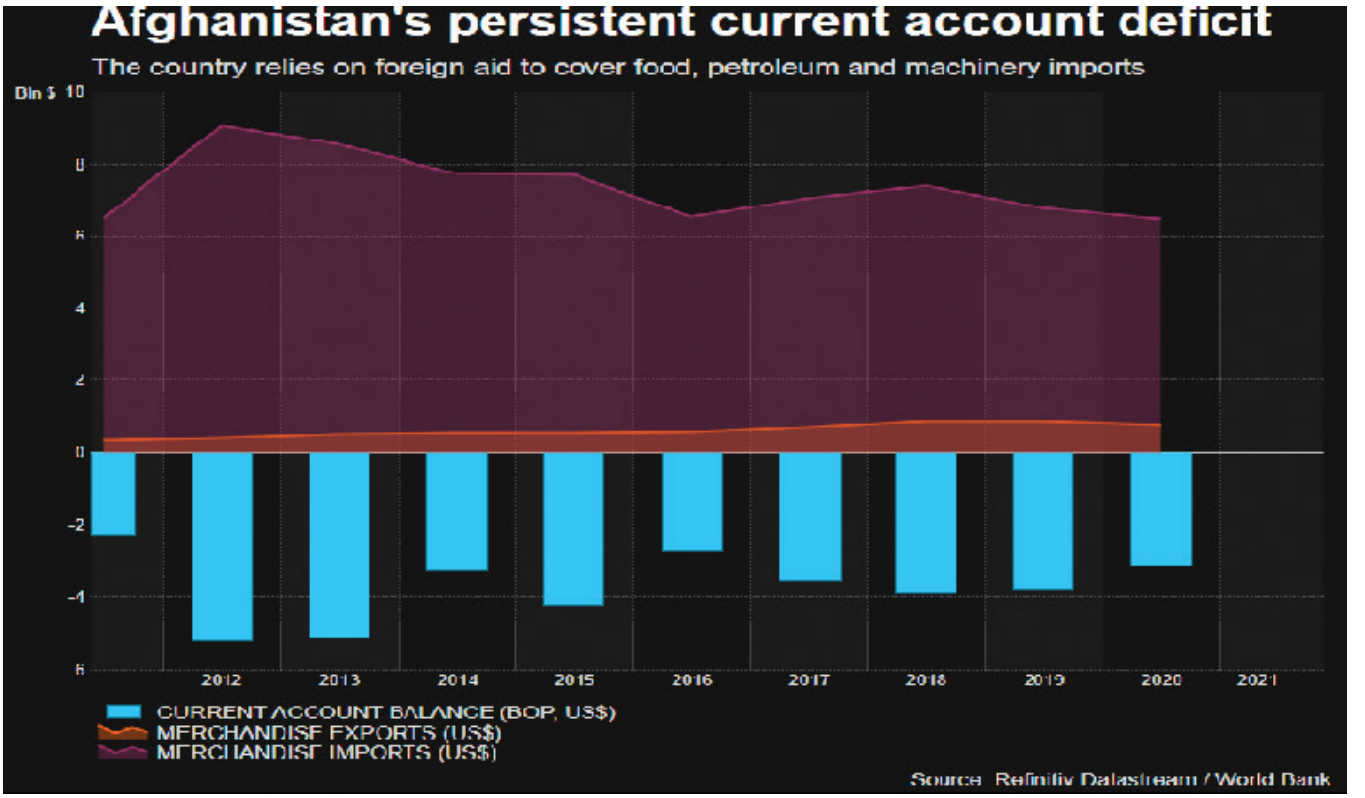
Today, as new geo-political events unfold elsewhere, the issues thrown up by this crisis are in danger of being ignored – to the detriment of its people and the neighbourhood.

20.1 Economic Overview

Afghanistan's nominal GDP was $21.7 billion in 2018 or $72.9 billion by purchasing power parity (PPP), giving a per capita GDP of $2,024 (PPP). Around 54.5% of the population lived below the poverty line of $ 0.94 per day, projected at around 72% in 2020. An estimated 94% of the population lived on less than $2 per day in 2019. The service sector contributed the most to the GDP (54.4%), followed by agriculture (25.5%) and industry (20.1%).

In 2018, most imports came from Iran, China, Pakistan and Kazakhstan, while 84% of exports were to Pakistan and India (World Bank, 2022).

Despite having $1 trillion or more in mineral deposits, Afghanistan remains one of the world's least developed countries. The country imported over $7 billion worth of goods in 2018, but exports amounted to only $784 million, comprising mainly handicrafts, fruits and nuts. It had $2.8 billion in external debt. While the Nation's current account deficit was financed mainly with donor money earlier, the present position is indeterminable in the absence of reliable statistics. However, it is likely to have deteriorated with the stoppage of aid and the inelasticity of demand for food and essential supplies. The Chart below illustrates the trend up to 2020, for which data was available:



The political events of August 15, 2021, triggered a complex economic crisis involving the following overlapping drivers: (Ref: World Bank Afghanistan Economic Monitor, April 2022)

i) Cessation of aid (previously equal to 45% of GDP) driving a sharp fiscal contraction, leading to collapsing demand (total public spending is expected to have declined by around 60%);

ii) Major disruption to essential services (including primary health and education), which had previously depended on international aid support;

iii) A loss of hard-currency aid inflows, which had previously financed a colossal trade deficit (equal to around 30 per cent of gross domestic product - GDP);

iv) Loss of access to the overseas assets: Following the Taliban's takeover of the country in August 2021, the United States has frozen about USD 9.2 Bn in assets belonging to DAB;

v) Severe uncertainty and anticipated lower donor inflows have put pressure on the exchange rate, with the Afghani depreciating from about AFN 76 to 1 US Dollar (USD) at the beginning of 2021 to around 90 AFN presently;

vi) The cessation of international payments by correspondent banks due to anti-money laundering and countering the financing of terrorism (AML/CFT) concerns, undermining the capacity of firms to pay for imports or receive payment for exports, disrupting remittance flows, and leaving international humanitarian and non-government organisations (NGOs) unable to pay salaries or contractors within Afghanistan;

vii) Loss of central bank access to supplies of Afghani and USD cash notes ceased, creating a liquidity crisis in the banking system, constraining firms' and households' access to working capital and savings held in commercial banks;

viii) Rapid declines in investment confidence, given pervasive uncertainty and fear; and

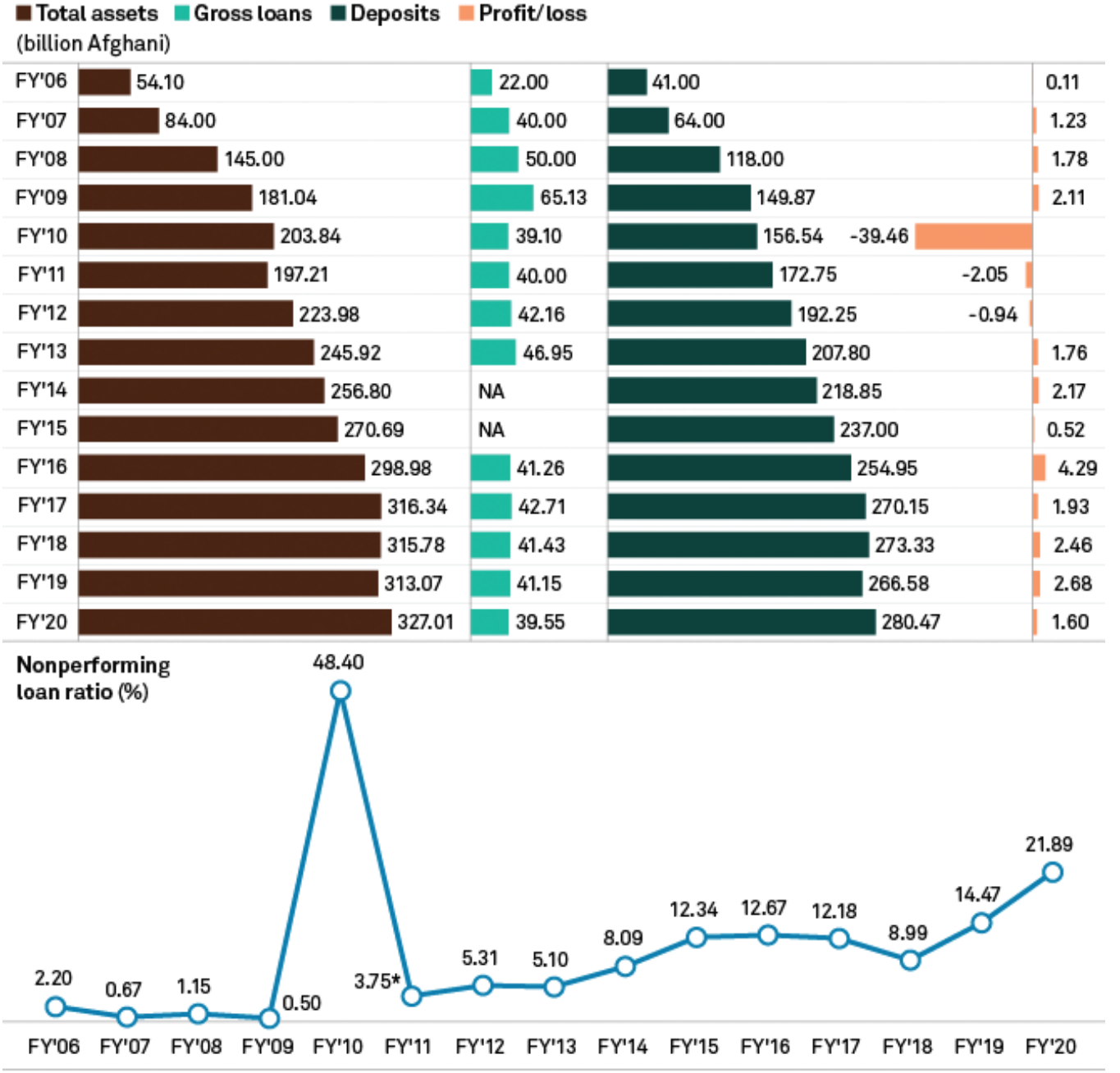
ix) Loss of human capital, as tens of thousands of highly-skilled Afghans fled the country and new restrictions were imposed on women's participation in the private and public sectors.

The output over the last four months of 2021 is expected to have declined by more than one-third relative to the same period in 2020. Despite declining demand, headline year-on-year (y-o-y) inflation reached 12.7 per cent in December. The food price inflation reached 17.7 per cent reflecting depreciation, increasing international prices and import constraints arising from disruptions to international transactions (imports declined by 47 per cent over the second half of 2021, relative to the same period in 2020).

20.2 Impact on the Financial Sector

Da Afghanistan Bank (DAB) is the country's Central Bank, and the Afghani (AFN) is the official currency. The financial sector at the end of 2020 comprised 12 commercial lenders, including three state-owned, two foreign and seven private-sector banks.

Key financial metrics of Afghanistan banking sector (2006-2020)



Data compiled Oct. 7, 2021.
NA = not available
* The aggregate ratio excludes a crisis-stricken bank.
Afghanistan's fiscal year changed effective from 2012. Fiscal 2020 refers to the period from Dec. 22 , 2019, to Dec. 20, 2020.
Nonperforming loan ratio represents nonperforming loans as a percentage of gross loans.
Source: Da Afghanistan Bank

Private-sector banks accounted for 67.4% of total banking sector assets, while state-owned banks held a 26.9% share. The total assets in the banking system stood at AFN 327.01 billion (USD 4.3 Bn), deposits totalled AFN 280.47 billion (USD 3.7 Bn), and gross loans were AFN 39.55 billion (USD 0.5 Bn) at the end of 2020.

Apart from the above, a network of Money Service Providers (MSPs) and Foreign Exchange Dealers (FXD) functions across the country. As of late 2019, the 1561 MSPs and 1639 FXDs held licenses from DAB. However, it is estimated that unregistered MSPs may number in the thousands.

According to the World Bank's "Rapid Private Sector Survey" conducted in late 2021, 81% of respondent firms reported difficulty sending or receiving payments domestically, while 95% faced difficulties dealing with international payments. Around 85 per cent of NGOs reported that the inability to transfer funds from overseas and limited access to cash is a significant constraint to their operations. This has forced numerous enterprises to increasingly use informal financial services, including through the hawala system.

The steep increase in the Stressed Assets held by Banks due to business failures in an adverse operating environment has also hit their Capital Adequacy, which would require Capital support once the moratorium on recognition of NPLs is withdrawn.

