



THE ENERGY FORUM



Policy Planning & Research Division
Ministry of External Affairs
Government of India



Confederation of Indian Industry



**REPORT ON:
INTERNATIONAL CONFERENCE**

**Purvodaya Perspectives :
*Reflections on Regional Connectivity***

**2-3 December 2023
Welcomhotel by ITC Hotels, Bhubaneswar, Odisha**

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Inaugural Session and Book Release of *India's Energy Transition: A Roadmap Across the Sector*

The Energy Forum (TEF) in conjunction with the Ministry of External Affairs and CII organised the Conference, “Purvodaya Perspective 2023: Reflections in Regional Connectivity”.



Mr Sidharth Pradhan
Trustee, The Energy Forum

Mr Sidharth Pradhan, the Trustee of the TEF in his Inaugural Address said for more than 1200 years India's east coast, where mainly people of Odisha lived, right from Digha to Machlipatnam, were a sea-faring nation. He further said the Conference seeks to delve into not only the historical aspects of maritime civilisations and linkages, but also to uncover the huge untapped opportunities presented by the Eastern SeaBoard, including Odisha's coastline and port cities in the domains of maritime trade and energy corridor and map out a strategy that would help the Purvodaya States improve their economy through linkages with South and Southeast Asia.

A MoU was signed and a book titled *India's Energy Transition: A Roadmap across the Sectors*, was released by Hon'ble Minister of Education, Mr Dharmendra Pradhan and the Minister of State for Foreign Affairs, Shri V. Muraleedharan.



Mr. Chandrajit Banerjee,
Director General,
Confederation of Indian Industry

Mr Chandrajit Banerjee from CII said that Indian Industries represented by the CII would be a powerful partner to transform the idea of Purvodaya and could play a major role in overseeing the various initiatives, various policies of our government getting implemented to boost the eastern part of the country and its linkage globally to the Eastern neighbourhood.

It would be important to bring down the cost of logistics and supervise the implementation of various projects that would boost the economy of the states in the east. In this context he said the CII had a **chintanShibir** and participants from the industries discussed skill development, establishment of data centres for digital transformation, harness talent and facilitate talent mobility. CII has established ten Centres of Excellence to take the Government's vision forward.

Amb. Saurabh Kumar, Secretary (East), MEA speaking on the occasion, said that there is greater momentum today in taking India's foreign policy out of Delhi to different parts of the country and the ancient land of Kalinga has a special resonance with the theme of the

Conference today as Odisha is celebrating Bali Jatra, that resonates the tradition of reaching out to the faraway lands and a demonstration of this enterprising spirit.



Amb. Saurabh Kumar,
Secretary (East), MEA

He said within the rubric of policy initiatives of the government, such as Act East, Neighbourhood First, Atmanirbhar Bharat, Odisha, and in a larger sense, eastern India and especially the Northeast, have an important role to play.

India's geopolitical orientation gives significance to our relationship to our East and Southeast Asia, ASEAN, BIMSTEC and the larger geopolitical context of the Indo-Pacific, all indicate an eastward leaning. Purvodaya Perspectives, therefore, has a special significance.

Padma Vibhushan Dr. Anil Kakodkar said, as we explore regional development and regional connectivity, energy obviously, is at the centre stage.



Padma Vibhushan Dr. Anil Kakodkar
Former Chairman of the Atomic Energy
Commission of India

We also have a challenge of realising our developmental aspirations, creating quality of life for people comparable to advanced countries, and that in turn, means access to energy at the commensurate level.

We are all focused on renewable energy, clean energy but there are limitations on how much development one can achieve with renewable energy. There is a global realisation that nuclear energy must play an important part in meeting the clean energy needs and developmental aspirations of humanity.

Achieving Net Zero status by 2050 and the carbon border adjustment mechanism would put a lot of barriers to exchange of goods purely on the basis of carbon footprint and the tariff that it could attract.

Nuclear energy has several concerns like safety, waste management and proliferation. While it addresses the global Net Zero requirement, it needs technological advancement of a fairly high order.

H. E. Mohammad Mustafizur Rehman, High Commissioner of Bangladesh in India said, geographically Bangladesh, Bengal and Odisha share the same basin of the Bay of Bengal and historically this sub-region has had interactions through trade and cultural exchanges, leading to cross-pollination of ideas, art and traditions.

This long-standing bond between the peoples of Bangladesh and this belt of India was aptly demonstrated during our war of liberation in 1971 when we shed blood together. Bangladesh is indeed uniquely poised to play a critical role in furthering regional integration for trade and commerce. It offers a broader nexus among the bordering states of India, including the Northeast.

The two countries have taken considerable strides in this regard which has been possible because our political leaderships are committed to work together and take our relationship to a new level for the

benefit of our two peoples. Several initiatives like physical connectivity, grid connectivity, and energy pipelines have been taken by India and Bangladesh to further the connectivity network.



H.E. Mohammad Mustafizur Rehman,
High Commissioner of Bangladesh in
India

Although we have many bilateral connectivity initiatives, more sub-regional and regional connectivity mechanisms could be explored to promote regional trade and development. In this respect Bangladesh could be an important partner for the India-Myanmar-Thailand trilateral highway project in order to give a further boost to connectivity in South Asia and the Southeast Asian region. The implementation of the Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicle Agreement and the early implementation of the BIMSTEC Master Plan for Connectivity and Maritime Transport Cooperation can usher in a brighter future for the BIMSTEC region. Both sides also need to work on removing the existing non-tariff barriers like [unclear] structure at the ICP and LCS, lack of harmonisation of standards, lengthy verification of certificate of origin, and port restrictions.

We can prosper together if we can truly harness the potential of connectivity through improvement in physical infrastructure, enhanced trade in goods and services, cross-border investment, energy cooperation, coastal shipping and river-based connectivity; and not to mention other sources of connectivity like digital connectivity and strengthening social and cultural ties, and above all people-to-people connectivity. Only then will we achieve the goal of Purvodaya.



Hon'ble Union Minister of State
Shri V. Muraleedharan,
Ministry of External Affairs &
Parliamentary Affairs

Hon'ble Union Minister of State Mr V Muraleedharan, Ministry of External Affairs & Parliamentary Affairs, Government of India said, for centuries this period marked the beginning of thousands of ships casting out of Cuttack Port towards Visakhapatnam and Madras and ultimately picking up goods for trade towards Bali in Indonesia.

It is a matter of great civilizational pride to hold this summit in the land that has historically played a central role in advancing and expanding India's cultural and economic ties particularly towards India's East. Hon'ble Prime Minister Shri Narendra Modi ji has declared that the growth of India is incomplete without the development of the eastern and north eastern region.

This conviction is articulated through the vision of Purvodaya or the re-emergence of the East, consisting of a range of policy reforms that fundamentally change the development drivers in the region. The Prime Minister has given unprecedented focus to the development of eastern India through pipelines, inland waterways, shipping, air and road infrastructure. Eastern India holds special focus in our infrastructure development efforts. The eastern and north eastern part of India is the 5th largest bauxite producer, the 7th largest coal producer. The region has a younger demographic profile than the rest of the country. These attributes naturally make the eastern and the Northeast a potential, economic and cultural hub in itself.

Purvodaya even symbolises a *punarjagaran* or an economic, social and cultural rejuvenation of the eastern part of India and represents a revitalization of the historical enterprising spirit of this region. The Purvodaya Mission therefore offers a developmental model designed to bring about balanced growth across these diverse yet interconnected states as well as leveraging their geographical connection with Southeast Asia so that they contribute significantly to the nation's overall progress.

Historically, eastern India's maritime endeavours are a great example of how people-to-people ties, driven by the traders, expanded India's cultural and economic footprint. It was through our enterprising traders that India's maritime prowess bolstered our economic growth and fostered cultural exchanges. Hinduism and Buddhism spread to the Southeast Asian countries like Java, Cambodia and Bali through traders, leaving lasting cultural imprints. This ancient maritime tradition underpins India's contemporary Act East Policy. The Policy draws on historical connections and cultural links established through maritime trade using soft power elements like yoga and Buddhism.

Thus, this region's maritime heritage not only signifies a glorious past but also continues to influence India's present-day foreign policy and cultural dominance. In this context, the minister said connectivity is crucial in forming relationships, impacting the exchange of commerce, culture and thoughts and establishing the power dynamics between countries. The Purvodaya Mission's emphasis on connectivity, through enhanced transport networks and infrastructural development, is pivotal. The Ministry of External Affairs is actively aligning its diplomatic efforts with the objectives of the Purvodaya Mission. The development partnership with friendly countries is a key instrument in India's foreign policy.

We have so far offered concessional loans for over 300 projects worth \$32 billion which approximately translates to INR 2.6 lakh crores, out of which almost 35% have been for connectivity projects. This clearly shows our emphasis on connectivity and the benefit it aims to bring for a win-win situation. The strategic emphasis on eastern India in our foreign policy reflects our commitment to leveraging regional strengths for national prosperity. The launch of India-Middle East-Europe Connectivity Corridor during the G20 Summit was also a step in this direction.



Hon'ble Union Minister, Shri Dharmendra Pradhan,
Ministry of Education and Ministry of Skill Development and Entrepreneurship, Government of India

Chief Guest Hon'ble Minister, Shri Dharmendra Pradhan, Ministry of Education and Skill Development and Entrepreneurship, Government of India, during the inaugural session said that Prime Minister Modi coined the word Purvodaya in 2016. Purvodaya is not a new concept, the sun always rises from the Eastern part of the world. The great Konark temple is here in Odisha. The Konark temple is a scientific point, we believe, the rays of the sun first touch the Konark temple.

Prime Minister Modi strongly believes that thinking leaders, thought leaders are there in different parts of the country with their own regional expertise, regional aspiration and regional authority on the issues. There must be a churning; there must be a discussion on the issues.

This kind of churning will help to create a roadmap for developed India, Vikasit Bharat. The next 25 years are very important.

In the national context, eastern India starts from Banaras, from the ghats of Ganga to Gangasagar, from the Kalingapatnam Port in present-day Andhra Pradesh to the border of Bangladesh, it can go up to the north eastern part of our country. If we expand it a little bit culturally, it can go up to the exact foothill of Nepal, Bhutan, Bangladesh and also Myanmar. Together, this constitutes Purvodaya.

Connectivity is very important for all kinds of development, be it the economy, or society. Just imagine, connectivity is the main integrator among the civilisations. The Chinese traveller HiuenTsang came to India centuries ago, Adi Shankaracharya travelled to all parts of the country, also the eastern part of the country. In his limited span of life Adi Shankaracharya covered all parts of the country on foot. Connectivity is an important point for integrating the country, to create new ideas among the countries.

Centuries ago, in these days the seafarers from this part of the world started their journey, after a few months of trading every year, they used to come back to the mainland, with fortune, prosperity, new ideas; whenever they went out, they took new ideas, prosperity to different parts of the world.

People of this region always fight with Nature; they always find a way to survive. The survival instinct creates new innovators. There is no dearth of natural resources, be it mineral resources, be it forests, be it water resources, be it fertile land, there is no dearth of natural resources. There is no dearth of skilled manpower in this region.

When we talk about Purvodaya, Purvodaya cannot be envisioned without taking care of the economic interests of our neighbours. Neighbours are a reality. They are all prospering. Speaking about the role of Bangladesh, the minister said, Bangladeshis providing a way to India for its connectivity to the Northeast. We are getting internet access, frequency access through Bangladesh, to have high-quality connectivity to the Northeast. Bangladesh also helped in transportation Over Dimensional Cargo for the Palatana project. With collective efforts, with collective wisdom, this part of the world is going to be economically and socially vibrant in the 21st century.