The financial sector, already facing constraints, has been pushed into a deep crisis compounded by a significant customer trust decline. System liquidity was substantially eroded in the lead-up to the Taliban takeover due to a high volume of cash withdrawals from commercial banks and intensified US dollar auctions. Banks ceased operating immediately following the Taliban takeover and, since reopening, have faced significant difficulties in processing international transactions due to the Central Bank's restrictions on capital outflows and the reluctance of offshore correspondent banks to engage in transactions due to concerns associated with the sanctions. Firms and households have been unable to access bank deposits, with strict limits imposed by the central bank on the withdrawal of US dollars and local currency.

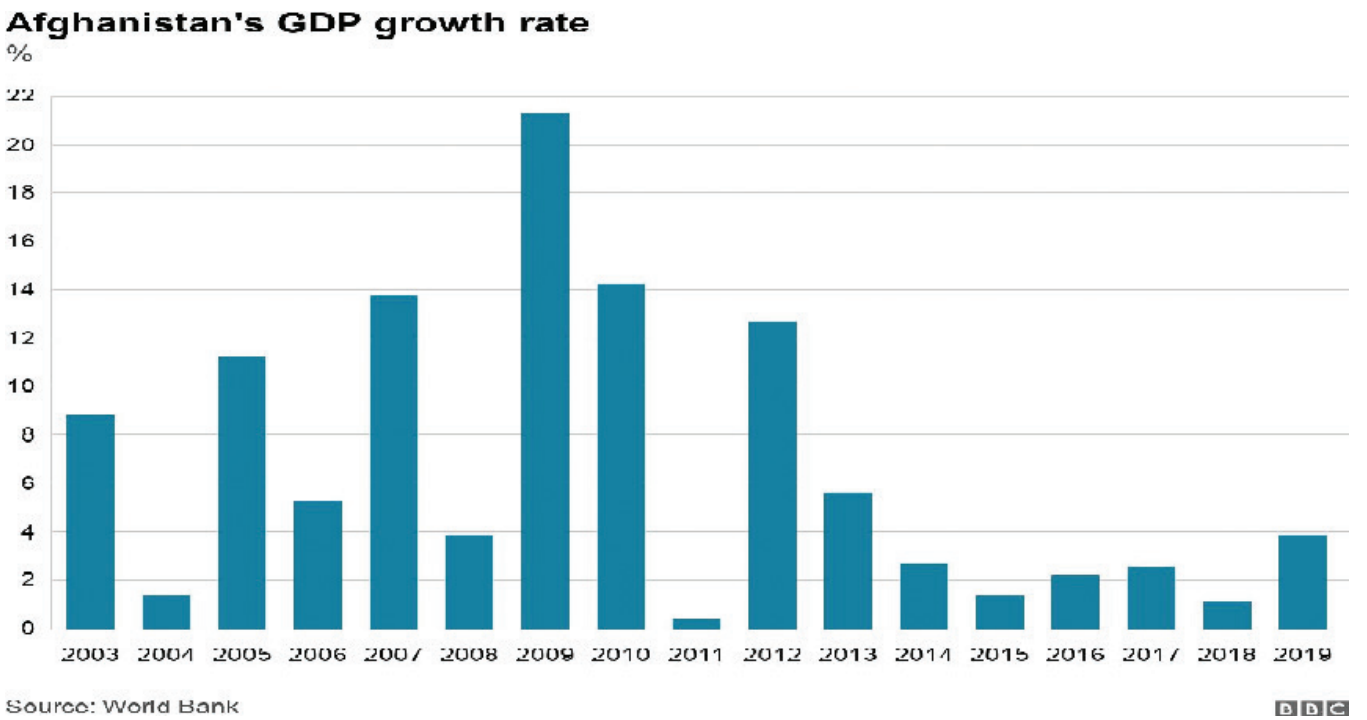
20.2.1 Challenges

Afghanistan's economic outlook is stark. Human development outcomes will likely deteriorate in the context of substantial disruptions to essential services and increased poverty. The Russian invasion of Ukraine, war, and associated sanctions may significantly exacerbate impacts via increased imported food and fuel prices. Under any scenario, Afghanistan will face a smaller economy, significantly higher rates of poverty, and more limited economic opportunities for the 600,000 Afghans reaching working age every year.

This has brought to the fore various challenges in the way of the Nation's efforts to achieve a level of minimal prosperity, some of which are listed below: (Ref: WB Afghanistan Country Update – April 2022)

20.2.2 Sharp decline in GDP

The sudden stoppage of public sector activity has affected all facets of the economy, especially in the service and construction sectors, which accounted for 58 per cent of the GDP. Declining grants and a loss of access to foreign exchange have created a balance of payments crisis. Afghanistan has historically relied on grant inflows to finance its massive trade deficit (28 per cent of GDP in 2020). On the current trajectory, the country is facing shortages of critical household goods, including food and fuel, since around 80 per cent of electricity, between 20-40 per cent of wheat and nearly all fuel oil are imported.



It would be observed from the above Chart that the GDP growth rate was already faltering before the change of regime due to the impact of a prolonged drought since 2018, Covid Pandemic and low vaccination (>5%), deteriorating internal security and corruption.

i. The position after the takeover by ITA is challenging to determine. However, empirical evidence points to a continued decline in economic parameters.

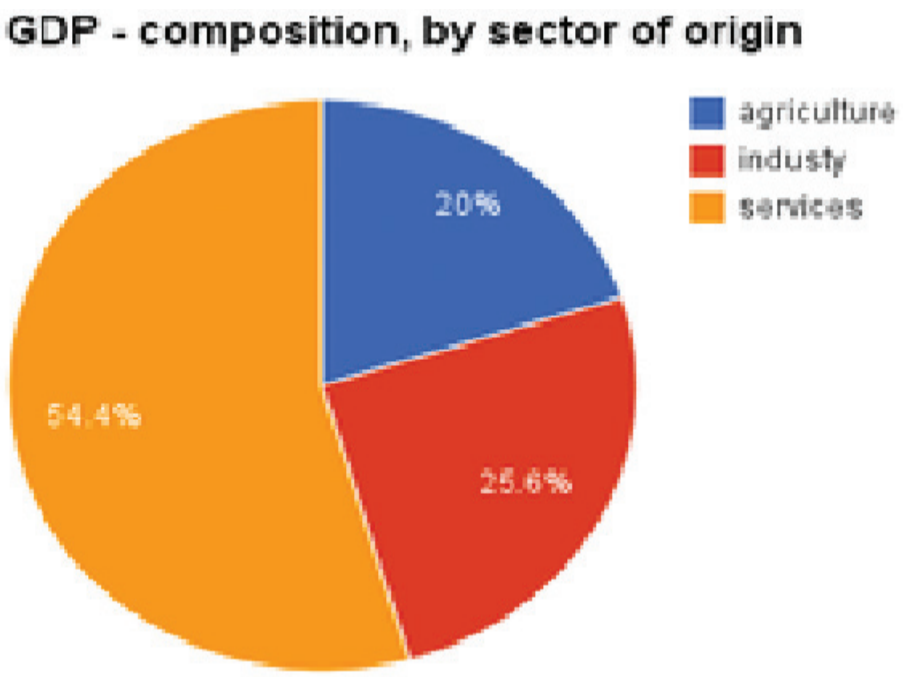
ii. **Fall in Household income**

The isolation of the Afghan economy following political crisis risks arising from t he changes last August erased development gains achieved over the past two decades. It has resulted in grave poverty, displacement, fragility, and extremism threats to Afghanistan, the region, and the world, says the World Bank's new "Afghanistan Development Update". Further, another WB report, "Towards Economic Stabilization and Recovery", released recently, finds that per capita incomes are likely to have fallen by around one-third over the last months of 2021, wiping out much of the economic progress achieved since 2007, and significantly increasing household hardships.

iii. The combination of declining incomes and increasing prices has severely deteriorated household living standards. At the time of the latest Afghanistan Welfare Monitoring Survey (AWMS) conducted by the World Bank in October-December 2021, 70 per cent of Afghan households had insufficient income to meet basic food and non-food needs. Extreme hardship has led to the widespread adoption of harmful coping mechanisms such as borrowing at high-interest rates, the sale or consumption of assets, and reduced investment in human capital. This will have long-term consequences, given Afghanistan's very young population.

iv. **Sectoral impact**

The aid-dependent services sector has been hit hardest by the crisis, leading to a collapse in urban employment and incomes.



The services sector, which contributed 54% of the GDP (Employment 22%) in 2017, is dependent mainly on the purchasing capacity of customers. This capacity has been hit by the loss of income in the hands of people. At the same time, agricultural output, with a share of 26% in GDP (Emp 60%) in 2017, is estimated to have declined by around five per cent due to prolonged drought and higher prices for key inputs. This has reduced rural incomes again, adversely affecting the local Services Sector. While the formal mining and industrial sector, contributing 21% to the GDP (Emp 18%) in 2017, has also been severely affected, some industrial and mining units have been able to continue operations.

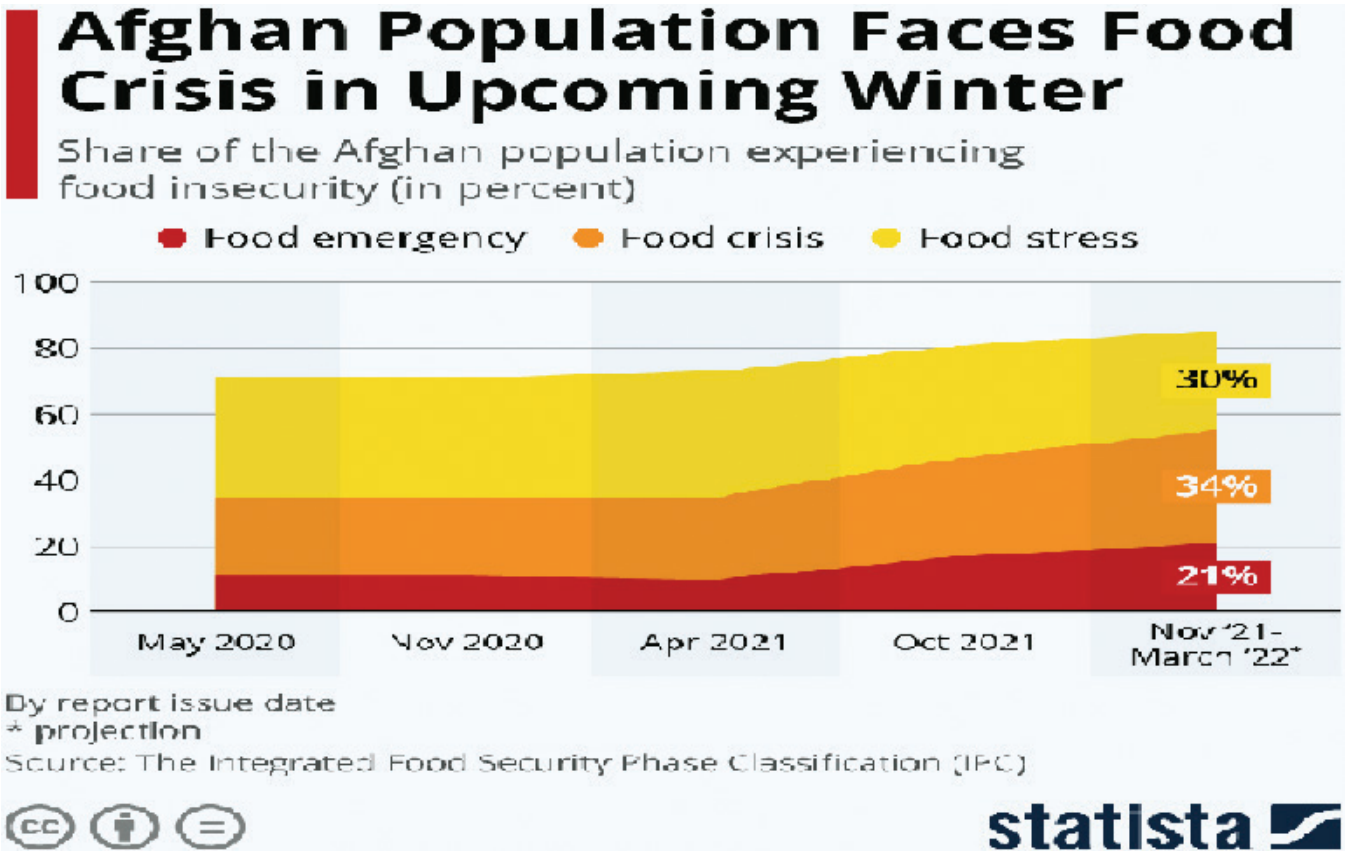
It is estimated that the already reduced per capita income of around $500 may decline by another 30% by 2023 if there is no solution to the present problems. It is estimated that the already reduced per capita income of around $500 may decline by another 30% by 2023, in case no solution to the present problems is found soon.

v. **Socio-Political Impact**

The severe drought since 2018, resulting in a significant fall in agri-incomes, added to service sector collapse and mounting job losses, has caused a spurt in the number of Internally Displaced Persons (IDPs), which were estimated at 4.6 million (~11% of the population) as at the end of 2020. The number has only increased since. Meanwhile, the third COVID-19 wave triggered in 2021 has imposed daunting socio-economic costs with less than 5% of the population fully vaccinated.

vi. **Humanitarian Crisis**

Since August 2021, Afghanistan has endured a deepening and increasingly vicious humanitarian crisis. United Nations estimates that at least 55% of the population will have faced a crisis by March 2022. Acute malnutrition is spiking across the country, where over 95% of households are experiencing insufficient food availability.



The International Rescue Committee has noted that the current crisis could lead to more deaths than the 20 years of war. A February 2022 survey by Save the Children found that 82% of Afghan families had lost wages since August 2021 and were sending their children to work, often for minuscule wages, while 7.5% had to resort to begging or seeking assistance from charities. (World Bank Press Release: SAR/2022, April 13, 2022).

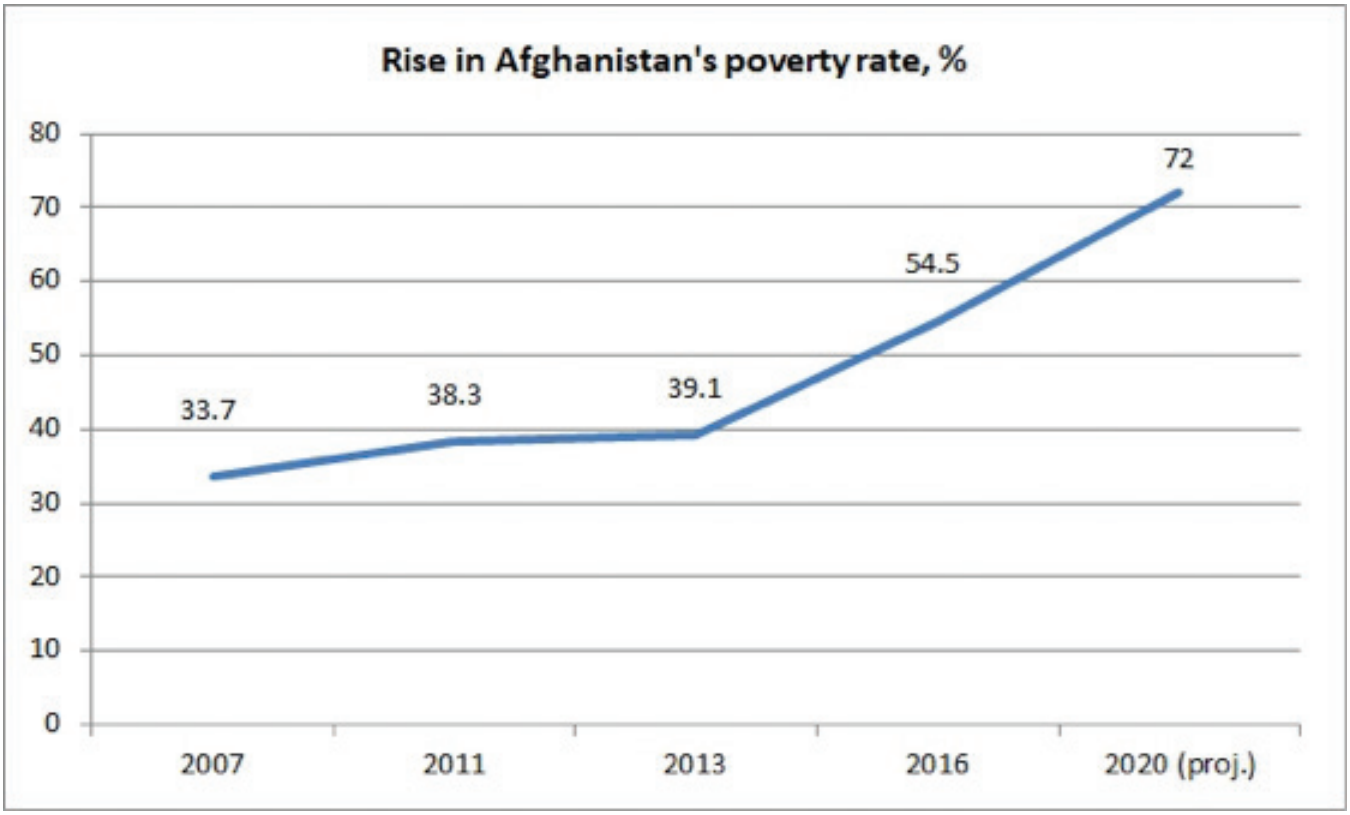
vii. **Financial Sector**

The average population per bank branch is more than 115,000, which points to a severely unbanked environment. Even in terms of accounts serviced per branch, the penetration is barely 10% (2019 est.). This non-availability of a banking environment is compounded by the acute shortage of currency, necessitating its rationing. The primitive nature of electronic funds transfer facilities makes the distribution of assistance to target groups largely unviable. It has been estimated that even small batches of paper currency flown in on UN flights lose upwards of 10% in transactional costs, insurance, fees, etc. Under the circumstances, no matter how massive the size of humanitarian assistance arranged by donors is, reaching the target beneficiaries would be extremely difficult.

As a first step, it would be necessary to resuscitate the Central Bank within mutually agreed parameters of the International entities and ITA to provide a comprehensive structure for ensuring compliance and efficiency of the Banking system. In case that is not immediately workable, the two parties could either agree on an interim arrangement using a private body setup for a specified role or use an existing Bank for the limited purpose of a remittances funnel. However, given the disinclination of the Taliban to accept donor conditionalities, as reported to have been indicated by key members at the Taliban Economic Conference on April 19, 2022, this may be challenging to achieve.

viii. **Outlook**

Under current conditions, the outlook for Afghanistan's economy is dire. With international assistance limited to supporting humanitarian needs and essential services, incomes will likely remain stagnant. The economy is expected to contract further throughout 2022, with real GDP per capita declining by around 30 per cent between end-2020 and end-2022. The economy is expected to grow slower to improve livelihoods or generate opportunities for the 600,000 Afghans reaching working age every year.



The Afghanistan Economic Monitor for April 18, 2022, highlights that the ongoing humanitarian support continues to support a small degree of economic stabilisation. The exchange rate has appreciated slightly, primarily due to USD cash shipments. Increased food supply through humanitarian channels and exchange rate appreciation have helped dampen inflationary pressures in March 2022. Labour demand and nominal wages have improved slightly in March 2022 after falling for many months. Real wages also increased slightly in March 2022 due to stable inflation and higher nominal wages. Imports continue to fall. According to Pakistan's trade statistics, Afghanistan's imports from Pakistan declined by 54 per cent in Q1-2022 compared to the same quarter of 2021 and decreased by 32 per cent compared to Q4-2021.

Output over the last four months of 2021 is expected to have declined by more than one-third relative to the same period in 2020. Despite declining demand, headline year-on-year (y-o-y) inflation reached 12.7 per cent in December. The food price inflation reached 17.7 per cent reflecting depreciation, increasing international prices, and import constraints arising from disruptions to international transactions (imports declined by 47 per cent over the second half of 2021, relative to the same period in 2020).

Large inflows of in-kind humanitarian supplies and USD cash through humanitarian channels over late 2021 and early 2022 have supported some economic stabilisation. In a primarily cash-based economy, the withdrawal of Afghanis and US Dollars resulting from a flight of capital was disastrous. The initial closure of banks and subsequent rationing of currency accelerated the impoverishment of the masses. However, recent inflows have increased the money in circulation, with significant outcomes for:

i) increasing supply of USD within the economy, driving appreciation of the exchange rate;
ii) improving consumption demand through local payment to humanitarian workers and suppliers; and
iii) enhancing the supply of essential household goods, leading to lower prices.

Following the initial disruption, access to some services has now improved due to

i) efforts by the international community to resume financing of health facilities through United Nations (UN) agencies;
ii) effective use of cash shipments to bypass financial sector constraints; and
iii) improved security across much of the country.

However, under any scenario, the economic outlook for the country is bleak. Afghanistan will face a smaller economy, significantly higher rates of poverty and more limited economic opportunities for the over 600,000 Afghans reaching working age every year. Human development outcomes will likely deteriorate in the context of substantial disruptions to basic services and increased poverty. The Russian invasion of Ukraine, war, and associated sanctions may significantly exacerbate impacts via increased imported food and fuel prices.

20.3 The 1st ITA Budget

The Interim Taliban Administration (ITA) has tried to get a grip on the financial position by initiating steps to restore revenue collection. Monthly collections reached Afs 13 billion on average during January-March 2022, slightly exceeding the monthly average of the first quarter of 2020. Despite various grants, however, budget spending has sharply declined.

The ITA's interim budget approved in January 2022 includes total recurrent allocations of 34% lower than 2019 levels, mainly due to cuts to the defence (50%) and public order and safety (34%) budgets, while those for education and health were maintained. Most development expenditures were eliminated. Actual expenditures are expected to have fallen significantly below planned levels due to revenue shortfalls and an unfinanced deficit.

It is challenging to analyse the budget without details, except through related news. Reuters, in their report of May 14, 2022, have indicated a budget deficit of USD 501 Mn for the year. Meanwhile, *Tolo, a local news channel*, has quoted Azeraksh Hafizi, an economist, to point out that "*The budget for the fiscal year 1401(CY2022) is the smallest budget over the past 20 years. The development budget is at its lowest, with 27 billion Afs. With the implementation of this budget, it is difficult to develop the economy*". The budget of the previous solar year of 1400 (CY2021) was 473 billion Afs, of which 311 billion Afs was for normal operations, and 160 billion Afs was for development.

The increasing financial distress faced by the masses will need to be addressed by the ITA since delay or failure could lead to domestic unrest and conflict.