We have the strategic location; we are in Bhubaneswar; the colonial rulers governed from Kolkata because of our strategic location. We are in the same zone. Bhubaneswar, Patna, Ranchi, Raipur, Visakhapatnam, just see the strategic points and see the ports, Visakhapatnam, Gopalpur, Paradip, Dhamra, Haldia, these are the gateways to different parts of the globe, we have to join the dots. Our youngsters are prospering. In India, there are more than 100,000 start-ups now. Indian youth have new aspirations, a new zeal and a special drive to succeed.



Mr. Shiv Siddhant Narayan Kaul,
Chairman, CII Eastern Region
Managing Director, Nicco Engineering
Services Ltd

When the Prime Minister is envisioning Vikasit Bharat Sankalp Samay, we have the advantage of demography. This means we all have a common aspiration; we must also have a common goal. Nepal, Bhutan, Myanmar, Bangladesh and this part of India is 10% of the population of the world. Purvodaya will help in giving a new dynamic through a young and skilled population, and the connectivity network that exists, to push India's growth.

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Mr Shiv Siddhant Narayan Kaul gave the Vote of Thanks.

Plenary Session – I Purvodaya, Connectivity and India’s Foreign Policy



Amb. Saurabh Kumar,
Secretary (East), MEA

The session titled ‘Purvodaya, Connectivity and India’s Foreign Policy’ was chaired by **Amb. Saurabh Kumar**, Secretary East, Ministry of External Affairs, Government of India. In his opening remarks, Amb. Kumar said that South Asia is perhaps the least connected regions of the world. It has its roots in the historical legacy and has been influenced by the thinking which treated the frontier areas as buffers and left them undeveloped. However, connectivity is now one of India’s major foreign policy initiatives. Policy focus has now been Act East, Neighbourhood First, and an emphasis on BIMSTEC, IORA and Indo-Pacific Oceans Initiative. For all these regional bodies, connectivity forms the core. During the G20, India unveiled a new connectivity initiative, the India-Middle East-Europe Economic Corridor.

Amb. Kumar pointed to several examples of successful completion of India-funded connectivity projects in the neighbourhood. India has established modern Integrated Check Posts to help trade and commerce as well as people-to-people contact. To facilitate trade, it has introduced standardisation and has been engaged in capacity building of regional Standard Institutes. MVAs and Coastal shipping are furthering these connectivity networks.

The subcontinent needs to be well connected so that prosperity, growth and development could be shared and connectivity itself would bring about more prosperity and growth and development.



Ms. Mandakini Kaul,
Regional Coordinator
South Asia Regional Integration and
Engagement, World Bank

In her remarks, **Ms Mandakini Kaul**, Regional Coordinator for South Asia Regional Integration and Engagement of the World Bank speaking on “Purvodaya Connectivity and regional integration in South Asia” said that there are immense potential and economic opportunities that lie in South Asia’s eastern sub-region which can be unlocked through better regional connectivity and inclusive trade and transport development.

The high cost of connectivity is a major factor contributing to low levels of regional trade estimated at about 5% of total trade compared to 26% in the ASEAN countries and 62% amongst the European Union. There is an estimate that container shipment within South Asia costs about 50% more than it does within the OECD countries.

India’s Northeast and land-locked countries like Nepal and Bhutan face the most significant impact of this poor connectivity that results in delays, and increased transport costs inevitably lead to higher prices of imported goods. For instance, a truck that is travelling from Agartala to Kolkata would take 65% less time and be around 68% less expensive if transit via Bangladesh were possible. Therefore,

having connectivity within the region and intra-regional connectivity, would allow the countries to tap into global value chains and generate economic growth in the region.

Globally, it is clear that reducing transport and trade costs can have substantial benefits, with evidence showing that even a one-day reduction in travel time can lead to a nearly 10% increase in exports of a country. If there was full transport integration between India and Bangladesh, which means that trucks did not have to stop at the border and could go across at any land port, we estimate that income levels would rise by as much as 16-17% in Bangladesh and by about 8% in India. This transport integration for instance just between India and Bangladesh, would yield about a 300% increase in Bangladesh's exports to India and about a 180% increase in India's exports to Bangladesh.

Even as we look at the various dimensions of connectivity, it is important to keep in mind these very tangible benefits. So, clearly there is willingness, there is opportunity and there is openness to collaborate and to connect maybe at the bilateral level, or at the multilateral level.

The World Bank is focussed on enhancing economic connectivity in its multiple dimensions. In terms of energy, digital, trade facilitation, cross-border investments is a key focus in South Asia.

She highlighted the World Bank's GRID Initiative, which stands for Green, Resilient and Inclusive Development. It promotes economic growth but making sure at the same time, that they go hand in hand with environmental goals and include establishment of green infrastructure and contribute to decarbonisation.

Under the GRID approach, specifically in South Asia, the focus is on supporting regional connectivity and energy projects. Eastern Waterways Grid which can leverage about 3500 km of waterways to connect the BBIN region, providing last mile connectivity to landlocked Nepal and Bhutan. There is an investment of \$ 1.7 billion which is likely to increase to about \$ 2.5 billion.

The World Bank aims to modernise rail freight and logistics in a sustainable way. It is specifically supporting the Ludhiana to Mughalsarai stretch.

First, Supply chain constraints are now recognized as a major impediment to export-led growth, and this means developing an action plan that looks at all the three dimensions of logistics – infrastructure, services and procedures and processes. In this context, customs, border agencies, transport regulators, freight forwarders, transport operators– the whole gamut of logistics. In the recently released World Logistics Performance Index 2023, India has jumped six places to be at no.38 out of 139 countries. Bangladesh ranks 88, Sri Lanka are 73 and Bhutan is at 97. The regional connectivity network needs to tackle these challenges.

Secondly, it is important to shift from transport corridors to economic corridors. This means developing the local economy, livelihoods, local firms, providing them access to markets, developing local infrastructure and logistics, so that the local level can tap into the advances that are taking place at the national and regional level. This means local roads, canals, waterways, railways, MSME businesses, connecting them all along the way.

Thirdly, it is critical to promote multimodal focus towards infrastructure development that covers not only roads, railways, waterways but also focuses on interoperable policies and systems. In this regard India's Gatishakti is a path-breaking project and that can help multimodal connectivity within India and also with India's neighbourhood.

Fourth, the multiplier in all of these is going to be technology. Petropole is an example, which is South Asia's busiest land port with a waiting time of 138 hours for a truck. After the introduction of e-suvidha by West Bengal, this waiting time has been reduced to 15 hours.

She argued that women are rarely seen as part of infrastructure development, .Therefore an inclusive approach, taking gender into consideration while developing infrastructure, is important. Boosting seamless regional connectivity requires developing a unified understanding of a multimodal approach that brings together policies, investments and operational responsibilities.



Mr. Sanjay Kathuria,
Former Lead Economist,
World Bank

Mr Sanjay Kathuria, Former Lead Economist at the World Bank in his presentation titled, “*Economic dimensions of Purvodaya connectivity*” said, Resilience in economic development has become important component of India’s foreign policy. Connectivity is a very critical cog in that wheel of economic development and interpreted in the sense of trade in goods, trade in services, people-to-people connect and trade in ideas, and virtually encapsulates all dimensions of connectivity within this construct. Connectivity is in many ways a part of human freedom as well.

India’s import from South Asia is less than 1% of India’s global imports.

That provides enormous opportunity to step up connectivity within the region which would contribute to least three times high trade within the region.

He quoted from the Prime Minister’s speech in the Shangri La Dialogue in 2018 where he said that, “connectivity is vital, it does more than enhance trade and prosperity, it unites a region. India has been at the crossroads for centuries. We understand the benefits of connectivity, and there are many connectivity initiatives in the region and if these have to succeed, we must not only build infrastructure but also bridges of trust”, to emphasise the critical role that connectivity plays.

China is the unspoken elephant in the room here, India cannot take on China’s strengths. India has its own unique strengths and it should build on those for enhancing connectivity for its own resilient development as well as that of the neighbourhood in the broader Asian space. India’s strengths are its soft power, people-to-people connect, understanding of what it takes for capacity building and development, cultural understanding and so on.

India needs to be more open on trade that would help to create bridges of trust. Tariffs have gone up on more than 4000 tariff lines over the last five years. With an average of 18% or so. This makes India an outlier certainly in the G20 and also in among the Asian economies with whom it wants to compete like Vietnam and China. India is the fifth largest economy in the world, its imports are huge, exceeding \$ 700 billion. India must provide a stake to its neighbours and have a more open economy.

Incremental growth globally comes from Asia than any other part of the world thanks to contributions of China and India. Yet India, after many years of negotiation, did not sign RCEP, the Regional Comprehensive Economic Partnership. It is not even close to the CPTBB which is a much more ambitious undertaking of 11 countries globally which incidentally include 7 RCEP countries in that agreement. It is a 21st century kind of trade agreement.

In the US sponsored the India-Pacific Economic Framework, India did not partake in the trade pillar but took part in the three other pillars. Trade economists would characterise the free trade agreements that India has recently concluded with UAE and Australia as a bit shallow agreement and the potential benefits of free trade agreements would not accrue. Trade is also an issue of foreign policy.

There has been a massive increase in India’s infrastructure development, especially in the North Eastern region and in the neighbourhood. The Motor Vehicles Agreement which was signed in 2015, is yet to be implemented which could have resulted in potential gains. The second element of soft is capacity building. The neighbourhood needs to take greater part in India’s growth and the fastest growing economy in the world of any size.

Working in partnerships is important. India can leverage partnerships in the QUAD framework with Japan and the US, but also with many others too. For example, in Adani port project in Sri Lanka the DFC of the United States for the first time committed \$ 550 million

India's private sector is extremely capable. India can use this private sector far more strategically to establish robust connectivity. For example, Indian firms, are some of the largest investors in the world in the emerging market, \$ 10-15 billion overseas every year. Less than 1% of that goes to South Asian countries.

Knowledge connectivity is a key problem in Indian firms which are not investing in neighbouring countries and vice-versa.

Connectivity in terms of the people-to-people dimension is important. We know that India has the largest overseas diaspora – 32 million and counting – if you include Indian citizens and people of Indian origin. Indians contribute hugely to economies all over the world, including in the neighbourhood, but very prominently in places like Singapore, Malaysia, Indonesia, Australia, New Zealand, and further to the West in the UK, the US and Canada. This helps to forge bridges of understanding and trust. They are the unofficial ambassadors of India and largely, of the region as well.



Vice Admiral Shekhar Sinha,
Chairman Trustee Board of India Foundation
Co-Founder, DeepStrat

Vice Admiral (Retd.) Shekhar Sinha, Co-Founder, DeepStrat, Former FOC-in-C, Western Naval Command & Chief of Integrated defence Staffs peaking on the topic “*Maritime dimensions fostering Purvodaya connectivity*” pointed out that maritime connectivity is the most important form of connectivity central to India’s foreign policy.

No other regional power is as disconnected from its immediate neighbourhood as India. Recognising this disconnect as a challenge to India’s economic and security interests, the Prime Minister made both intra-and inter-regional connectivity a policy priority in 2014 when he assumed the office of Prime Ministership.

India’s terrestrial connectivity has its limit, particularly with our immediate neighbourhood. Ninety-five per cent of our overseas trade by volume and 68% by value, 88% of India’s energy requirement is imported through the seas, not over land. We have an EEZ of 2 million sq.km, and yet the blue economy contributes just about 4% of total trade.