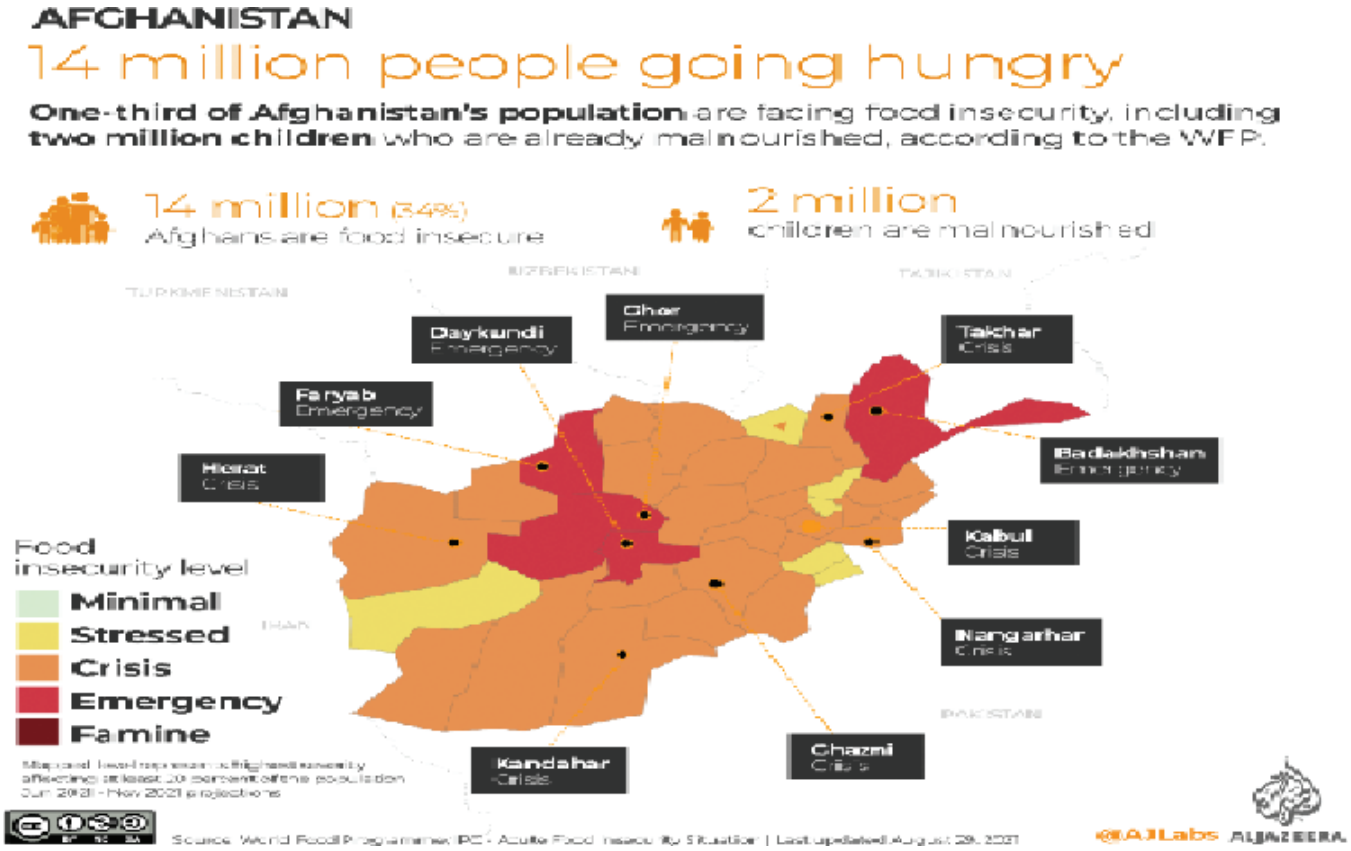


Figure 20.1: *Projections: November 2021*

20.4 External Assistance

A select Neighboring Countries of Afghanistan meeting was held in Tunxi, Anhui Province, in China, on March 31, 2022. Foreign ministers or high-level representatives of China, Iran, and Pakistan, among others, were present. Some of the major commitments made were:

i. Pakistan offered Afghanistan the opportunity to establish cold storage facilities close to border crossing points to assist the trade in fruits and vegetables. It provided three consignments of wheat to Afghanistan. It has also channelled humanitarian assistance from various domestic philanthropic organisations. It has allowed the export of several items to Afghanistan in Pakistani Rupees via land routes to facilitate Afghanistan's economy. Customs duty was reduced/waived on Afghanistan's perishable items, such as fruits and vegetables exported to Pakistan'. It has also announced an in-kind humanitarian assistance package of PKR 5 billion (around $ 20 million). Pakistan has also provided more than 13,000 tonnes of humanitarian aid to Afghanistan under the Pak-Afghan Cooperation Forum.

ii. China has provided additional humanitarian assistance through bilateral and multilateral channels, such as food, winter supplies, COVID-19 vaccines, and medical equipment. It has also committed to assisting its enterprises in helping Afghanistan improve their mobile network and develop mineral resources. It also will speed up projects such as the Aynak Copper Mine and the Amu Darya Oilfield in due course. China supports the resumption of businesses by its enterprises in Afghanistan and encourages them to invest in agricultural production and infrastructure when the security situation permits. It supports Chinese enterprises to continue to provide development assistance to Afghanistan for small and medium livelihood projects to benefit the Afghan people.

iii. Iran has offered to help the people in different cities of Afghanistan and is consulting and coordinating with the Afghan side to send new supportive shipments. It will continue to provide emergency fuel, food, and other necessary daily life items to the people of Afghanistan. Iran is developing the port of Chabahar and the related infrastructure along with its land and sea transit routes and projects such as the Mahiroud-Farah Road to help strengthen Afghanistan's transit options. It has provided various items of humanitarian aid shipments, including food, medicine, and health has sent more than 30 shipments.

While India and USA were not a part of the above initiative, the steps taken by them included the following:

A. **India:** In its budget for 2022-23, India has earmarked an amount of Rs. 200 crore as development assistance to Afghanistan, besides allocating Rs. 100 crore for the Chabahar port project. In addition, India gifted 50,000 tonnes of food grain to the country's people as humanitarian assistance and 5 lakh doses of Covaxin in 2021-22. As of now, the total assistance provided to the people of Afghanistan, despite the absence of diplomatic relations, is in the range of USD 650-750 Mn, making India the largest Regional provider of aid for Afghanistan. This aid is in line with the traditional hand of friendship extended to the previous regime, with total developmental assistance exceeding USD 3 Bn in the last 20 years, the highest in this category.

B. **USA**: The Special Inspector General for Afghanistan Reconstruction (SIGAR) noted in its January 2022 report that the UN's Office for the Coordination of Humanitarian Affairs stated that donors contributed $1.67 billion to Afghanistan's humanitarian assistance programs in 2021. The United States contributed the largest amount, over $425 million. On January 11, 2022, the White House announced an additional $308 million in US humanitarian aid for Afghanistan.

Despite the above commitments, weak delivery infrastructure, inadequate verification capabilities, conflicting interests, and low trust levels are likely to remain major impediments to a full-scale roll-out of various assistance schemes.

20.5 Emerging Scenario

Since their return to power in August last year, the Taliban have taken several controversial steps, spurring international outrage. Despite assurances that their administration would be more moderate this time (the Taliban ruled Afghanistan from 1996 to 2001), they are yet to allow older girls to restart education. They have also introduced rules that mandate that women and girls wear veils and require them to have male relatives accompany them in public places.

Meanwhile, during a human rights conference last week, UN Chief Antonio Guterres claimed that terrorism was resurgent in Afghanistan and could become a global threat. "As a moral duty, a legal obligation, and a strategic imperative, let us put human rights where they belong — front and centre — in the fight against terror," he was quoted as saying. (Source: Times Now report 17/05/2022).

To unlock additional international assistance and support, there is still an expectation that the Interim Taliban Administration would adhere to basic standards for treating women and girls, respect for human rights and sound economic management. However, recent actions by ITA seem to belie this belief. The Taliban have scrapped several 'unnecessary' departments, including the country's Human Rights Commission.

The continuing exasperation of the international community with the Taliban's hardening approach regarding the above goals obstructs broad-based support and possible recognition for the ITA. This hardened approach has prevented a comprehensive economic assistance program for better macroeconomic management, broader public services, infrastructure, and the private sector, which could facilitate a much faster recovery.

The recent identification of the Al Qaida Chief, Ayman al-Zawahiri, in Kabul and his elimination by a Drone strike is likely to call into question the earnestness of the ITA to live up to its Doha pledge of not harbouring terrorists. This failure to adhere to the Doha Pledge may further delay the release of much-needed humanitarian and economic assistance.

The WB report (Afghanistan Overview: 13/04/2022) points to a possible alternative pathway for the authorities. Afghanistan enjoys substantial economic potential arising from its agricultural and horticulture sectors. It has a substantial endowment of natural resources. Its young and growing population, if properly utilised and supported by the hoped-for improvements in the security environment, could harness this potential for economic stabilisation and recovery based on a sustainable private sector-led economic model.

However, moving towards the above trajectory would require coordinated actions by the international community and the interim Taliban administration. The possible realisation that a prolonged impasse may not be beneficial may be a contributory factor to the recent attempts by ITA to step up engagement with regional and global entities.

20.6 Role of the Private Sector

The Private Sector has been encouraged to play a pivotal role in the country's development since the USA and its allies stepped into Afghanistan post-09/11. Their contribution to the pre-ITA regime(s), based on available data, is reflected in the Chart below:

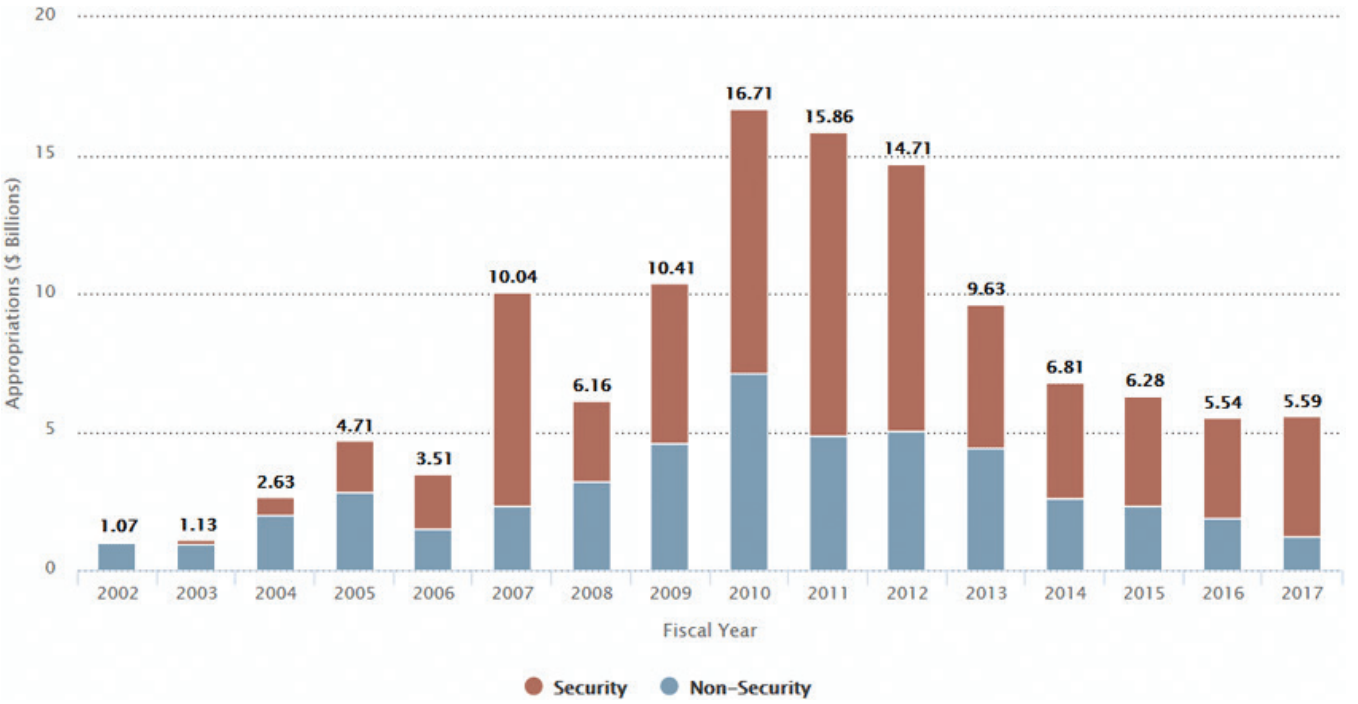


Figure 20.2: Private Sector Development and Economic Growth *(Source: SIGAR)*

Given the significant cuts in Government expenditure and Aid inflows, the onus for rescuing the national economy from its present doldrums is in the hands of the Private Sector. This need for dependence on the private sector is also emphasised by the continuing inability of the Donors and the ITA to agree on a standard blueprint for going forward.

The initial insecurity resulting from the collapse of the Precious Government and the Defense forces led to an unprecedented exodus of skilled manpower. This exodus has resulted in the weakening/under-staffing of critical offices/departments of the ITA, severely hampering their ability to move forward.

The national economy has also been hit by the sharp reduction in aggregate purchasing power and consumption levels due to the exit by NATO forces, Contractors and stoppage of aid. The impact of the recent political and economic turbulence has manifested itself in various ways, inimical primarily to the Services Sector, accounting for over 50% of the GDP.

20.7 Key findings of the WB survey:

The World Bank released the findings of a "Private Sector Rapid Survey" on April 07, 2022, assessing the impacts of the August 2021 political crisis on private firms and jobs in Afghanistan. The survey, conducted in October-November 2021, finds that the economic activities were substantially affected, and the private sector was hit hard.

The majority of surveyed businesses reported a drastic decline in consumer demand for their products and services, forcing them to scale back operations, reduce investments, and lay off employees:

- One in three surveyed businesses reported having temporarily ceased operations since August 2021, while those that remained operational expressed the need to adjust their operations to cope with declining demand.
- Small businesses have been hit harder – 38 per cent of surveyed small firms had temporarily shut down, compared to 25 per cent of medium firms and 35 per cent of large firms.
- Women-owned businesses are more vulnerable to the negative impacts of the political crisis – of the surveyed women-owned firms, 42 per cent had temporarily closed compared to 26 per cent of firms owned by men.
- 82 per cent of firms that participated in the survey reported a decline in demand – this finding aligns with the reduced household incomes and declining purchasing power reported in the recently-published Afghanistan Welfare Monitoring Survey.
- The agribusiness and wholesale and retail trade sectors appear to be more resilient to shocks – more than 80 per cent of survey respondents in these sectors have remained either fully or partially open.

Job losses:

- Surveyed businesses of all sizes and sectors have cut jobs, laying off more than half of their employees, on average.
- Women employees in surveyed businesses faced more severe job losses than men; overall, three-quarters of women have been laid off from surveyed firms since August 2021.

Access to inputs:

- Domestic inputs have become more expensive, scarce, and difficult to obtain due to supplier closures, supply chain disruptions, and price inflation.
- Access to imported inputs has become difficult due to border closures, challenges in obtaining foreign currency, and increased cost of inputs.

Business payments and transfers:

- Limited functionality of banks has increased reliance on cash transactions and informal money transfers.
- Domestic transactions are adversely affected by constrained liquidity in the banking sector and by a lack of access to bank accounts and/or payment services.

Security and Unofficial payments:

- About three-fifths of surveyed men-owned firms reported that security had improved following the cessation of active fighting in the cities. In contrast, two-thirds of women-owned firms felt that security had deteriorated.
- Surveyed businesses reported a reduction in unofficial payments for government services compared to pre-August 2021. Most survey respondents indicated that unofficial payments were not requested when filing taxes, customs clearances, or business inspections.

Uncertainty about the future:

- Most firms are adopting a 'wait and see approach to decide on their future operations and investments.
- Some firms expect to be forced to shrink further and may even have to exit the market.

20.8 Conclusion

The role of Private enterprise in this regard could be the key to revival, given the moribund status of the State Sector. Even during the past year, during which the entrepreneurs faced numerous impediments, many built sufficient resilience into their business models to do well despite the unprecedented challenges. It is also noteworthy that the vulnerable segment of MSMEs also has been able to weather this phase with manageable losses till now.

It is universally recognised that the MSMEs provide the highest capital: employment ratio after agriculture. These MSMEs could be the much-needed thrust area for stabilising the social sector while investments in more capital industries and mining are arranged. In a territory long associated with narco-terrorism due to the abject poverty of the inhabitants and lack of meaningful opportunities, the development of gainful employment is essential to prevent a drift towards extremist outfits. With over 40% of the population drawing sustenance from the Agriculture/Horticulture sector, any economic plan for Afghanistan must address this sector. The Afghan American Chamber of Commerce has recommended to the International and associated Donor Groups to target the Strategic Value Chains of Afghan Wheat, Potato, Poultry, Vegetables and Fruits for Agriculture and Agri-Businesses as a 'quick-win' under the circumstances.

The need for physical and support infrastructure continues to be intense. Re-stocking the skills pool at the execution and management/control levels is essential for any revival plan. Simultaneously, the need to raise resources to meet ongoing challenges and prepare for national revival cannot be understated. This landlocked Nation's logistical challenges are also significant, though the lure of the rich minerals wealth may see some investors building at least commercial access modes. The security situation is said to have improved over the last year. However, the disaffected elements may take little time to regroup under a welcoming banner and restart civil strife. The fact that there are multiple factions within the Taliban, some of whom may strike out on their own under certain circumstances, also lends uncertainty to the arrangement's longevity.

According to Richard Weitz, senior fellow and director of the Center for Political-Military Analysis at Hudson Institute, Taliban leaders seem to anticipate that, as with their long-fought military victory, they

need to stand firm and eventually, the international community will recognise their government. However, there has yet to be an international consensus on what criteria the Taliban would need to meet to proceed even on a path toward recognition (Weitz, 2022). Most foreign governments will remain aloof as long as the Taliban's internal policies remain essentially repressive, its ties with foreign terrorist groups like al-Qaeda remain indeterminate, and positive incentives for comprehensive international engagement remain elusive.

While Afghanistan's challenges are daunting in the extreme, some way forward could be charted if – and that is a crucial factor – the ITA and the International Community can work out a possible modus vivendi. Although humanitarian assistance and grants can help to mitigate the severe impact of the ongoing crisis quickly, they can never be sufficient to bring sustained relief to the large size of the affected population. Additionally, it cannot be the fundamental basis of national revival. The solution, however unique, will have to be identified and evolved by the Afghan people themselves.

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Section 21

RARE EARTHS: OVERVIEW & AN INDIAN PERSPECTIVE

Lt Gen C.A. Krishnan

Rare earth elements (REE) are a set of 17 metals comprising 15 elements of the Lanthanide group and two others. (UNCTAD, 2014). Of the Lanthanide group, Lanthanum to Europium (atomic Nos 57 to 63) is categorised as Lighter Rare earth elements (LREE). In contrast, Gadolinium to Lutetium (atomic Nos 64 to 71) is categorised as Heavy Rare Earths Elements (HREE). Scandium (21) and Yttrium (39), the two Rare Earths elements outside the Lanthanum group, are generally grouped under Heavy Rare earth elements (HREE) (Massachusetts Institute of Technology, 2016). LREE are more abundant on Earth's crust than HREE. Although referred to as 'rare earths', except Promethium which is unstable, the other metals of the Rare Earths family are relatively abundant in the Earth's crust. Even Thulium, the least abundant Rare Earth element, is over 100 times more abundant than gold. Rare Earths generally do not occur in pure form and are mixed with other deposits, including radioactive elements, scattered and sprinkled across the planet in very low concentrations. What makes these elements' Rare' is the difficulty in finding them in adequate concentration to be mined and separated economically.

Extraction of rare earths involves complex and toxic producing separation processes. . In 2010, Reuters carried a report on Baotou Steel Rare-Earth Group, China's leading rare earths producer, dumping its waste containing radio active tailings in a 10 Square km dam with no plans for its further safe disposal (Buckley, 2010). Similarly, a 2011 report highlighted detection of excessive levels of toxic rare earths in a batch of 'Iron Buddha Tea'. Iron Buddha is a product under Lipton Tea label, produced and sold in China by Unilever. Unilever attributed the source of rare earth content in Iron Buddha tea to the soil where the tea was grown!! (Anderlini, 2011).

Making estimates of global rare earth deposits is a difficult exercise. The estimate varies from agency to agency. UNCTAD's publication, 'Commodities at a Glance: Special Issue on Rare Earths', highlighted this fact. As per the publication, "The large gap existing between various estimates of world Rare Earth reserves given by various sources of information shows not only the difficulty existing in estimating miner-al reserves worldwide but also the degree of political and economic sensitivity of the RE topic in the international scene" (UNCTAD, 2014)[6]. As per Statista, a leading market and consumer data provider, the total Rare Earth deposits in the world are assessed at about 120 million Metric Tons. Of this, China accounts for about 35%. Vietnam, Brazil and Russia account for about 16% each; India 6%, Australia

about 3.5%; the US and Greenland about 1.5% each, with the rest of the world accounting for about 4 to 5% (Statista, 2022). The biggest Rare Earth deposits are found in China. Some recent reports of RE Clay being found at 6000m depth in Japanese EEZ, but currently, exploitation from this depth is not viable. Global Rare Earths production in 2021 was 280,000 metric tons. China accounted for about 60% of this, the US 15%, Myanmar 9%, Australia 8%, Thailand 2.8%, India and Russia about 1% each and the rest about 3% (Statista, 2022).

The single largest Rare Earths application is for making powerful, lightweight, miniature Permanent Magnets with universal application across consumer and defence industries and strategic applications. A study published in 'Natural Resources the Research states, "Though REE may only be used in very small volumes, they can provide performance or longevity benefits that some products rely upon, often making them difficult to substitute" (Goodenough, Wall, & Merriman 2017). Today, there is no substitute for Rare Earths in modern hi-tech industrial applications ranging from fighter jets to ballistic missiles, electric display units, lasers, radars, sonars, communications systems, GPS, satellites, Oil refineries, Auto-mobile industry, mobile phones, computer hard drives, fibre optics, ceramics, catalysts, surgical equipment, jewellery etc. Rare Earths produce powerful effects with small doses and are referred to as 'vitamins of chemistry. They also find applications in control rods and neutron absorbers of nuclear reactors and are critical to green technology applications like Electric vehicles, wind turbines and LED lighting. Rare Earth's extensive and irreplaceable use in industries worth trillions of dollars combined with the supply chain monopoly has rendered Rare Earths an extremely critical strategic mineral today. Until the 1980s, the Mountain Pass mine in California was the primary source of Rare Earths worldwide. It produced 19,900 Tons of REE in 1974, which at that stage was close to 80% of global production. The share of Mountain Pass dropped to about 64% in 1984. By 1992, it dipped to about 1/3rd the global production and further nose-dived to a mere 5% by 2002. Mountain Pass mine's journey is very instructive regarding how China ascended the Rare Earths ladder. US Congressional Research Service Report dated 30 April 2012, titled "China's Rare Earth Industry and Export Regime: Economics and Trade Implications for the United States", traces the story. The Mountain Pass mine operating at its full capacity in the 1990s, produced 850 gallons of waste every minute, containing traces of radioactive Thorium and Uranium. Occasional pipe bursts spilling this hazardous waste into the desert became a serious concern (Morrison & Tang, 2012). . 'Molycorp', the company operating the Mountain Pass mine, was ordered by the State of California to clean up the waste, adding to Molycorp's RE production cost. By 2002, mining in Mountain Pass became economically unviable, and Molycorp was forced to close down the mine. Jeffery A. Green, in his testimony before the 'US-China Economic and Security Review Commission Hearing' on "China's Global Quest for Resources and Implications for the United States" in January 2012, stated that during the 1990s, China increased their rare earths production drastically and "they flooded the market by more than tripling the previous world supply of the materials. During this time, Chinese rare earth-producing firms were largely unprofitable but were allowed to survive through direct and indirect support from the Chinese government. This backing enabled China's rare earth industry to continue to mine and export these materials at prices far below the actual costs of production. China provided other advantages, too, such as low labour costs, questionable environmental standards and huge tax benefits; within 20 years, China went from producing roughly one-third to nearly all of the world's supply of Rare Earths. Mines in the United States and elsewhere, unable to remain profitable against cheap Chinese exports, went out of business" (Green, 2012).

The incredible growth of China from a modest player to the towering Global Rare Earths giant in a matter of just two and a half decades was achieved through a carefully thought-out plan. Deng Xiao-ping, in 1992 said, "There is oil in the Middle East, rare earths in China", and "we need to properly manage our Rare Earth resources and make the most of our country's development". The National Institute of Advanced Studies, Bangalore, in its 2013 publication "Dominating the world: China and the Rare Earth Industry", recounts the Chinese efforts to gobble up the entire spectrum of the global Rare Earths supply chain. In 2005, a Chinese consortium made an unsuccessful attempt to acquire the US oil giant UNOCAL in the garb of enlarging its oil interests. However, behind the oil façade was the fact that UNOCOL owned the Mountain pass mine (Mancheri, Sundaresan, & Chandrashekar, 2013).. It was evident that the Chinese deal was not about oil but about achieving a monopoly in the Rare Earths industry. In 2007, China abruptly cut Rare Earth supplies to WR Grace, the giant US producer of catalysts for the petroleum refining industry. This supply cut was immediately followed by a new Chinese rationing policy for Rare Earths, which outrightly favoured Chinese domestic producers.

The message was loud and clear. If you want access to RE material, shift your shop to China and get preferential treatment. WR Grace did precisely that to avoid being wiped out and moved base to China. China had also attempted to buy stakes in the Australian Lynas & Arafura Resources. As part of efforts to acquire the niche 'Rare Earth permanent magnet' technology, in 1995, China also attempted to acquire Magnequench, a General Motors subsidiary making permanent magnets in the US. The 'acquisition offer' was very well conceived and executed. The acquisition was allowed by the US with certain conditions. What stands out in this acquisition process is that, soon after the curbs stipulated in the contract expired in 2002, all assets of Magnequench were moved to China by its new owners. As a result, by 2012, China attained an unassailable position as the Global Rare Earths leader (Kalantzakos, 2018, p. Ch 5). US Congressional Research Service Paper of 23 December 2013 elaborated on the adverse impact of Chinese Rare Earths domination on US national security. The paper revealed a broad spectrum of US defence equipment such as the Predator unmanned aircraft, Tomahawk cruise missiles, smart bombs, electronic warfare systems, fighter aircraft, submarines and others which required Rare Earths material sourced from China (Grasso, 2013); a single F-35 fighter aircraft required about 400 kg of Rare Earth products (Uren, 2019). For countries that depend on China for upstream REE inputs, China's relentless acquisition of advanced technologies in Rare Earths related goods also poses a major worry regarding their capacity to compete with China for manufacturing such goods. The Chinese RE monopoly is evident from the fact that the combined market capitalisation of the top ten US & Western RE Companies is a mere one-fifth the size of just one Chinese firm, Inner Mongolia's Baotou Steel Rare Earth High Tech Company Limited.