Majority of the sea lanes are crisscrossing the Indian Ocean, and the entire world’s trade transits through these lanes. Mr Modi has coined the acronym SAGAR (Security and Growth for All in the Region), which is closely linked to Government’s Act East policy. For both these to fructify, connectivity has to become the theme of India’s foreign policy. It is essential to create and improve our ports’ handling capacities and inland infrastructure for the goods to be carried to and from the destinations through designated freight corridors.

Maritime connectivity rekindles India’s historical and civilizational connection with South and Southeast Asia. The 27th Viceroy of India, Lord Curzon, identified three tenets relevant to the country as it found itself confronted by an aggressive China even then. The first was that India’s security is dependent upon its ability to exercise influence over a defined geopolitical space beyond its own shores. He identified this space as extending from the Gulf of Aden in the West and extending to the Malacca Straits in the East. On the contrary, the Mughals tended to see India as an extension of the geopolitics of Central Asia because they came through that route. Unfortunately, this sense has remained with Indian polity for a long time

Curzon understood that India's security and greatness were intimately tied to the maritime routes and choke points connecting it to Europe through the Red Sea going into the Mediterranean, and from there into the Atlantic and parts of Europe. If India loses control of these it would become hostage to its strongest landward neighbour, China. While China has become very aggressive on our northern borders, the only way to deal with that country is in the maritime zone.

The Government of India has made it a priority to improve the ports and connected infrastructure. Project Sagar Mala is most important in this regard and work is in progress. The rapidity with which inland waterways transportation has progressed is also noteworthy. Our agreement with Bangladesh has given a fillip to transportation of goods and services in the North eastern states.

The Government has permitted coastal trade, ships of neighbouring maritime nations to transit in Indian coastal waters flying their own country's flag. It is not permitted as per the Cabotage laws. This will further trade.

If you go back to the history of Indian trade with Southeast Asia, the coastal ships carried commerce right up to present-day Indonesia. Now, maritime trade is no longer standalone. It comes with the security architecture of the IOR and it comes with a multimodal architecture, as was mentioned by Secretary East.

India should be visible to its maritime neighbours so that they have the comfort and confidence of handling traditional and non-traditional threats which is a pre-requisite to peace and stability for unimpeded trade. It is necessary for India to be the preferred security partner to the countries in the IOR littoral.

The Indian Navy is continuously upgrading its platforms to remain ahead of the technology curve. India's growth depends on how deeply are the maritime and land neighbours intertwined with India's economy and security architecture.

Historically, India's east coast has played a stellar role in maritime trade with South and Southeast Asia. The Chola Empire in the 3rd century BC and later, dazzled travellers with its wealth and luxury. Virtually the entire Indonesia, which was the Srivijaya Empire from the 7th to the 13th century, boomed because of the taxes collected from the Chola Empire through the Malacca Straits. Even the Angkor civilisation from 800 to 1337, inland in Cambodia, used the Mekong River as the highway that tied itself to the Indian Ocean trade network.

Ports in the East Coast, like Pulicat, Musilipatnam (now Machilipatnam), etc played important role. The trade mainly comprised textiles, silk, gold, precious metals, semi-precious stones, spices and aromatics. All this travelled by sea.

Odisha Bali Jatra, Boita Bandana Festival which marks the day when ancient Sadhabs i.e., the Odia mariners, would set sail to distant lands of Bali and Java and Sumatra, in present-day Indonesia. The time is ripe for the east coast to take advantage and take on the mantle of Purvodaya.

China is trying to overcome the Malacca dilemma by making ports in our eastern neighbourhood and connecting up to Kunming with pipelines. India can pose an even bigger challenge to China than the Malacca dilemma with the Indian Ocean dilemma.



Prof. Chintamani Mahapatra,
Chairman,
Kalinga Institute of Indo-Pacific Studies

Prof. Chintamani Mahapatra, Chairman, Kalinga Institute of Indo-Pacific Studies (KIIPS) speaking on the topic “*Regional powers, Indo-Pacific and connectivity challenges for Purvodaya*” said that the present government has expanded two important aspects of connectivity. One from the ancient Indian text “*Vasudhaiva Kutumbakam,*” which means the whole world is one family, is philosophically the greatest type of connectivity one can think of. Second, India is engaged with more than 25 million Indians diaspora. Ten years ago, not many people would think about the Indo-Pacific in such terms as today. Today, you have an American strategy, a European Union strategy, an Indian strategy, a Japanese strategy, a South Korean strategy, the Germans, the British, the French, all have their own definition of identity as Indo-Pacific countries.

It is because half of mankind lives in the Indo-Pacific and it constitutes two-thirds of the global economy. Sixty per cent of maritime trade of the world takes place in the Indo-Pacific. . Seven out of ten large military powers are located in the Indo-Pacific and six nuclear weapon powers are in the Indo-Pacific.

Connectivity can be disrupted, can be disconnected. The pandemic is the best example recently, a war is ravaging Ukraine has impacted on connectivity. The US’ goal is to maintain American primacy and eminence in the Indo-Pacific. The US would like to have a balance of power in the Indo-Pacific, which would be favourable to American interests. All these American goals are being challenged today.

It is common knowledge that there are so many challenges today, traditional and non-traditional, the most important challenge comes from China because the China of today is not what it was in 2000. Today’s China has a huge military. The way China is flexing its naval muscle in the South China Sea, threatening the Filipinos, the Vietnamese and so many other countries, and the aggression along the Indian border. So, whatever China is doing is not just disruptive or not just a challenge to the United States, but to all the regional countries as well.

At the same time, China is a great economy. All the American allies and strategic partners including India find in China a great trading partner and a source of investment.

The way India is yet again trying to be the voice of the global south, the way India has managed a very judicious, very skilful position on the Ukraine war and on the Israel-Hamas war is remarkable. The Americans know that India is not opposing sanctions against Russia but at the same time, the Russians know that we do not support their war activities at all.

If India was able to bring to an end the estranged relationship with United States which continued during the Cold War for 40 years, India can have an innovative approach even towards China since it is India’s second largest trading partner.

In the Q&A session several points were raised.

China’s proposal to build Kra Canal and the impact it will have India’s strategy in this region. Another question was what are the key sectors targeted under the Purvodaya programme and the potential impact on job creation. Please highlight on this. Thank you. There was a question on

India-UK FTA. Another one was air linkages that would foster people to people contact. Some questions related to leveraging the private sector to build connectivity, how to increase imports from India's neighbours, educational connectivity and increase in enrolment ratio, space connectivity, etc.

Replying to these questions, one panellist said China's access to the Bay of Bengal through Myanmar could be a challenge to China, as tension in this area would lead to possible interdiction. However, the pipeline to Kunming is already functional. So, I would think if not the road, the Chinese are very good in making tunnels, if you see Tibet and if you see the northern part of China, they have got some tunnels that are 20-30km long.

FTAs are actually good for India because they bring in innovation, they bring in technology and they bring in investment; that is one of the fundamental benefits of deep FTAs. On the issue of air connectivity, it was said flights are controlled by Bilateral Air Services Agreements (BASAs) between countries and very few countries in the world have an open skies policy.

On the issue of RCEP it was said that India has already missed the train. There is a need to improve the regional value chain to leverage regional expertise in different sectors. The private sector is important; it can facilitate FDIs. There is a huge transactions cost to enter a market. Governments can smoothen that process. There is a need for capacity building and facilities for laboratory testing need to be located near to the border.

Education is also a service which comes under trade in services but it is delivered usually on-site i.e., in the host country; although now you have distance education and online education. But different countries have specialisations, especially when it comes to the tertiary sector. Sharing your facilities is very expensive, not just in terms of equipment but also by way of skilled manpower. There is tremendous competition for scarce talent; So, learning from within and learning from schools within South Asia, is part of the benefits of connectivity.

Gender sensitisation is an important component and India's Land Port Authority is being sensitised on gender issues. Infrastructure is being built keeping in mind women who may be engaged in trade or travel. Similarly, women are being encouraged to use waterways by adopting several gender-sensitive measures, for example, lighting the area, providing restrooms, is important.

While concluding, the Chair said if there are economic disparities and because of connectivity if growth gets going it is going to benefit all. Any connectivity initiative tends to bring along with its development and growth, so people who are in the lowest strata will be uplifted.

Plenary Session – II

Country Perspectives on Regional Connectivity



Amb. P. Kumaran,
OSD (ER & DPA),
Ministry of External Affairs,
Government of India

The Plenary Session on Country Perspectives on Regional Connectivity was chaired by **Amb. P. Kumaran, Joint Secretary**, Development Partnership Administration Division (DPA), MEA. In his opening remarks, Amb. Kumaran said, connectivity is the cornerstone for regional economic partnerships and enhanced economic integration.

It helps unlock the potential of regional value chains and production networks, thereby creating corridors of prosperity. It is both a driver and an outcome of enhanced links. Despite strong historical maritime and cultural links with the East, the Indian subcontinent has remained less connected, with low levels of integration due to various reasons including political history, economic differences and geostrategic divergences.

India's 'Neighbourhood First' Policy aims to address this situation in multiple ways. Some of the instances of

connectivity he gave are economic and trade connectivity, business-to-business connectivity, supply chain connectivity, tourism, healthcare, education connectivity, energy connectivity, cultural connectivity, linkages between the service industries, links between technological and research ecosystems; we have financial connectivity, linking of payment systems and shared DPI platforms. The ONDC, which is currently being expanded in a big way, has good potential to drive cross-border ecommerce in a way that is platform-neutral and is helpful to MSMEs.

Establishment of export processing zones with preferential trade arrangements, reduction of tariff, Digital and data connectivity established through fiber optic links, undersea data cables, and cross-border movement of data enabled by digital partnership agreements, are the digital equivalent of FTAs for data. In addition, we also look at regional data centres, and regionalisation of start-up ecosystems of trade barriers, simplification of customs procedures would help the best minds to come together to contribute to economic development through innovations.

Historically India has had a vibrant set of ports on the east coast. But, during the colonial period many of them fell into disuse. So, one of our prime vectors of the Act East Policy would be to revive ports on India's east coast. For the Indo-Pacific, we have the approach of Security and Growth for All in the Region (SAGAR) outlined by the Prime Minister in his Shangri La speech in 2018.

So far, India has undertaken lines of credit project; 308 of them totalling about \$ 32 billion, extended to 68 countries in various sectors. Out of these, \$ 10.35 billion have been extended exclusively for connectivity projects to 27 countries. In our own neighbourhood, we have extended lines of credit totalling \$ 14.37 billion out of which almost \$ 8.2 billion is focused specifically for connectivity projects.



Prof. Delwar Hossain,
Member of Bangladesh Public Service Commission,
Professor of International Relations,
University of Dhaka

Prof. Delwar Hossain, Member of the Bangladesh Public Service Commission and Professor, University of Dhaka while presenting his paper titled “Fostering deeper connectivity with Purvodaya states- A view from Bangladesh” said, the rise of the East or the Eastern region is very important not only for India or for South Asia and also for the world.

Connectivity is a critical ingredient of regional prosperity and development architecture. However, we organise it, connectivity comes first and it is very important component. So, regional connectivity depends on how members of the region perceive connectivity and at the same time how bilateral connectivity shapes up.

When we talk about seamless connectivity, multimodal connectivity it needs to include local connectivity, national connectivity, sub-regional, regional and global connectivity and connectivity at the level of Indo-Pacific or Asia-Pacific.

Two types of connectivity are very important, first connectivity of tangible issues like physical infrastructure, digital connectivity, financial connectivity or connectivity of energy and trade. Second, intangible connectivity. This encompasses connectivity among the people, knowledge connectivity, idea connectivity and cultural connectivity. Connectivity definitely helps to change the paradigm that South Asia is the least connected region of the world.

Bangladesh has been a very active participant in idea of connectivity, whether these are at the bilateral, sub-regional or regional level. Bangladesh defied domestic opposition to connectivity with India. There is a paradigm shift in how Bangladesh looks at connectivity including the Asian Highway and the railway network during the regime of Prime Minister Sheikh Hasina who had said, “Connectivity holds the key to our collective and inclusive development in our endeavour to integrate the two economies and the region”.

The Ministry of Road Transport and Bridges in Bangladesh in its first Report titled Regional Road Connectivity – Bangladesh’s Perspective, says, in the process of promoting regional cooperation and integration, Bangladesh has been deeply involved in several initiatives and identified strategic transport routes under the umbrella of UNESCAP, SAARC, SASEC, BIMSTEC and the BCIM Forum. These transport routes will allow Bangladesh to connect with regional and global supply chains as well as provide landlocked countries and territories access to seaports at Chittagong, Mongla and Payra.

Political regimes are important to take connectivity forward. The regime provides political will, leadership to particular ideas which transcend borders, particularly vision. Connectivity is all about vision and how you see the future of the country, future of the region. Bangladesh has that kind of political will and leadership and that is why we are so much connected. Connectivity projects also require time-bound implementation to avoid escalation of costs.

Digital connectivity is very important now. We are talking about a 4th industrial revolution; we are talking about AI and IT and all these things. There is a requirement of linkages between the banks that will help in business transactions and payment. Bangladesh-India connectivity is the driver of regional connectivity in South Asia.

There are four challenges which are very important for connectivity at the regional level. One is political leadership. Second, the primacy of geopolitics of today’s world. Third, resource constraint is a reality in South Asia. So, we have to gather resources, we have to work together for resources and

finally, choices are very important and cannot be ignored. India, China, the US, the EU, Japan –there are choices but how to manage those choices is important.



Ms. Phub Zam,
Former President,
Bhutan Chamber of Commerce and Industry,
President,
Yarkay Group Pvt Ltd

In her presentation, **Ms Phub Zam**, Former President, Bhutan Chamber of Commerce and Industry and President, Yarkay Group Pvt Ltd from Bhutan speaking on “*Linking Purvodaya with Bhutan*” said it is imperative to acknowledge the central role that connectivity assumes in shaping the geopolitical landscape.

In the evolving dynamics of global influence, India’s unwavering commitment to fostering robust connections with its neighbours stands out as a testament to its visionary leadership. At the heart of this commitment lies the acknowledgement of the transformative power of trade and commerce in propelling national growth.

India’s remarkable success story is intricately woven with the threads of regional progress, and intertwined through the tapestry of strengthened connectivity. This connectivity is not merely a logistical endeavour but a strategic vision that unlocks immense potential, fostering partnerships and collaborations with neighbouring nations.



Mr. Anjan Shrestha,
Senior Vice President,
Federation of Nepalese Chambers of Commerce
and Industry (FNCCI)

Mr. Anjan Shrestha, Senior Vice President, FNCCI, Kathmandu, Nepal spoke on “Building deeper linkages between Nepal and Purvodaya states”. He said during the visit of Nepali Prime Minister Pushpa Kamal Dahal (Prachanda) in June 2023 several important bilateral agreements were signed.

Agreements made in the areas of agriculture, air route, connectivity, trade, infrastructure and information technology were the significant achievements. Nepal as a landlocked country places great importance on connectivity with India for its access to the seaports, for its connectivity to the outside world especially through the eastern coast of India.

Bhutan’s relationship with India, spanning trade and economic development exemplifies the dividends of deepened ties.

India’s multifaceted initiative encompasses cutting-edge transport, infrastructure, high quality roads, railways and air connectivity, especially to Bhutan. Noteworthy among these is the ground-breaking 58km railway link between Kokrajhar in Assam, and Gelphu in Bhutan, signalling a new era of seamless connectivity. There is also talk of an 18km road from West Bengal to Samsi. This endeavour scheduled for completion by 2026, symbolises the shared commitment to fostering not only economic ties but also cultural exchange and understanding.

Beyond the traditional realms of connectivity, the launch of the South Asia Satellite in 2017 exemplifies India’s forward-looking approach. This transformative gift to South Asian countries including Bhutan has facilitated a digital revolution connecting even the remotest corners. The

bandwidth connectivity and enhancement by India underscores the commitment to supporting Bhutan's socio-economic development aligning with the ethos of gross national happiness. Connectivity has proven to be an indispensable tool especially during the unprecedented challenges posed by the recent COVID-19 pandemic. The resilience demonstrated through these connectivity projects underpins their strategic importance in times of crisis reinforcing the foundation of the Bhutan-India friendship.

In the grand tapestry of international relations, infrastructure development is the warp and connectivity the weft. India's active involvement in supporting Bhutan's infrastructure development beyond hydropower includes vital road networks and bridges. These projects not only serve as conduits for economic opportunities but also as pathways to our socio-economic development and help the tourism sector.

In the spirit of Sab ka Saath Sab Vikas, collective action, inclusive growth the countries of the region can seize this moment to reinforce the foundations of our partnership, unlocking the immense potential that lies within our collaborative endeavours.

Nepal aspires for connectivity through Purvodaya States especially to connect to the eastern part of Asia, first with BBIN and BIMSTEC nations, then the Asian nations and beyond. This connectivity provides Nepal with an important source and market for trade and ensures a resilient supply chain.

Nepal envisions building deeper linkages with the Purvodaya States through historical ties and cultural bonds. Many a times these relations are represented by *roti* and *betias* well as *roji*, *rozgari* and *roti* relations. It is essential to recognize and leverage this historical connection for deeper collaboration in the modern era.

The Purvodaya Initiative presents a unique opportunity for Nepal to be an active participant in this growth story. India is the largest trade partner of Nepal in both import and export. Nepal is the 11th biggest export destination for India. More than 70% of Nepalese exports are to India. This shows that there is a potential to produce in Nepal and export to India and other developed countries with the advantage of duty differences. Collaborating with the Purvodaya States can create a vibrant economic corridor facilitating the seamless movement of goods and services, enhancing bilateral trade and economic integrations. Nepal seeks cooperation from India to build trade facilitation infrastructure in Nepal to fully integrate with the economies of the States.

Nepal is well endowed with natural resources and a young workforce with an average age of 24, which offers a conducive environment for business and investments. Joint ventures in hydropower, agriculture, Argo industries, food processing, tourism, manufacturing, technology and infrastructure development can be mutually beneficial, creating a win-win situation for both sides. Nepal to have a tremendous potential for high altitude agriculture, food crops and lentils. Nepal has big potential for herbs and herbal products which can contribute to the health and wellness sector. It also has a vibrant middle class; its market offers opportunities for investment and trade.

Nepal boasts of significant hydropower potential and it is well positioned to be the battery to fuel the growth of Purvodaya States. Collaborative efforts in developing hydropower projects and cross-border energy trade can address the energy need of the region. Export of electricity of NPR 11 billion to India last year is the recent example. More than 90% of Nepal's hydropower potential is still untapped. Cross-border transmission lines with India and with Bangladesh have been initiated and this energy corridor can be expanded to Purvodaya States and beyond.

The tourism and hospitality industry of Nepal now offers world-class products and services. We seek to host more Indian tourists from Purvodaya States. Expanding air connectivity especially between Purvodaya States and Nepal – will not only boost tourism exchanges but also strengthen people-to- people relations.

Improved transport and digital connectivity between Nepal and the Purvodaya States can unlock tremendous opportunities. The highways, railways, riverine and maritime connectivity between Nepal with Purvodaya States and beyond to India's Northeast region, Myanmar and Thailand can be transformative to harness the economic growth of the region.

Digital connectivity is as crucial as physical connectivity – collaborating to expand broadband infrastructure, promote cross-border e-commerce, and digital payment system etc., can open up new avenues for collaboration in trade, education and digital services.

The prospect of building deeper linkages between Nepal and Purvodaya States has immense potential. We need to build bridges that go beyond mere economic transactions. Our collaborations should be rooted in shared values, mutual respect and a vision for a prosperous and interconnected region.



Amb. Pankaj Saran,
Convenor, Nat Strat Member, National Security
Advisory Board, Former Deputy NSA of India

Ambassador Pankaj Saran, Convenor, Nat Strat, Member, National Security Advisory Board, Former Deputy National Security Adviser of India speaking on “Contextualising connectivity within India’s national security construct” said Odisha has a coastline of 450 km, it has the three large ports of Gopalpur, Paradip and Dhumra and furthermore when you look at the distances from Paradip to Sittwe, or Paradip to Mongla or Paradip to Payra or Chittagong/Chhattogram, you realise the Odisha coastline is actually closer to these ports in Myanmar, in Bangladesh than it is to Tuticorin or Chennai within India.

Odisha, as a state is ideally placed to build upon these small distances, connectivity and the questions which

we need to ask ourselves are that if this is the geography of Odisha and the Indian east coast, what the reasons for the lack of connectivity are for that which could have been naturally connected through the sea for example. Although the history of Odisha goes back to Bali and to Sumatra and to Indonesia and further beyond, these are areas which are much closer; and yet, we do not have the kind of ferry services or passenger or cargo movement which actually is prevalent in other parts of the world.

Connectivity is not just external; it is part of a broader seamless process for example, to connect the coast with the interior so that supply and value chains go beyond the coast of Odisha to other parts in Southeast Asia. Connectivity is a critical instrument to promote and achieve foreign policy development and national security goals. For example, the Grand Trunk Road that was built by Sher Shah Suri 2500 years ago. He realised that connectivity played a part in promoting strategic and military objectives.

Foreign policy is also used to restore broken connectivity and at other times to build fresh connectivity and each of these need different set of tools and strategies. For example, prior to the Mughal invasion of India, the writ of the Indian Empires ran right up to Herat in Iran to Central Asia, to the Russian Empire and beyond, and there was seamless connectivity as we know till the partition of India.

In this part of the world when we are making a lot of the effort to restore broken connectivity. Successes that we have had in the last fifteen years in the Eastern part of South Asia are related to how we have restored what already was there and built new connectivity. Empirically, it is proved that connectivity is a mutually beneficial venture.

Connectivity is multi-dimensional. Maritime connectivity is critical in the Bay of Bengal from the Andaman and Nicobar Islands right up to Aceh in Indonesia. Energy connectivity exists involving Bangladesh, Bhutan, Nepal and Sri Lanka. Air connectivity facilitates tourism and people-to-

people contact. We are now in the era of technology, digitalisation, the revolution in space affairs; these are going to change the manner in which we deal with each other as countries.

Connectivity costs money and requires capabilities. The issue of who controls the connectivity is also equally important. Several connectivity projects have not taken off in right earnest because of this. For example, the Turkmenistan-Afghanistan-Pakistan-India pipeline. But more importantly, there are problems of finance and connectivity does not come for free. So, although a particular project may look very appealing it is not necessary that it takes off.