China used its Rare Earths monopoly for political arm-twisting when it reacted swiftly and ruthlessly to cut off RE supplies to Japan following the 'fishing trawler' collision and arrest of the Captain of the Chinese trawler near the Senkaku island in September 2010. Chinese Premier Wen Jiabao quickly responded to widespread criticism of China over the incident by saying, "China is not using rare earth as a bargaining chip. We aim for the world's sustainable development" (NATO Stratcome Coe, 2010). Paul Krugman described the Chinese reaction to Senkaku as "portraying a rogue economic superpower, unwilling to play by the rules" (Krugman, 2010). In his book "super Economics", Raghav Bahl describes the arm twisting and price manipulation that China indulged in to throw the Americans out of the Rare Earths race (Bahl, 2015, p. 59). The perils of dependency on China have been demonstrated to the world.

At the upstream end of the RE supply chain is mining which includes an extraction process to upgrade the value of ores by removing other low-value minerals. At the downstream, the end comes manufacturing of Rare earths permanent magnets and other Rare Earth products such as catalysts for cars and refineries, applications in monitors, computers and televisions, mobile phones, medical and lighting devices, lasers, fibre optics, superconductors, glass polishing and others. At the midstream level, individual Rare Earth elements are separated from one another to form Rare Earths oxides, followed by the production of metals and alloys.

In 2020, the United States accepted that it lacked the domestic capability to separate REE concentrates into REOs and process them into rare earth metals commercially (Office of Energy Efficiency and Renewable Energy, 2020). The US was dependent on China for this. The dangerous consequences of China's RE monopoly and its ability to disrupt the supply of critical components to a whole range of modern industries are alarming. The global auto industry's continuing struggle to cope with the semiconductor shortage and the constraints that APIs (Active Pharmaceutical Ingredients) impose on the Pharma industry is indicative of the possible consequences of a global Rare Earths supply chain disruption across industries.

One of the numerous segments with a critical dependency on Rare Earths is Renewable energy or green energy. India has an ambitious target of 450 GW of Renewable energy by 2030, up from 86 GW today. Globally, there is a big thrust towards offshore wind farms, including creating artificial islands for this purpose. A single efficient, modern 3 Mw wind turbine requires about 2 tons of Rare Earth Permanent magnets. The electric vehicle (EV) segment is another segment heavily dependent upon Rare Earths. While many components of electric vehicles use rare earths, the most critical are the main drive motor and the numerous subsidiary motors in each electric vehicle. Indian vision for transition to EVs gives us a glimpse of the Rare Earths criticality for India's vision. We have about 200 million 2&3 wheelers, about 40 million 4-wheelers and 1.5 million buses on Indian roads today. By 2030 this number is expected to more than double. India's targets for conversion to electric vehicles by 2030 are very ambitious; 80% 2&3 wheelers, 70% commercial cars, 30% private cars and 40% buses (Economic Times, 2021).

Solar is the only major green energy source not dependent on rare earths. However, even in this segment, China has established a giant monopoly (Statista, 2022). In 2020, China accounted for almost 70% of the global solar PV module production, followed by Vietnam at about 8%, South Korea at 5%, Malaysia at 4% and the US at about 3%. India produces about 0.5%. China's hold on Rare Earths, combined with its numero uno position in Solar energy equipment, underlines the giant Chinese monopoly on green energy.

Considering the lead time required for developing new sources and alternative supply chains, continuing global dependency on China for Rare Earths in the short and medium term seems inevitable. Although turning off the Rare Earths tap will also harm China, China's past track record should be considered an adequate warning by the rest of the world. The global community needs to adopt a collaborative approach. Countries with upstream RE ore resources, those with technology for refining the Rare earth ores and those with the know-how for manufacturing Rare Earth magnets and other Hi-tech downstream Rare Earths products must come together and evolve an alternative Rare Earths supply chain. Successful collaborative models of 'The International Space Station, the 'Large Hadron Collider and the 'James Webb Space Telescope project should provide the incentive and give us plenty

of hope. Renewed efforts to explore new sources of Rare earths and search for alternative material as a substitute for Rare Earths must form part of this effort. Research must also focus on mining and refining processes which cause the barest minimum environmental damage, more efficient use of Rare earths and efficient recycling methods. There is a need to enter into Long term contracts and commitments for the exploration and development of mines and the manufacturing of downstream products.

In the Indian context, the opportunity for India to become a preferred global manufacturing hub and the country's projected economic growth in the next two to three decades are well-known facts. However, the steep rise India would witness in domestic energy demand and the inescapable necessity to make a significant transition to clean energy are less discussed. Easy access to green technology and assured availability of green energy-related technology and material is critical. India's production of Rare Earths in 2021 was a meagre 2900 tons (Statista, 2022a). A modest rise in domestic manufacturing of EVs and wind turbines alone would witness demand for Neodymium climbing to 6000 tons by 2025 and to about 20,000 tons by 2030 (Nayyar, 2022). With the country on track to take giant strides in consumer electronic industries, defence and space industries and green technology, the domestic requirement for Rare Earths in India in the next decade is set for a huge jump.

A 2016 study, supported by the Department of Science and Technology, Government of India, identified 12 minerals as 'critical' for India, considering both economic importance and the associated supply risks. Rare earths rank high amongst these 12 critical minerals. Significantly, India has no declared domestic reserves for most of the 12 critical minerals and is 100 per cent import dependent for seven of them (Gupta, Biswas, & Ganesan, 2016). Similarly, the European Commission's Action Plan on Critical Raw Materials, dated 3 September 2021, highlights the duel criticality posed by the heavy dependency of the entire spectrum of Clean and digital technologies on Rare Earths and its highest supply risks for the EU (European Commission, 2020).PWC estimates India's GDP (PPP) to be well over $ 40 trillion by 2050 (Price Waterhouse Coopers, 2017). The GDP projections for India, China, US and UK for 2030, 2040 and 2050 are as shown in the chart below.

Table 21.1: PWC's GDP Trajectory Estimates(PPP - $ Tn)

Country	2030	2040	2050
India	19.5	30	44
China	38	47.4	58.5
US	23.5	28.3	34.1
UK	3.6	4.4	5.4

It emerges from the PWC estimate that India's GDP is set to double by 2030, jump three times by 2040 and by five times by 2050. To understand India's Rare Earths criticality, a clear understanding of India's current energy consumption levels and implications of India's projected GDP jump on its energy needs and carbon emission are necessary.

Table 21.2: Current Levels: Energy Consumption & Carbon Emission Select Countries - (2021/2022)

country	Per Capita GDP $(PPP)	Total Energy Consumption (exajoules)	Total Carbon emission (Gigatons)	Per Capita Elec Consumption (Kwh)	Per capita energy consumption (Kwh)	Per capita carbon emission (tons)
China	17192	141	9.04 bn	3991	27452	6.59
US	63416	94.65	5.0 bn	11730	79897	15.53
India	6461	34.06	2.07 bn	857	6924	1.58
Malaysia	27032	4.26	729 mn	4193	37054	7.67
S Africa	12032	5.4	427 mn	3668	25620	7.77
Brazil	14916	12.4	450mn	2405	16325	2.17

For countries like India and China, with their vast population, low per capita consumption base, and high growth aspirations, the transition to green energy is a sine qua non for sustainable growth and a far bigger necessity than it is for other countries. A three-times jump from the current GDP levels by 2040 would be accompanied by a corresponding increase in per capita and total energy consumption and per capita and total carbon emissions of the country. While the steep rise in energy demand will have to be met, a corresponding increase in carbon emissions would be prohibitive and suicidal. India cannot afford any significant increase in its carbon emissions. That leaves India no choice; the bulk of the country's energy generation expansion must come through the clean energy route. Considering how critical rare earths are for green energy and Technology, India has no choice but to develop a secure domestic Ra-re Earths supply chain. To become a global manufacturing hub for modern industries that India aspires to become, apart from Rare Earths, the country would also need secure supply chains for other critical minerals.

The next question to be addressed in the RE context is whether India possesses the raw material resources and the wherewithal to develop a domestic Rare Earths supply chain. India has significant Rare Earths deposits in its vast beach sand deposits and carbonate complexes along its coast (Singh, 2020). Saurav Zangeneh, in his article "State of India's Rare Earth Industry" dated 28 November 2018, in 'The International Strategic and Security Studies Program, says that despite holding about 6% of the world's Rare Earths reserves, India remains a low-cost 'material provider'. He argues that the country needs to strategically exploit its Rare Earths resources and valorise them by creating an eco-system to manufacture downstream Rare Earths products instead of remaining an upstream, low-value Rare Earth oxides seller. India must also explore the 'Technology in exchange for Resources' China effectively implemented. China had successfully nudged foreign companies with Rare Earths technology to set up production facilities in China and gradually got them to transfer the technology to their Chinese partners in exchange for cheaper raw materials (Zangeneh, 2017).

The monazite route provides an attractive cost advantage for Rare Earths extraction as it facilitates integrated exploitation of heavy minerals like Ilmenite, Zircon, Garnet, Rutile, and others, which are also contained in monazite. These heavy minerals are in great demand to manufacture significant construction and industrial products. The tailing which remains after the extraction of Rare Earths and heavy minerals from monazite would contain Thorium. The apprehension in dealing with Thorium, dual jurisdiction of union and state governments in mining, a cumbersome and inefficient judiciary and lack of political will are the impediments to exploiting India's Rare Earths resources. Mining of Beach Sand Minerals by

private industries has been banned. As a result, India's monazite deposits remain largely unexploited. An inappropriate mining policy has also prevented India from monetising its mineral wealth. This is borne out by the fact that while minerals contribute only an abysmally low 1.69% to India's GDP, it contributes over 8% to the GDP of South Africa and Australia, two countries which bear close geological similarity with India (Indian Mining: A Synopsis, 2020).

The world has taken note of the critical need to develop alternative supply chains to reduce dependency on China for Rare Earths. UK's first rare earths refinery is coming up along river Tees with concentrates coming from Tanzania. A government-funded integrated Rare earths Permanent magnet (REPM) project is also in the offing. EU has launched a project for manufacturing Rare Earths elements and REPM. EU and US are jointly establishing a monazite-based Rare Earths supply chain. The US is setting up a processing facility with Lynas, Australia and is also reactivating its Mountain Pass mine. Pentagon has funded a REPM project while the US government is instituting legislative provisions prohibiting using Chinese Rare Earths products in US defence equipment (Scheyder, 2022). Canada, on its part, is exploring monazite processing and REPM manufacturing in Saskatchewan. Australia and Japan have also increased their focus on rare earths related projects. A coalition called The Mineral Security Partnership, described by some as 'A metallic NATO', is reportedly taking shape. This 'friend-shoring' coalition to secure supply chains of critical minerals, including Rare Earths, currently comprises the US, Australia, Canada, the UK, France, Germany, Japan and South Korea (Home, 2022).

While there is a flurry of Rare Earths related activities taking place across Europe, the US, Australia and Japan, very little seems to be happening in India despite its significant monazite deposits. India's monazite deposits are amongst the largest in the world. However, its share of global rare earths production is less than 1%. India also has no downstream Rare Earths industry worth the name and remains a low-volume, low-value, upstream raw material supplier. Domestic private players and foreign partners with requisite technology and finances are eager to invest in monazite route Rare Earths extraction and manufacturing of REPMs. in India. The resurgent QUAD and the evolving Mineral Security Partnership coalition offer fleeting opportunities to forge robust Rare Earths supply chains for India. All that is needed to exploit India's Rare Earths resources through the monazite route is to act swiftly and formulate a well-thought Rare earths policy with appropriate checks and balances.

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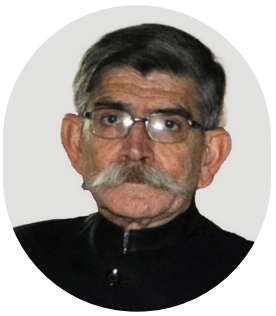
CONTRIBUTOR PROFILES



Group Captain (Dr) AV Chandrasekaran (Retd)

He was commissioned in the Indian Air Force in June 1985 and has held various appointments in a career spanning 34 years. The officer is vastly experienced and was deployed on various duties of security, counter intelligence and infra structure building. The officer was posted as Chief Administrative officer of frontline fighter bases, Commanding officer of a counter Intelligence unit In the Jammu & Kashmir sector, was the Staff Officer Provost Training Command Air Force Bangalore, thereby responsible for the physical security of all the Air Force bases in the four southern states. He was also posted in the Andaman & Nicobar to oversee infrastructure building to enhance the Indian Air Force's operational capability in the region. He was also posted as instructor in some of the prestigious training institutions of the Indian Air Force. The officer has been commended by both the Chief of Air Staff and the Air officer commanding in Chief, Central Command for operational duties. The officer retired from the Indian Air Force on 31 July 2018.

Group Captain Chandrasekaran has a MA in Defence Studies from the University of Madras and won the coveted Ministry of Defence Gold Medal for being first in overall order of merit, an M Phil in Defence & Strategic Studies from the University of Madras and a PhD in Strategic studies from the University of Madras. He is also guest faculty in the Department of Defence & Strategic Studies, University of Madras. As part of his career Group Captain Chandrasekaran was a Senior Fellow at the Centre for Air Power Studies. He has authored a book titled ***Insurgency and Counter Insurgency: A Dangerous War of Nerves***.



Màjor General Ajay Kumar Chaturvedi, AVSM, VSM (Retd)

He is a veteran of Indian Army. An engineer by training, after a distinguished service for over 28 years in uniform to the nation, he retired in 2012. During his service, among the appointments he tenanted the important ones were command of an Engineer Regiment, command of a training Centre, deputy director general of financial planning, Assistant Chief of Integrated Defence Staff in Defence Intelligence agency Chief of Staff of a Tri Service Command, Chief Engineer of a Command and Additional Director General (Personnel) at the Integrated HQ of MoD (Army). He also has been on the teaching/ directing staff of the College of Military Engineering (Mechanical Engineering) and the College of Defence Management (Strategic Management).

A prolific author, post his retirement from Army, he has been writing and lecturing extensively on national security, disaster management and value based leadership. His more important written works include, “Water a Source of Future Conflicts”, “Nuclear Energy in India’s Energy Security Matrix- An Appraisal” and “Role of Pakistan in India’s Energy Security”. He is also very active on lecture circuit. He is a regular speaker on strategic issues with a number of universities like Lucknow university, DDU university Gorakhpur, Chitkara University, Baddi, Shoolani University Nahan and Baba Sahib Bheem Rao university For Social Sciences Mhow. He is also member of Research Group of the AISECT University Bhopal. Currently he his vice chairman of a Lucknow based think tank, “STRIVE”. He is also the convenor of a think tank namely “VIMARSH” of Vivaknanda Kendra and the Executive Director for UP and Uttarakhand for another think namely, “Eco Development Foundation”.



Colonel (Dr) Vijaykant Chenji (Retd)

He is an alum of National Defence Academy, Khadakvasla, Pune. During BanglaDesh war of 1971, he saw action on the Western front. He has served in the north-east, in Ladakh, in Sikkim Heights and in Rajasthan desert. He is recipient of Army Chief’s Commendation Card for bravery while fighting insurgency in the Northeast He has masters degree in ancient history and a M Phil degree. He holds a PhD. He is Sanskrit scholar. He has been studying Vedas Upanishads and student of Advaita Vedanta. He is widely travelled and has visited over two dozen countries including US, CJK, and prominent European countries. He has authored two books and published many researched papers.



Colonel Vishal Jaitly

He is a serving Army Officer who was commissioned in Corps of Engineers in Dec 1997. He has done well in all his mandatory Courses and is a graduate of DSSC, Wellington. He was nominated for Higher Command Course and completed the same in 2019. The officer has done his command and staff appointments in different terrains which include Commanding an Engineer Regiment in High Altitude Area and Deserts and Col GS(Plg) of a Command, GSO1 of an Infantry Brigade of Strike Corps and a tenure in Military Secretary’s Branch.



Lieutenant General C.A Krishnan, PVSM, UYSM, AVSM (Retd)

He is a former Deputy Chief of the Army and a former Member of the Armed Forces Tribunal. A post graduate in Defence studies and M Phil in strategic affairs and Defence Management, he is also a post graduate diploma in Human Rights Laws from NLSIU, Bangalore and a post graduate diploma in journalism.

He has four decades of operational experience across high altitude remote areas of Ladhak, Arunachal Pradesh and Siachen Glacier as well as vast experience in combating terrorism in Jammu & Kashmir and North East. He oversaw the Army's macro level Human Resource management as the Director General of Man Power Planning & personnel services. Subsequently, as the Deputy Chief, he was responsible for perspective planning, Capital acquisition programs and financial planning of the Indian army. Widely travelled and has been part of numerous delegations representing the country.

He has been on the Board of Directors of Bharat Electronics Ltd and Bharat Dynamics Ltd, two of India's leading Defence Public sector undertakings and provides consultancy to defence industries. He is a regular speaker on geopolitics and national security and also a prolific writer on a wide variety of subjects. He is a member of the Governing Board of Asia Centre Bangalore.



Colonel Nilesh Kunwar (Retd)

He was commissioned into 3/11 Gorkha Rifles in 1977 and commanded the same unit during OP VIJAY. A third-generation officer to serve in the Indian Army, he is an alumnus of NDA and DSSC Wellington. During his 37 year long tenure in the army, he has served along the Sino-Indian border in Eastern Ladakh, North Sikkim and Arunachal Pradesh as well the Line of Control in J&K.

He has vast experience of counter terrorism operations in J&K, Assam, Nagaland as well as Manipur, and having served with Rashtriya Rifles [in Kupwara district of J&K] and Assam Rifles [in Manipur] has a nuanced and holistic insight into the scourge of terrorism. An avid Pakistan and J&K watcher, he regularly contributes researched articles on terrorism related issues to various newspapers, journals and think tanks.



Major General G. Murali (Retd.)

An alumnus of National Defence Academy, Major General G Murali was commissioned in the Regiment of Artillery in 1977. He gained foundational character of Military leadership in the NDA, which was moulded by his experiences in all the regions in the country, in operational situations and formal training to give him positions of commanding troops, authority and decision-making ability in a carrier span of 38 years. Some important experiences in his career include, induction of the Bofors guns into the Indian Artillery, planning and execution of logistical operations of a Strike Corps in Op PARAKRAM, heading the Information Warfare team in Northern Army Command. Maj Gen Murali has headed the planning, negotiating and finalising of Project Battle Field Surveillance System for artillery. He acquired a Masters and MPhil degrees in Defence and Strategic Studies from the Madras University. Maj Gen Murali retired as Deputy Commandant and Chief Instructor of Officers Training Academy, Chennai. He is currently pursuing his Doctoral Research on Arthasastra.



Vice Admiral M P Muralidharan, AVSM & Bar, IN (Retd)

He retired in Feb 2013 as the 19th Director General of the Indian Coast Guard. A specialist in Navigation and Direction and a Post Graduate in Defence Studies, the Admiral in a career of close to four decades in the Indian Navy, has held several key Operational and Staff appointments including command of three warships. As Flag Officer he commanded Maharashtra and Gujarat Naval Area, was the first Commandant of the Indian Naval Academy and Chief of Personnel of the Navy. Post retirement, the Admiral was appointed as a Member of the Armed Forces Tribunal at its Regional Bench at Kochi, an appointment equivalent to a sitting Judge of a High Court. During his tenure of four years, the Admiral authored nearly 500 judgments.

The Admiral, a keen student of Strategic and Defence related Issues with special focus on Maritime affairs, is a member of various strategic study societies and institutions. He is a regular contributor to professional journals and a speaker and panellist at various Seminars and Conferences.



Mr. Sunil Pant

He retired from the State Bank of India (SBI) after more than 37 years of service in Dec 2013 as Chief General Manager, Financial Control, from SBI's Corporate Centre. Prior to this he was Chief General Manager of Delhi Circle handling around 1500 branches with a business level exceeding USD 20 Bn. He was awarded Best Regional Manager (2001-02) by SBI and nominated to the Board of a Gramin Bank.

Mr. Pant, is currently an Independent Director on the Board of Ghazanfar Bank, Kabul and Suraj Estate Developers Ltd., Mumbai. He is a member of the Banking and Finance Committee of the Afghan American Chamber of Commerce. Apart from this, he is an Independent Director with 3 Companies of the Green Infra Group, India, a subsidiary of SembCorp, Singapore. He is an ex-CEO of the Indian Institute of Insolvency Professionals of ICAI (IIIPI) almost from its inception in 2017 till August, 2020 and was the 1st CEO of Cyber Security Integrators India Ltd. (CSIIPL), a start-up, in 2015. His Qualifications include MSc (Physics), BSc (Hons) Statistics, LLB (India) and CAIIB. He is a Member of the All India Management Association (AIMA) and is registered as an Independent Director with the Ministry of Corporate Affairs, Govt. of India. He is also a Council Member with two Global Consultancy organizations and is enrolled as an Advocate with the Bar Council of Delhi and is licenced to practice Indian Law.



Brigadier (Dr) Laxmi Charan Patnaik (Retd)

He is an eminent soldier- scholar with a PhD in Defence and Strategic Studies and Masters in Psychology, Defence Studies, Business Administration, and International Relations. He has multi dimension professional expertise in military diplomacy, disaster management, electronic warfare and peace keeping operations in the United Nations. A decorated Infantry officer with services in Siachen glacier, experience of fighting Insurgency in North East and J&K and command of a sensitive Infantry Brigade on the Line of Control (Indo-Pak) and an important operational logistic formation on Indo-China borders. He exhibits a unique and optimal mix of a scholar and a soldier. He has served as India's Defence Advisor at the Embassy of India, Teheran (Iran) handling diplomatic challenges in Afghanistan, Iraq and other neighbourhoods during the turbulent periods of Middle East crisis He has also been in prestigious appointments of Instructors at Indian Military Training Team (IMTRAT) Bhutan and Indian Military Academy, Dehradun.

He was President of Services Selection Board and Hon'ble Chairman of Odisha Public Service Commission (Constitutional Post).He was also Chairman of the Standing Committee of State PSCs and Examinations Reforms Committee. Presently, he is in the academic faculty of IIT, Bhubaneswar, Rashtriya Raksha University (RRU) and Indraprastha University New Delhi. He has contributed immensely to many journals and publications.



Lieutenant General (Dr) Ravindra Singh Panwar, AVSM, SM, VSM (Retd)

He was commissioned into the Indian Army Corps of Signals in 1976. He has commanded two logistic formations, an electronic warfare brigade and an armoured division communication regiment. His last assignment was Commandant of the Military College of Telecommunication Engineering, which is a centre of excellence for the Indian Army for information and communication technologies, cyber operations, electronic warfare and artificial intelligence.

He has the distinction of being awarded M Tech and Ph D degrees in computer science as well as the coveted Distinguished Alumnus Award by the Indian Institute of Technology Bombay, the first defence officer to hold such an honour. He has attended a one-semester cryptology course at the Indian Institute of Technology Delhi, holds a master's degree in management from Osmania University, Hyderabad and is a graduate of the prestigious National Defence College, New Delhi.

He is presently a Distinguished Fellow at the USI and is engaged in evolving strategic thought in the areas of information operations, network centric warfare and emerging disruptive technologies. He is also part of an international group of experts working on regulations for AI-enabled military systems.



Air Marshal Vijay Pal Singh Rana, PVSM, VSM (Retd)

He served for 37 years in IAF and retired as **'Air Force Officer in Charge Administration'** (AOA). He served in many important operational as well as administrative appointments. He commanded a Radar unit during **Op Kargil** and contributed immensely during **Op Parakram**. He is post graduate in two Disciplines - Defence & Strategic Studies and Plant Breeding & Genetics. He also has Post Graduate diplomas in two disciplines - Public Administration & Business Administration. He underwent the prestigious "Advance Professional programme in Public Administration" (APPPA) course at Indian Institute of Public Administration (IIPA). An avid reader and academician, he was instructor at prestigious Defence Services staff colleges at Wellington and also at Lusaka Zambia, where he helped many defence officers undertake research in various fields as part of their curriculum. He has specific interest in the field of water security and disaster management, having handled these issues while at the helm of administration in IAF. He is working as a freelance researcher and executive in the field of water management.