Connectivity unfortunately is a double-edged sword. Connectivity can also be weaponised and denial of connectivity is also an instrument of policy. We have witnessed, not just let us say in the case of the Ukraine conflict, where both sides, the Russians and the Europeans, have weaponized the oil pipelines and the Nord Stream-II which connected Russia to Germany. In the past, Bangladesh had refused to give transit facilities to India and in a sense had weaponized their strategic and geographical location to deny India the natural connectivity with the Northeast.

It is most unfortunate that in this subregion the most effective and efficient connectivity were established by terrorists, the insurgent groups and narcotics drug mafia. While governments were struggling to establish legal connectivity and creating the infrastructure, it was this black market, this whole universe of crime and terror and insurgents who had actually established seamless connectivity between Bangladesh and the Northeast, between Myanmar and the Northeast, between even Bhutan and the Northeast.

Whether we look at culture, religion, language, other softer aspects or a common civilizational space, we are all connected. We have to enhance the capacity of the countries to increase their trade with India, to increase physical connectivity with India, to invest in India. Reality checks have to be instituted.

When we look at the balance sheet of this sub-region and go country by country, in the last decade or two, connectivity has seen a tremendous improvement. The private sector also comes in into areas which require initial funding but which may not create immediate profits or returns. It is important to make use of connectivity to profit from it. Business connectivity can contribute to prosperity.

The question is whether we can now turn the tide and open a new chapter or turn a new leaf in developing connectivity in spite of several challenges that internal turbulence in the Bay of Bengal countries poses. Connectivity is for mutual benefit.

In the **Q&A Session** there were questions that were posed to the panellists of this session. One of the participants pointed out that out of India's eleven integrated check posts, six are located in the Northeast Region but the contributions of the Northeast region is miniscule. India's trade with Bangladesh is not even 2% in the total trade. Not much progress has happened in the trilateral highway between India, Myanmar and Thailand. Given the production structure, given the orientations of the manufacturing sectors in the Northeast and eastern India, we don't think we will be able to really effectively utilise these connectivity projects.

Another participant asked whether the countries in the neighbourhood scrutinise the Chinese-funded projects as much as they do for India. A point was made from the floor that it is the Government that can invest in projects that may not be profitable in short run.

Replying to these questions and comments rose from the floor; the panellists agreed that these missing links which are at a micro level are actually the key to bigger connectivity. When it comes to connectivity, we should take into account all fronts. The question is both of political will and the availability of resources, both are critical.

Digital services could be a very strong source of connectivity where actually people will be less political, and will disagree less.

Not only does India help connect other countries in the subcontinent but other countries in the subcontinent also help connect one part of India to the other. Connectivity is both a driver and an outcome of links in other areas.

Replying to the question on Chinese projects and debts incurred, it was argued that if you compare assistance from different countries to the receiving countries, definitely there are conditions which are not very much welcoming but still countries are accepting it. Similar is the case with China. Countries need resources and China is offering them without any string attached. BRI was very popular five to seven years ago, it is not that much popular now.

Answering the question on why the Government needs to invest, panellists said private sectors of the other countries they are not willing to bear the political risk. Moreover, there has been an end user when the projects fructify. For example, energy projects require private buyers.

Less capital-intensive operations which can be done by private players and they should be encouraged. The MEA lines of credit of billions of dollars are also available to the private sector but utilisation is mixed. But the lines of credit have been given at very subsidized rates for precisely the private sector companies to avail of.

There was a comment from the floor saying that Chinese companies are by and large government companies. That is the reason why even Western multinationals are finding it very hard to compete with the Chinese companies within China. So, until and unless, the government does not chip in, at least the public private ownership context it will be increasingly difficult for the private companies. Examples are Maldives and Myanmar where Indian private companies were replaced by Chinese. However, it was also pointed out that Chinese BRI are not popular for the debt burden they create and take away employment opportunities of the locals.

Plenary Session – III

Commerce, Transport and Energy Corridors – Looking at Purvodaya from Outside



Mr. Sashi Shekar Mohanty,
Chairman, CII, Odisha State Council, CEO-cum-Managing Director, Essar Minmet Ltd

Mr Shashi Sekhar Mohanty chairing Session III of the Conference, said, it is important to delve into transformative economics that is embedded in commerce and transport that includes roadways, railways, airways, waterways, and energy corridors that criss-cross the landscape of eastern India. Eastern India has a rich tapestry of history. Odisha has been a pioneer in starting this trade, almost around 2nd century BC. Cultural and economic vibrancy serves as a canvass for the interplay of these vital corridors. It is important to analyse how these corridors can become catalysts for unlocking the latent potential of eastern India, fostering innovations, creating employment opportunities and propelling eastern India to new heights.

Prof. Mahendra P. Lama, speaking in this session, said, this energy connectivity that one sees in South Asia today, is a result of protracted dialogues on the needs and benefits going back to conversations in the last twenty years.

There were multiple players including multilateral institutions like the World Bank, the Asian Development Bank and the private sector, and think tanks that played a pioneering role in sensitising policy makers on the importance of energy connectivity.

The traditional thinking was towards generation of electricity and then transmission and distribution of energy. But today, the strategy is, first establish the transmission line, then generate electricity in different countries, evacuate and distribute.



Prof. Mahendra P Lama,
Centre for South Asian Studies,
School of International Studies, JNU

Energy connectivity influences the communities at a micro level and the commercial ventures at a macro level, as it ensures growth, human security and protects national security interests. In this context, the unburdening of the unproductive yet deeply emotive way of resource nationalism that one saw in Bangladesh, in terms of exporting gas and in Nepal in terms of hydro-electricity, is important. Resource nationalism was used to assert national identity, national sovereignty and motivate these countries to withdraw from the cooperative and inter-dependent process. The situation has changed now.

There is a realisation that transit with partner countries is key to interdependence. So, these transit responsibilities are shared now.

It is no more India-centric, rather, it is sub-regional and South Asia-centric. Identification of project-based multi-modal connectivity is significant. The last one is of course, India's operationalization of cross-border electricity trade guidelines, which is very critical.

This change in approach to interdependency has generated several models of cross-border electricity trade. The first is bilateral, India-Bhutan, the second is, creating a regional pool like the Greater Mekong region in the line of Power Pool model. India is getting almost 2326 MW of electricity from Bhutan and Nepal. India just assured Nepal that within ten years, it will buy about 10,000 MW of electricity.

There could be an exclusive model with a dedicated transmission line like that of the Adani group in Jharkhand, that transmits electricity to Bangladesh. This is a 100% dedicated transmission line, selling almost 1600 MW of electricity. Generating electricity in the neighbourhood as in Rampal in Bangladesh is a bilateral model of energy cooperation.

Electricity exchange took place at a local level between Tripura and Bangladesh, as recognition of Bangladesh's help in bringing heavy machineries through the Chittagong and Mongla ports to India's Northeast. Bangladesh has also provided broadband width from sea cables.

Odisha figures very prominently in this entire schematic of connecting South Asia with Southeast Asia. Myanmar can be connected by grid through four different borders – those of Mizoram, Arunachal Pradesh, Nagaland and Manipur. The wheeling facility is important to move with cross-border power trade. If we are able to do big business in electricity, the entire region would be transformed into a new growth pole. Today, the World Bank, the Asian Development Bank and JICA are all there in Northeast India.

Prof. Pritam Banerjee, Professor and Head of the Centre of WTO Studies at the Indian Institute of Foreign Trade, highlighted two main transformative changes that have taken place.

The first, the construction of Padma Bridge has reduced distance between the eastern border in West Bengal to the Northeast significantly. The second is rail connectivity with Padma. The other transformative project is the BBIN Motor Vehicle Agreement, which is still work in progress. This

will help in reducing transport costs and save time, as transport vehicles will move seamlessly. Over the next three to five years, a network of roads and rail connecting eastern India, Bangladesh



Dr. Pritam Banerjee,
Professor & Head, Centre for WTO
Studies, IIFT, New Delhi

and the Northeast, would provide a huge opportunity for cargo evacuation. A network of ports in Purvodaya States will decongest the ports for export and import using the existing transport corridors.

Historically, in the pre-colonial era, the Bay of Bengal was a rich maritime network. There was lot of trade happening between India's east coast, Southeast Asia and onward to Indonesia. There are no hub ports in this region. The Bay of Bengal does not figure in the maritime map, as countries of this region do generate enough cargo that will make these ports economically feasible. So, essentially you have the transshipment hub at Colombo and ports in Malaysia, Singapore and Thailand.

There is a lot of dependence on feeder networks. It means that relatively less traffic moves through maritime routes, there is dependence on land borders and that leads to a situation where maritime traffic is costly for Bay of Bengal coast. You typically have to use the hinterland to reach the ports.

However, the situation is changing for the better. The first initiatives the Prime Minister's Gati Shakti multimodal initiative. There is focus on rail to port connectivity and creating dedicated freight corridors for rail traffic. India's hinterland connectivity with ports is now both by road and rail. So, with Gati shakti, the Bay of Bengal ports would benefit.

There is shifting of supply chains from China, especially post the pandemic. Industries are looking to relocate and as a result new industrial hubs are coming up in India in places like Uttar Pradesh and other parts of the country. The Southeast Asian countries can look at using the Bay of Bengal ports. The volume of cargo will generate business demand for those ports.

The development of multi-modal corridors in Southeast Asia itself will open up direct connectivity through their Bay of Bengal ports. Robust maritime connectivity will complement the rail and road networks that are coming up in Bangladesh and the rest of the region. For a century, post-colonial Bay of Bengal had become a maritime backwater. That situation is going to change. The Bay of Bengal will gradually become a robust maritime trading zone and that is in India's interest not just in strategic terms but also in economic terms.

Mr K. Sreekanth, speaking in this session, said, PowerGrid owns about 85% of the total inter-state transmission network. In terms of market capitalisation, it is close to Rs2 lakh crores now.

India's Northeast is rich in hydro, but low in demand. The eastern sector is rich in coal, again low in demand. The west has lot of demand; the southern part of the country also has a high demand. Resource unevenness in distribution is a big driver for the transmission network. Today, we are endeavouring to follow the one-nation, one-grid, one-frequency policy. The total capacity is about 112000 MW in the country to exchange power across these regions.

The Indian transmission network is one of the most advanced in the world and there are many technological advances; be it in terms of HVDC transmission, the voltage levels, or placing smart equipment into the grid.

The benefit of this is there is hardly any congestion in the network today. There is an increase in trade within the country, which is a major benefit out of the grids we have today.

Having interconnected the grid, what is the challenge today? The critical issue is the integration of renewables. Renewables are intermittent, variable and have a very short gestation period for bringing them on stream.



Mr. K Sreekant,
Chairman and Managing Director,
POWERGRID

PowerGrid is playing a major role in integration of renewables and promoting the journey for sustainability for the country.

PowerGrid is playing a significant role in establishing cross-border transmission lines. About 13 gigawatts of cross-border interconnections are on the anvil. Cross-border grid connection would help in better usage of resources, there are economies of scale.

For example, Bangladesh and Sri Lanka use a lot of diesels, which is much more expensive than taking power from India, including the transmission cost; the landed cost will be cheaper, and with economies of scale, you can do more. For the sustainability goals of these countries, there are several advantages of these cross-border interconnections.

The One-Sun-One-World-One Grid principle is the vision that has been announced by our Prime Minister in Glasgow. There will be many interconnections with the Southeast Asian countries and across the West from India to Oman, India to the Middle East and from there to Africa, encircling the grid through the interconnections.

There are many enablers for this because this is a very challenging concept. So, you need a lot of support from the Government, you need deliberations at the political level and consensus, you need a regulatory framework for this, you need lot of technical studies. Of course, the funding and commercial aspects are extremely important, because these involve huge investments.



Prof. Saurav,
Centre for South Asian Studies, School
of International Studies, JNU

Prof. Saurav from JNU said that mistrust between countries has hindered major infrastructure projects under the BBIN and SAARC. The Government of India's Act East Policy provides an opportunity not only in terms of physical or economic connections or people-to-people, but also in the long term, it is trust making.

Small initiatives like border *haats*, medical tourism, the hospitality sector, cooperation in finance and banking sectors can help in building trust.

In the case of BBIN, India has two objectives. The first is to connect with the Southeast Asian countries, second, to develop our own Northeast region, again, both economically and security-wise.

Neighbours depend on India for connectivity; for example, Bangladesh to connect with Nepal would want India. BBIN has the potential to change the Northeast and further India's Act East Policy. There is a problem due to resource nationalism and resource sharing. Under the BBIN agreement, if we go for customs simplification, some major investments, hospitality, there is a chance that business in other areas may flourish.

Mr Abdul Matlub Ahmad from the India-Bangladesh Chamber of Commerce, said, when we saw Purvodaya we were confused, what is Purvodaya, is it Act East or is it Look East, what is it?

Geographically, Bangladesh has the advantage in helping connectivity with North East, Bhutan and. In Bangladesh, we export around \$ 50 billion worth of garments to Europe and we transfer it to Singapore or some other places. But, we have so many ports now coming up in Purvodaya States; we can always use those ports for exports to Europe and the US. So, here is an example of the collaboration between Bangladesh and the Purvodaya States.

The eastern states of India have many minerals like iron ore, bauxite, chromite, limestone; quality steel mills can come up here. Bangladesh does not have a basic steel industry. The big opportunity is to use these minerals to make new industries here and then expand into the other markets like Bangladesh, Nepal, Bhutan, the Northeast and beyond.

From my experience in Bangladesh, when we opened the Pangaon Port, which is a riverine port for Indian cargo, what we found was that while we were getting huge amounts of cargo from India to Bangladesh, there was hardly any cargo from Bangladesh to India. So, the advantage of using the rivers and having cheaper freight is not there. It just doubles when we don't have any cargo rivers. We can think of putting up industrial raw materials and imports and exports between Bangladesh and Odisha or the Purvodaya States.



Mr. Abdul Matlub Ahmad,
President, Indo-Bangladesh Chamber of
Commerce & Industry (IBCCI), Chairman,
Nitol-Niloy Group

We can set up garments industries here and send them in semi-finished position to Odisha. To and fro business is always required for sustainable success. Not only do we have the waterways, but if you look at the map, we are connected now by railways, roads. So, products from South India can also reach Bangladesh through Benapole and Petrapole. There are sixteen ports all around Bangladesh connected with the other neighbouring States, which are useful.

Today, New Delhi wants the Purvodaya States to take up leadership in this region around Purvodaya. If you look at Purvodaya, we have Bangladesh, the Northeast Nepal and Bhutan through Bangladesh, and Bangladesh's ports can also be utilised for Purvodaya States.



Mr. Badri Prasad Tiwari,
Counsellor, Embassy of Nepal

Mr Badri Prasad Tiwari, Counsellor at the Embassy of Nepal, said, Nepal and India are not only neighbouring countries, both are good friends with deep cultural and social relationship. Nepal is a landlocked country, which is surrounded by two big countries, India and China. Nepal is a diverse country and geographically it can be divided into Himalayan, Middle and the Terai region. Nepal and India have developed various crossborder connectivity projects. Nepal, is advancing its connectivity with India through railways, roadways, pipelines and airways. India is working on the Gandak River, connecting the Ganga with Triveni Ghat Nepal.

After that project is completed, Nepal will get direct access to the sea from its border. Connectivity has emerged as the key to bilateral and multilateral regional relations, in order to facilitate mutual trade and achieve a higher trajectory of economic growth.

India is strategically located on the world's shipping routes. In this context, Nepal would like to be a partner of regional growth through access to advanced maritime, riverine, land and air, digital, educational, social and cultural connectivity with India.

Bangladesh, Bhutan, India and Nepal concluded a Motor Vehicle Agreement under the BBIN framework, in June 2015 for the regulation of passenger, personnel and cargo vehicle traffic between these countries, to seamlessly move cargo and passengers. There are proposals to establish a regional power grid, enabling the exchange of electricity among the countries. The collaboration aims to enhance energy security, promote sustainable development and meet the growing demand for electricity in the region.

Creating a regional value chain in South Asia, particularly in Nepal and the Purvodaya region, involves integrating various economic activities across borders to enhance production, distribution and trade. It can encompass sectors like agriculture, manufacturing technology, education, and services. Fostering collaboration among neighbouring countries to boost efficiency and competitiveness, infrastructure connectivity, addressing trade barriers and fostering partnerships among stakeholders, are crucial steps towards establishing a successful regional value chain in this region.



Mr. Vivek Singla,
President & Head
Green Hydrogen Business,
ReNew Power

Mr. Vivek Singla, President of Hydrogen and EV Businesses of ReNew Power stressed on grid interconnection between the various countries in this region and the need to strengthen this interconnection because that is the need of the hour to accelerate economic development in this region and to help the development of green hydrogen opportunities in the region.

Green hydrogen is the buzzword today. If this world has to survive there is no way they can walk away from green hydrogen. Without going in for green hydrogen and its derivatives, the world cannot achieve its ambition, its net zero carbon target. With this, many countries have come forward with support for green hydrogen. The US has already committed \$380 billion to support green hydrogen initiatives. Europe is contemplating committing €400 billion to support green hydrogen.

The Government of India has identified this opportunity and has developed the vision of making India an export hub of green hydrogen. Sixty to seventy per cent of the total cost of green hydrogen comes from renewable power. Therefore, renewable power becomes very important and therefore the Central Transmission Utility (CTU) charges waiver has come as a very good option to establish these green hydrogen projects in the eastern part of the country.

In the **Q&A session**, the following questions were raised:

Can the Government step in and invest, because without budgetary transmission, wheeling is not possible in difficult terrain.

With new technology coming in, whether it is jelly-filled transmission 880, or under the sea, it is important to know how feasible new technology is, to have a robust transmission line. Another

question was, as per the COP26 commitment, India has to reduce its carbon footprint and increase renewable energy production to 50%. What should be the policy measures taken by the eastern Indian states so that we can increase the renewable energy production? One of the participants wanted to know whether Odisha's potential and capability, has been optimally utilised in intra-regional and inter-regional energy connectivity projects.

Answering the questions, the panellists said, in terms of transmission charges, the infrastructure is of course, expensive. But it has a very long life –35 years plus – so it is spread over a long period. There is limited budgetary support only available for very niche projects.

This will be the first time that we will lay an undersea cable to Sri Lanka. The technology is there. the depth at which we interconnect to Sri Lanka is easily available. But if we want to connect Singapore then it becomes a bit more challenging because deep cables having a capacity of 3000 metres are evolving. But they are not yet developed.

The Government of India has already come up with CTU charges. The CTU charges have been waived off for certain categories of projects, which helps transportation of renewable power from some parts of the country to the others.

Odisha has come up with a very good policy of offering their water surfaces, which they have plenty of, for development of solar energy and they have come up with a good policy. It is important to know more about the policy, which enables development of large solar plants over these water bodies. The power grid is planning a large project of 1 million tons per annum at Paradip. At Gopalpur, we are planning large projects in Rayagada and Malkangiri districts for green ammonia facilities and for green ethanol.

Odisha does not figure prominently as it should have in the entire schematic of developing Eastern South Asia, as a growth pole or South Asia growth quadrangle. But there are opportunities. The first opportunity is if the Odisha government really pushes hard with the Government of India, saying that Odisha is going to play a key role in India's Act East Policy, which is doable. That would open several opportunities for integration with the Eastern South Asian growth pole.

In preparing the *Northeast Regional Vision Document 2047*, it would be important to get as many Eastern partners as possible, including on connectivity, trade, commerce, education, services, health, natural resource management, disaster management practices and even climate change strategies.

Plenary Session – IV Addressing Non-Traditional Security Threats and Capacity Building



Rear Admiral (Retd) Monty Khanna, AVSM, NSCS

Rear Admiral (Retd.) Monty Khanna, chairing Session IV on the theme of “Addressing Non-Traditional Security Threats and Capacity Building”, said in his opening remarks, it is important to understand the maritime domain. It covers 71% of the globe, 70% of the world’s population stays within 100 nautical miles of the coast line, 80% of the large financial centres of the world are in coastal cities, 90% of merchandise trade moves on water, and more than 95% of all internet traffic travels on undersea cables. The Arctic is also opening up now.

Out of 195 nations 44 are landlocked. Connectivity is only growing with time through sea, riverine routes and canals. Yet disruptions can happen. When the Suez Canal was disrupted for six days it cost \$ 916 million for the Suez Canal authorities and \$ 10 billion to the global trade.

Since the seas are inhospitable, you have a graduated system of sovereignty – from territorial waters, to the contiguous zone, then the Exclusive Economic Zone and then to the high seas. So, this is an eroding system of sovereignty. As you move away from the coastline, your sovereignty keeps reducing until you hit the global commons. Maritime challenges are diverse. Maritime piracy, gun running, maritime terrorism, IUU fishing, smuggling, drug and human trafficking, as well as marine pollution can be absolutely devastating for the coastal countries. Competitive maritime resource exploitation, as resources on land get depleted, would be another challenge. Since in exploring global commons, sovereignty is not defined, there is likely to be intense competition. Managing Exclusive Economic Zones would be a challenge; some of the smaller island countries have bigger EEZs. Disaster resilience and HADR would be another important component. It requires building up national, sub-regional and regional capacity.

Prof. Rajan Kumar said, it is important to understand connectivity in the context of geopolitics. Exactly ten years earlier, BRI was imagined and now it has become a defining feature of global politics. The Bay of Bengal is the future of India and that is where the growth would come from. Without connectivity we cannot think of either developing the eastern part of India or even India.



Prof. Rajan Kumar,
Associate Professor,
SIS, JNU

If the 19th century was a period of industrialisation, the 20th century was a period of the IT revolution; the 21st century belongs to connectivity. There are several studies which have been conducted which argue that if you invest \$1 in connectivity the return would be approximately \$ 2-4, depending on the place and the project. Studies have shown that if you are adjacent to the highways, it is very likely that your per capita income will go very high.

In the last ten years, China has invested \$1trillion in the BRI and out of that, 60% has gone to construction and the rest to financial and other activities. Today 147 countries including 18 European countries are part of the BRI. India is the only country that can economically and politically offer an alternative to the BRI. So, what are the alternatives India has tried to offer?

One is the INSTC (the International North South Transport Corridor) which starts from St. Petersburg in Russia, comes to Azerbaijan, then to Iran connecting to the Chabahar Port. The second, such project is the India-Myanmar-Thailand trilateral highway. The third is the BBIN and the fourth is the recently announced India-Middle East Economic Corridor.

The Russia-Ukraine war, the Azerbaijan-Armenia conflict, and sanctions on Iran affect the prospects of INSTC. The India-Middle East Economic Corridor that would connect India, Saudi Arabia, the UAE, Jordan, and Israel, and go further to Europe, is marred by the Hamas-Israel conflict.

India's Northeast constitutes roughly 3.8% of the population, which occupies about 8% of India's total geography, with 5,300 km of the international boundary. Unfortunately, the contribution from that big a region is only 2.8%, due to lack of connectivity. SAARC has become dysfunctional due to Pakistan and BIMSTEC has the potential, which needs to be explored. We should move towards the East rather than get fixated about Western connectivity.