Lieutenant General Arun Kumar Sahni PVSM, UYSM, SM, VSM (Retd)

He is a decorated, scholar – soldier, with 40 years of commissioned service in the Indian Army. In his last assignment, tenanting the second highest rank of the army, he was the General Officer Commanding-in-Chief of one of the six operational commands of the Indian Army. He was the General Officer Commanding-in-Chief of one of the six operational commands of the Indian Army.

His experience encompasses command and staff assignments, in India's most inhospitable and conflict affected areas to battle external and internal security challenges. During his four decades of service, he has assumed many roles and duties. In addition to his Command assignments of leading military formations, his important staff appointments include 'Chief Operations Officer' of an Infantry Brigade in Sri Lanka as part of Indian Peace Keeping Force (IPKF), Colonel General Staff responsible for operations of a Counter Insurgency Force in Jammu & Kashmir, 'Principal Staff officer' at Army Headquarters, Delhi, and 'Director General Information Technology'. He has been an Instructor at various Military Institutions within the country to impart basic & specialized training, not only to own officers, but also those from friendly foreign countries.

Lt. Gen. Sahni has represented India as a military delegate, at UN Headquarters at Geneva for the international conference debating banning of land mines. He has trained with the British Army for a year and represented the country as a military diplomat for three years at Embassy of India, Russia. Presently, he is mentoring start-ups/ new initiatives that are in the domain of Information Security and HR Management. An active speaker at seminars and various think tanks within the country, with specific reference to National Security Issues – External and Internal, International and Regional dynamics impacting India, Issues related to Cyber, Force Multipliers and surveillance, Nuances of Counter Terrorist Operations in the North East and J&K, Dynamics of Integration of North Eastern States, Strategic and Visionary Leadership skills/ nuances and Impact of Tactical Nuclear Weapons on South Asian Deterrence Dynamics. Lt Gen Sahni is a Distinguished Fellow at CLAWS.



Lieutenant General P R Shankar PVSM, AVSM, VSM (Retd)

He is a retired Director General of Artillery. He is an alumnus of National Defence Academy Khadakvasala, Defence Services Staff College, Wellington, Army War College, Mhow, Naval Post Graduate School, Monterrey and National Defence College, New Delhi. He has held important command, staff and instructional appointments and has vast operational experience having served in all kinds of terrain and operational situations including counter insurgencies which have confronted the Indian Army in the past four decades. He is a highly decorated officer.

He gave great impetus to the indigenisation and modernization of Artillery. He was instrumental in induction of most guns, rocket and missile systems in Indian Artillery. He has deep knowledge and experience in successful defence planning and acquisition. He was associated with the Integrated Guided Missile Development Program and worked under late Dr. APJ Abdul Kalam, in DRDL Hyderabad in the 80s.

The General Officer is now a Professor in the Aerospace Department of Indian Institute of Technology, Madras. He is an independent member of the L&T Defence i/c Board. He is actively involved in applied research. He is associated with the development of Tamil Nadu Defence Corridor. He is a regular speaker at the National Defence College, Army War College and Naval War College and a host of other prestigious institutions and events. He has written over 500 articles on Strategic Affairs, Defence Planning and Defence Technology. His website can be accessed @ www.gunnershoot.com. He is a member of the Chennai Centre of China Studies and has co-founded CASA, a virtual think tank on current and strategic affairs.



Vice Admiral Vijay Shankar PVSM, AVSM (Retd)

He is the former Commander-in-Chief of the Strategic Forces Command of India. He is also former Commander-in-Chief of the Andaman & Nicobar Command and Flag Officer Commanding Western Fleet. His command and operational experience are comprehensive and include Command of INS Viraat, the aircraft carrier, active service during the 1971 war, Operation Pawan (the IPKF operations in Sri Lanka), and Operation Vijay, to vacate the Kargil intrusion. He holds an MSc. in Defense Studies and is a graduate of the Naval War College, Newport, Rhode Island, USA. The Admiral retired on 30 September 2009, after nearly 45 years in uniform. Since retirement, he has lectured widely both in India–at the Staff College, Higher Command College, the United Services Institute and the National Maritime Foundation, amongst other venues–and abroad.

Internationally, his participation in the Global Zero initiative, Track II Ottawa Dialogue, the Bellagio Carnegie Endowment discussions, the Indo-Sino-Pak trilateral dialogue, Chaophraya Dialogue, and the papers he has presented there, seek to provide a new paradigm for nuclear security on the sub-continent. He has delivered lectures and participated in discussions at academic and research institutions in the US., including Massachusetts Institute of Technology's (MIT) Security Studies Program, The University of Tennessee at Knoxville, The Howard Baker Center for Public Policy, Oak Ridge National Laboratory, Lawrence Livermore Open Campus, The Atlantic Council, Council on Foreign Relations, Pratt House New York. SIPRI projects on Nuclear non proliferation, Nuclear transparency and CBMs. And the Carnegie Endowment for Peace. Vice Admiral Shankar is a member of the visiting faculty at the National Institute of Advanced Studies in Bengaluru, India, and has tenanted the Admiral Katari Chair of Excellence at the United Services Institute.



Lieutenant General Dushyant Singh, PVSM, AVSM (Retd)

He was commissioned into the 9 MARATAHA LI in Dec 81. He is an alumni of NDC, DSSC, CDM, and Naval Post Graduate School California, USA. The General Officer has commanded an Infantry Battalion, Brigade, and a Division in Jammu and Kashmir. He has also held the appointments of IG (operations), NSG, Chief of Staff of Eastern Command, GOC Corps, and Commandant Army War College. He has been awarded 'Ati Vishisht Seva Medal' and 'Param Vishisht Seva Medal' for his distinguished services. He is Professor Emeritus Defence Studies at Rashtriya Raksha University. He contributes regularly in various defence journals, newspapers, and written chapters in two books ***Understanding Suicide Terrorism*** and ***Countering Terrorism: Psychological Strategies*** by Sage Publication. Lt Gen Dushyant Singh holds the Admiral RD Katari Chair at USI.



Major General Mandip Singh, SM, VSM (Retd)

He was commissioned into the Regiment of Artillery in 1983. He is a graduate of the Defence Services Staff College, Wellington and done the Higher Command Course at Mhow. He has commanded an Artillery Regiment in Jammu & Kashmir on the Line of Control and an Artillery Brigade in the Western sector. Maj Gen Mandip Singh has been Dean at the Mhow War College. His academic qualifications are BSc, MSc(Def Studies), MPhil and Dip in Mgt. Maj Gen Mandip Singh is a prolific writer & speaker on various security issues particularly concerning China & the PLA. He has been a senior Fellow at IDSA, New Delhi, a visiting Fellow at MERICS, Germany & is presently a Distinguished Fellow at USI, New Delhi.



Group Captain (Dr) R Srinivasan VSM (Retd)

He served in Indian Air Force for 33 years and retired in 2018. He holds an MSW, LLB and PG Diploma in International Humanitarian Law. Gp Capt Srinivasan was awarded PhD by Pondicherry University in Political Sociology. He is currently an Independent Researcher and Editor-in-Chief of Electronic Journal of Social and Strategic studies. He is an internationally published and SCOPUS indexed author with 14 Book Chapters and an equal number of Conference Papers on Governance, Regionalism, Political Economy, and Human Rights. He is also a Senior Fellow in Defense Research and Studies (DRaS) which is a Think Tank on strategic affairs. He regularly writes articles and papers on strategic affairs for DRaS, Chennai Centre for China Studies and Kalinga International Foundation. Gp Capt Srinivasan was conferred Visisht Seva Medal (VSM) for his distinguished services of a high order to the country by Honorable President of India in 2012.



Air Marshal Amit Tiwari PVSM, AVSM, VM (Retd)

He is Ex NDA officer, he was commissioned in fighter stream of Indian Air Force on 04 Jun 82. He superannuated from IAF on 31st May 21. Prior to superannuation, the officer was AOC-in-C Central Air Command at Prayagraj. A highly experienced fighter pilot, the Air Marshal has flown over 3500 hours on various types of fighter aircraft. He is a Qualified Flying Instructor (QFI). The Air Marshal is a graduate of the Defence Services Staff College (Wellington), College of Defence Management (Secunderabad) and National Defence College (New Delhi). He was first India Air Attaché in post-Taliban Afghanistan from 2007-09. HE also served as Commandant Air Force Academy and Air Officer-in-Charge Personnel (AOP) at Air HQ. Prior to his last appointment, he was also AOC-in-C Southern Air Command.

EDITORS



Rishi Athreya

He is Head of Research Strategic Studies at IIRF. Mr. Athreya is an alumnus of Flinders University, Adelaide and University of Leeds, wherein he acquired advanced degrees in International Relations and Development Studies. He holds a Certificate in Consulting from the United Kingdom's Chartered Management Institute. He has worked in academic research within the public sector, as also international organisations, in the fields of consulting and risk analysis. He has served in the Governance Division of the Commonwealth Secretariat, where he worked on Public Sector Reform, and Democracy. He has rendered yeoman service in the areas of development assistance and technical cooperation.

Mr. Athreya is a widely published author and has written on various topics related to governance, security and diplomacy. He has also been the editor of several publications published by international organisations, think-tanks, and legislatures. His co-authors have included, amongst others, civil servants, officers of the defence services, and diplomats. He is co editor of the book **Securing India's Maritime Neighbourhood: Challenges and Opportunities.**



Colonel P Madhavan (Retd)

He an alumnus of Sainik School Bijapur and of 48 NDA Course (the third graduate Course), was commissioned in 4 RAJPUT in Jun 1976. He is a post graduate from DSSC Wellington in 1986-87 and a PGDCA during study leave in 2004-06. He has extensive Counter Insurgency and counter terrorist experience in Eastern Arunachal Pradesh, Assam, Sri Lanka and J& K. He served as the Grade 3 Intelligence Officer for 3 ½ years in Tirap, then an active counter insurgency area. He, as GSO2 (Ops), HQs 1 Sector RR, assisted in the raising of the Rashtriya Rifles in 1990. He has commanded 4 RAJPUT in a High Altitude Area in Sikkim and 23 RR in Thana Mandi/Ramban. He was the Colonel GS of a Strike Corps Division, Head of Training Team at the Officers Training Academy Chennai and the Dy Cdr and CI of the Assam Rifles Training Centre at Dimapur. Post final retirement he served in private sector for a couple of years in administrative posts. He has published a historical fiction, ***Ninu - A Saga of the Valorous Wanchos***, on Northeast India. He writes extensively on military matters. He is a founder member of the think tank, Indus International Research Centre. Recently one episode each of his has been published in the collection of personal experiences in Op Pawan published by Maj Gen Arjun Muthanna in ***The Bravehearts of IPKF: Op Pawan and For the Honour of India: IPKF in Op Pawan***.



Group Captain Raj Shekhar Mehta, SC (Retd)

He is a Post Graduate from BHU and an M. Phil from JNU. He is an avid writer, scholar, and author. He was commissioned in the Indian Air Force in 1983 and served in various parts of the country. He received his Gallantry award from the President of India in 1995. As Director Works (Special Projects, Planning and Coordination) at Air Headquarter he was deeply associated with the planning and conceptualisation of Airforce infrastructure work on the eastern border including revival of DBO runway and other advance landing grounds under China Contingency plan. He also served as Instructor at The College of Air Warfare, Staff Officer, and ADC to the Deputy Chief of Air Staff, Camp Commandant at Air Headquarters and Chief Administrative Officer at Airforce Station Jammu and 26 ED, Bangalore. After his stint in the IAF, he joined the Amity University, Noida where he served for eight years. Currently he is a Visiting Faculty and a research scholar researching BRI at the same university. He is also the Founding Member and General Secy of IIRF.

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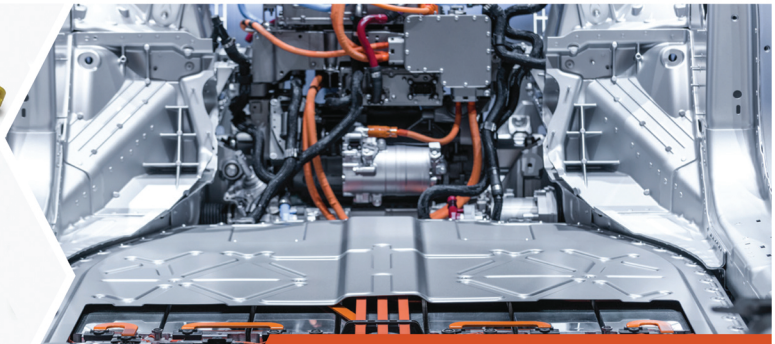
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