To make them successful, neighbouring countries should be stakeholders in the connectivity projects. Bhutan and India are the only two countries in South Asia which are not part of the BRI. India is going to face geopolitical challenges in the coming years due to the conflict in the South China Sea. A strong strategy is required to prevent China from undermining India's connectivity projects. It is important for India to take its neighbours along so as to address security challenges emanating from there for the business to prosper. India must speed up the connectivity projects within eastern India and also connect eastern India with Southeast Asia and Bangladesh.



Commandant PV Gopal,
Indian Coast Guard

Commandant P.V. Gopal in his presentation said Oceans are part of our global economy, climate regulation and even part of our food supply. Non-traditional security threats encompass a diverse set of challenges that extend beyond conventional military conflicts. These threats include, but are not limited to, climate change, cyber threats, pandemics, terrorism, and maritime insecurity. Addressing these issues is crucial for maintaining global stability, for fostering sustainable development.

The seas, once considered spaces for commerce and communication, are now arenas where non-State actors and illicit activities pose significant challenges to connectivity.

Piracy, smuggling, environmental disasters and territorial disputes in vital waterways can disrupt maritime trade routes impacting the global economy and hindering diplomatic relations. Nations can pool resources, share intelligence and conduct joint patrols for maritime security and seamless connectivity. Maritime security alliances aim to safeguard these crucial pathways, ensuring uninterrupted maritime connectivity.

Our oceans face a grave threat from pollution, IUU fishing coupled with cross-border fishing and IMVL violations.

These incidents have devastating consequences for marine life and ecosystems. Maritime security through alliances comes into play, as apart from security, they also address the larger, important and benign issues like environmental protection, disaster management and keeping the sea lanes of communication open to ensure uninterrupted marine connectivity.

The safe passage of vessels through busy waterways fosters economic stability and prosperity for nations worldwide. The Combined Maritime Forces (CMF) are a multi-naval partnership and have played a crucial role in securing this vital maritime corridor by conducting anti-piracy patrols and providing training to regional navies.

Regional cooperation agreement on combating piracy and armed robbery against ships in Asia (RCAP) exemplifies successful regional cooperation. RCAP, a multilateral arrangement involving Asian countries, has enhanced information sharing, coordinated patrols and capacity building to address piracy.

The Indian Coast Guard engages in institutionalised cooperation under Memoranda of Understanding with the maritime law enforcement agencies of other countries to establish collaborative relationships to combat transnational crime and develop regional cooperation through high-level meetings and joint exercises which are an annual feature under these MoUs. Capacity building in areas such as maritime governance, law enforcement and conflict resolution has emerged as a key component in fostering long-term resilience and sustainable solutions.

Nations need to collaborate in establishing and implementing international agreements that promote responsible maritime behaviour and facilitate cooperation in addressing shared challenges. Non-traditional security threats particularly those in the maritime domain, demand a concerted and collaborative effort from the international community.



Comde. Sujeet Samaddar, Founder SAMDeS, Former VP-TATA NOVA, CEO Shin Maywa India, Sr Cons NITI AAYOG

Commodore Sujeet Samaddar said, the concept of traditional threats was laid at the Peace of Westphalia in 1648 which actually brought together the parties who signed three agreements between themselves. The first was the inviolability of borders, the second, non-interference in domestic affairs of sovereign States and third, the citizen's abrogation of the right to exercise violence in favour of the State for his own preservation and safety.

All of these required some sort of military force, an army, navy, and air force to respond when national boundaries were transgressed and sovereignty was at stake.

Non-traditional threats do not impact territorial sovereignty per se or the ability of a country to exercise its own foreign policy, but it has a huge amount of economic, societal and political instability that can impair people's well-being and sources of livelihood.

These in turn, lead to internal discord and disharmony, resulting in civil rebellion or unrest. By 2050 there will be nine billion people on earth and around 1 billion livestock and wild animals. Interestingly, our livestock population is growing at 4% whereas human population is growing at 1.5%. But this whole community of humans and livestock need food and water and there is going to be competition for that. India is second largest producer of fish and world's largest in terms of rice and many other cereals, but there is a large population to feed. This can cause food insecurity. Sixty-nine per cent of our water resources is used for agriculture, 20% by industry and 11% is used for domestic consumption. Ground water is drying up; in 1951, 3000-4000 cubic metres of water was available and it will be reduced to 1350 cubic metres in 2030.

The reasons for insecurity in water come from the conflicts and competition that arises from sharing of water resources. There are conflicts between the states of India and also between India and its neighbours. Water security impacts the way food and agriculture would be produced. For example, if you are producing water-intensive crops like sugarcane and cotton, 21,000 litres of water is required for producing 1 kilogram of cotton and we are not recycling it. Due to climate change we see floods and droughts affecting ground water reserves. Rain and precipitation has a certain linkage to ground water accumulation and these would change if we continue to produce water-intensive crops. India is now a net exporter of power and the way forward as per the Government's policy is to become a larger exporter of power when we bring in green hydrogen. We are in the Anthropocene era where human activity has been the dominant influence on climate and environment. It is impacting jobs, livelihoods, new skills, new capacities and capabilities, all of these have a direct impact on social cohesion. In addition, genetic engineering and modified foods will impact generations to come. There is issue of radiation. Access to materials, minerals and markets are going to be a driver. Migration due to climatic condition would be a challenge. The largest opportunity for Odisha to look at connectivity is to look at marine spatial planning of this region which includes the coastal regions of Odisha, West Bengal, Bangladesh, Myanmar so that we don't create an ocean slum here. There are only 3Rs as far as connectivity is concerned – *Rozi*, *Roti* and *Raksha*. This would provide a holistic approach to understanding non-traditional threats and their impact on connectivity.



Mr. Satyajit Mohanty, IRS,
Joint Secretary (Armed Forces & Policy),
Department of Defence,
Government of India

Mr Satyajit Mohanty argued that the Purvodaya region, both the states of the Northeast as well as our neighbouring States and our extended neighbourhood, all get intricately linked together with the growth centre with Odisha being the epicentre of this concept.

Mr. Mohanty emphasised on five issues: geopolitical uncertainties, cyber vulnerabilities, trade measures, investment uncertainties and the black and grey swan events. He argued the Russia-Ukraine crisis, which led to supply chain disruptions of palm oil and sunflower oil, illustrated how countries got impacted.

India is dependent on our cheap imports. Therefore, it becomes important to strengthen the domestic manufacturing base and self-sufficiency in food production so as to mitigate the crisis. If the Malacca Straits are choked or there is a crisis in the Taiwanese Straits, 80% of the supply of the semiconductor chips that come from three factories in Northeast Asia will be disrupted.

In India, we have only one semiconductor manufacturer which produces 180nm chips, and we are talking now of 3-4nm chips. If the sea lanes of communication are blocked, 80-85% of our energy which comes through the sea lanes, will be affected. There could be sabotage by non-State actors. Cyber vulnerabilities can disrupt this interconnected world. All your smart energy grids based on Chinese parts, components and products are amenable to cyber-attacks both by State and non-State actors. So, if you are preparing for the fourth Industrial Revolution (IR4) in Purvodaya States or if you are riding on IOT smart robotics, AR and VR technologies and smart shipping, we have to be very careful of the Dark Web and IR4-based technologies and the vulnerabilities arising out of them. We need to protect our critical and emerging technology sectors from corporate espionage. India has the second largest start-up network in the world; we need to have robust cyber security mechanisms to deal with copyright espionage. The weaponisation of dependencies is important to analyse. Eighty per cent of the critical and strategic minerals are now owned by China, 88% of the processing technologies are owned by China. How do we address these vulnerabilities? We call ourselves as the pharma capital of the world, but of all our Active Pharmaceutical Ingredients (API) and Key Starting Materials (KSMs), at least 80% come from China. If China weaponises this dependency, we are not in a position to be able to meet our own demand and we can forget about supplying to the rest of the world. There are subsidy wars, the carbon border tax, because of which our steel and aluminium industries in Odisha would suffer. The industries here will have to be careful, there is nothing benign which the Chinese are doing by investing in the neighbourhood and in critical and emerging technologies which India is dependent on.

We have to be aware of the black and grey swan events. Pandemics we know about, but sitting here in India and Odisha, this event probably had the shadow of a cyclone, fortunately it got diverted. We need to think about the extreme weather events which will happen more and more. Black swan events turning into grey swan events, cyclones for instance, disruptions due to drought and so on.

Rear Admiral Monty Khanna, in his concluding remarks, said, China also has vulnerability in the Indian Ocean. It is highly unlikely that China, being the largest trading nation in the world, its merchandise trade running in excess of \$ 6 trillion, will precipitate an event that can impact it also adversely. Capacity building and organisational efficiencies go hand in hand. India has a National Maritime Security Coordinator; State Maritime Security Coordinators have been appointed in all states. The idea is that several agencies involved in maritime security can operate cohesively if there are deficiencies” and with excess capacities you can address the broader regional challenges also.

The purpose of Mission LiFE is that we should not fall into the Western trap of excessive consumption and then find scientific solutions to address climatic change.

In the Q& A Session, questions were raised to understand the steps that are being taken to develop connectivity and generate employment. Another question was on the lack of the water security debate in India that does not discuss the river linking project. China is diverting the Yangtze River almost 1,300 kilometres, to irrigate eleven dry zones which roughly contribute 50% of the GDP. This affects the flow of rivers in India that originate in China. Similarly, glacial lake outbursts leading to floods are not discussed.

How does the BRI impact connectivity projects especially in eastern India? Another question was on the relevance of critical and strategic minerals and where India stands. Why is the Indian Government not thinking about having a satellite transshipment port on the east coast so that the cargoes from large mother ships which may land up in 5- or 10-years' time in the Great Nicobar South Bay Island, can be transhipped to the east coast where the trade will pick up in the coming years. Replying to these questions, the panellists said: The availability of Shale gas in the northern part of China has led it to divert water, as Shale gas exploration requires availability of a lot of water. There is no mitigation strategy for glacial recession. The Arctic Ocean cap is 50% of what it was. It used to reflect most of the Sun's radiation from the Arctic Ocean to other areas. Now, we are in a situation where permafrost is visible which is going to unleash a whole lot of new microorganisms that are likely to pose challenges.

Why should India export iron ore primarily to China without any value addition? India runs a trade deficit of more than 100 billion. If you look at China's total trade surplus of around \$ 700 billion, India accounts for 10 to 15%. This money is invested in the People's Liberation Army. Bring together the *Bharat Mala*, the *Sagar Mala*, the *Gati Shakti* projects, renewable energy and probably see a new and prosperous Odisha.

On the issue of critical and strategic minerals, there are a group of seventeen rare elements in the Periodic Table. Lithium, for example, is required in electric vehicles, solar energy, and in green transition projects. Eighty per cent of Lithium comes from China. Eighty-seven per cent of the processing technologies of chips and batteries are with China. This makes dependant countries vulnerable. It is not just China that can flood India, even Pakistan can cause damage to India by releasing water from Diamer Bahasa Dam. Our dependency for fertilisers on China, has led to an increase by Rs50,000 crores because of the supply chain disruptions. In BRI, roughly \$ 967 billion have been invested in the last ten years; out of that 60% is for construction activities, financial and other activities. There are protests in Central Asia against the BRI for causing social and environmental disruption, while in Sri Lanka, protests were against rising Chinese debt. It is really the *Sangpo* which impacts India. It is a run-of-the-river project, but in the future water can be diverted.

But the larger point that we have to be cautious about is that we are entering into a phase of possible deglobalisation. India's ports are not operating at more than 60-70% capacity. There are spare capacities that already exist. With renewable coming in, even the requirement for transshipment in energy will diminish in times to come.

Plenary Session – V Cultural Connectivity and Maritime Heritage



Ms. Mugdha Sinha, Joint Secretary,
Ministry of Culture, Government of India

This session was chaired by **Ms Mugdha Sinha**, Joint Secretary, Ministry of Culture: Referring to 4 December, which is celebrated as the Indian Navy Day. She said the Navy's motto is: 'Oh Varuna, Stay Tranquil'. Varuna as we know in our ancient Hindu Pantheon has been the Lord of the Seas and this reflects how our heritage connects to the contemporary and the modern world. Culture basically has this great ability to connect not just temporally over time but also spatially over geographies and topographies. We are aware that geography plays a huge role apart from the philosophy behind how culture connects.

India is not a landlocked country but a water-locked country from three sides, its maritime borders exceed its land borders by about 1500 km, which tells us that the waters have always been available to mankind for global outreach.

Water is not just the elixir of life because civilisations have grown around water; water has connected India to various civilisations around the world both in the East and in the West. We are all aware that Lothal goes back 5000 years to the Sindhu Saraswati Sabhyata. Nature and Culture are different sides of the same coin. Our forays into the seas have not just changed our societies and peoples through the various connections; it has also led to a new theory of how Culture is understood. The other very interesting theory about Culture is that it is not a proprietary ownership associated with identities but is something that evolves out of engagement with people. Several Chinese scholars have travelled in ancient India and carried Buddhist scriptures to China. Culture is actually the intangible heritage. What we see actually is just the performative part of culture. Countries are using Culture to make inroads into the geopolitics of the world and are strategizing their entry; it is a new form of colonisation. China for example, has started the huge global cultural initiative through the Confucius Centres, they have set up about thousand museums in their country without any artifacts and they are entering into long-term agreements with various countries in Latin America and Africa to populate those museums. This is a new form of cultural migration. Preservation of our cultural connectivities is very important across the Indian Ocean RIM countries. We are all aware that in 45AD, Hippalus actually discovered the monsoon winds; in 2014, the Government launched the Monsoon Project under the Ministry of Culture led by the ASI.



Dr. Chandandeep K Grewal, Under Secretary, PP & R Division, Ministry of External Affairs, Government of India

Remarks by *Ms Chandandeep K Grewal*, Under Secretary, PP&R, MEA, speaking on “Leveraging the role of Culture”, said India’s foreign policy is influenced by various factors such as its historical heritage, cultural values, geographical location, economic conditions, domestic as well as international circumstances. The combination of these factors and forces play an important role in determining the continuity and evolution of a nation’s foreign policy like that of India. The Purvodaya Initiative championed by the Government of India includes eastern states of West Bengal, Jharkhand, western Andhra Pradesh, and eastern UP. This mission prioritises the integration of Culture and history in paving the way for the region’s resurgence, development and ultimately advancing India’s foreign policy.

This initiative is in convergence with eastern India’s historical maritime activities which demonstrate the significant role of the people-to-people connect and trade, which is evident in the enduring cultural footprints they left, showcasing India’s maritime prowess and its impact on the cultural and economic exchanges. India is a peninsular power, historically subcontinental and semi-islandic. We have never been insulated from global trade, commerce and geopolitical developments. Thus the tradition of exchange with the global community in the form of trade, ideas, technologies, scientific developments and economic developments, etc., has made the Indian worldview open-minded, democratic and all-embracing as enshrined in the dictum *VasudhaivaKutumbakam*. We have also been committed to multilateralism and believe in multipolarity, as can be seen in India’s foreign policy. India also seeks to maintain sovereign autonomy and self-sufficiency, i.e., *atmanirbharta*, to forge our own unique path in the world.

Some of India’s main national interests as a major regional and emerging global power, are economic development, and development for all its citizens and maintenance of a safe and peaceful global order through respect for sovereignty and territorial integrity of all the countries realising their developmental aspirations. This includes maintaining rules-based global order and the sanctity of international law. Philosophical traditions of Dharma, *purusharth* and the middle path approach have always placed humans at the core purpose of individual life and social order. Therefore, we prioritise human-centric development in foreign policy which is clearly reflected in the developmental cooperation and goals. Culture plays an important part in India’s foreign policy and projects its soft power. Indian arts, culture and spiritualism have attracted people from all around the world for centuries. Our Prime Minister reoriented Indian diplomacy by combining new elements of soft power. The five pillars of this soft power used in the strategic sense are *sammaan*, *samvaad*, *samridhi*, *suraksha* and *sanskritievamsabhyata*, i.e. cultural and civilizational linkages. These are interlinked with India’s broader political and economic goals.

India’s engagement with countries in Southeast Asia is not new. The region shares a distinctive civilisation connect with the Indian subcontinent and has always been a place where culture, religious beliefs and languages have blended often influenced with local nuances and practices. India sees the ASEAN as one of its most important partners in a multipolar world. Both have an interest in developing free and inclusive regional architecture. In the early 1990s, India launched the Look East Policy and then the Act East Policy, to reconnect with its eastern neighbours and expand its economic and strategic ties with the region, with a commitment to ASEAN’s centrality in the Indo-Pacific. Domestically, India’s Northeast is being transformed by connectivity projects such as

Prime Minister's *GatishaktiYojana*, which will provide a land bridge to the ASEAN countries. Further, BIMSTEC, IORA, and other frameworks such as Ganga-Mekong Cooperation, are also bringing us closer to the ASEAN. In recent years, geostrategic stability in the Indo-Pacific region has been at the forefront of influencing the strategic collaboration between India and the ASEAN. India's active engagement with the ASEAN, fosters a multipolar world, ensuring a balanced power dynamic in the region.



Prof. Kishore Kumar Basa,
Chairman, National Monuments Authority

Prof. Kishore Basa, Chairman of National Monuments Authority, speaking on “Cultural Constructs in South East Asia and Purvodaya”, emphasised the primacy of Culture to examine the constructs that are found in Southeast Asia, and link it to the connectivity.

In a country like India Culture cannot be regarded as mere cosmetic either in the developmental process or in the course of diplomacy. With its rich civilizational history, Culture should be the input in sustainable development and a prime mover for diplomacy.

The Government has given primacy to Culture in the process of development and diplomacy. Culture is a transformative driver of sustainable development goals. Culture has an intrinsic value as a transformative driver and an enabler for the achievement of the SDGs.

Explaining what are the cultural constructs as far as Southeast Asia is concerned, is the concept of localisation. This concept developed in the 1950s in Southeast Asia as a counter to the theory of Indianisation. One has to understand that during the 1920s and 1940s, there was also resurgence on Indian research on Southeast Asia that coincided with the freedom struggle in India. Therefore, you come across so many well-known scholars like R.C. Majumdar, Neelkanth Shastri, Bhaskar Chandra Chhabra. The question of Southeast Asia as Greater India was not only conceived but was also highlighted during India's freedom struggle. In the 1950s the Dutch historian van Leo was very critical of this Indianisation theory and he said that Indian influence on Southeast Asia is what he called a thin plaguing glaze. Localisation was emphasised, which meant the primacy of the local cultures. This concept of localisation played a very important role in the cultural construct of Southeast Asia. Both Indian as well as Southeast Asian archaeologists and historians believe that it is shared heritage and not one culture dominating the other. The perspective of a shared heritage has great bearing in terms of Purvodaya perspectives. The second construct could be a culture based on rice, since Southeast Asia's entire culture is predominantly based on rice. The same is true in the case of eastern India or the Northeast. In Odisha, for example, in undivided Koraput and Bastar region of Chhattisgarh, we find more than 30,000 varieties of wild rice. There is also a possibility of the secondary origin or dispersal of agriculture.

The third cultural construct could be multiculturalism. Whether it is Singapore, Malaysia, or Indonesia, multiculturalism is an important aspect. The ASEAN is a regional entity but it also has a cultural connotation. It was said that the Indian merchants were going to Southeast Asia in search of *Suvarnabhoomi*; the major factor was India acted like a middleman getting spices from Southeast Asia and then sending it to the Roman Empire. This cultural context gives it a kind of shared heritage.

From the past to the present, as far as the present is concerned, the ASI is doing lot of conservation work in Cambodia and Laos. *Project Mausam* emphasises the shared heritage of India and Southeast Asia. The role of creative economy is important. About 3.1% of the global GDP is related to creative economy. This sector employs more people aged 15-29 years than any other sector.



Mr. Sabyasachi Dutta, Executive Director,
Asian Confluence, India East Asia Centre

Mr Sabyasachi Datta, Executive Director, Asian Confluence, on “Next Generation Cultural Infrastructure for people Connectivity”, said if you look at the eastern part all the way to Southeast Asia, we are a contiguity of river basins, from Indus to Ganga all the way to the Mekong. History tells us that this has enabled migrations through time immemorial. We are already a confluence of languages, i.e. Indo-Tibetan languages. We have Austro-Asiatic, Indo-Burman, Indic, the Dravidian and many of the Northeastern languages. Then our ancient rishis wrote, *Udara Charitameva Vasudhaiva Kutumbakam*; those who are of a broad mind, for them the whole world is a family. So, if we are talking about Purvodaya, I think the time has come for us to see how Culture can lead to confluences rather than conflict.

What makes the relationship sustainable is psychological connectivity where trust becomes a core factor. To build that trust, Culture can play a very important role, which should be leveraged. Culture does not only mean performances and Arts but also our values, lifestyle, thought processes and the icons we share from the past to the present. We need to build the cultural infrastructure. We connect the youth, cultural entrepreneurs across borders, thereby connecting the next generation of cultural services and industry. If you follow social media and Manipur, you see that the wedding of Bollywood actor, Ranveer Singh to a Meitei woman, captured headlines and created curiosity about Manipuri costumes and Meitei customs. So, Culture has suddenly been an enabler to change the narrative. The same is the case with the king of Bhutan’s visit to the Kamakhya temple, which is the seat of Tantrayana Buddhism. The King’s visit made people aware of this rich cultural connect. Culture can connect people. We need to ponder on how we can connect the ideas, institutions, and thought leaders to create infrastructure for promoting culture. Our educational curriculum needs to bring in these narratives from the primary schools all the way to colleges. It is important to archive oral histories of the region because there is a lot that gets lost in translation and in terms of archiving the memories of not just the ancient and the modern but also the contemporary connections. The academia, think tanks and the industry also need to look at investment in Culture as a strategic pillar for ensuring that their investments on the ground, on physical projects, capacity building, are met by investing in cultural interactions and facilitating them. People-to-people contact is going to be the strategic pillar on which all of the other things that we are talking about will be sustainable, whether it is security, ecology, whether it is economic or geopolitical.



Prof. Umakanta Mishra, Professor of History, Ravenshaw University

Prof. Umakanta Mishra, from Ravenshaw University, spoke on “Harnessing Circular Tradition: Bali Yatra and Lesson for the Present”. He said Bali Yatra is really a leitmotif of the kind of cultural connectivity that we had and the lessons we can draw. He spoke on three aspects – the textile and Indian Ocean trade between 10th and 13th century, Buddhism, especially Mahayana Buddhism, that went into Japan, and the relationship between Kalinga and Lanka. Purvodaya is a clarion call to rediscover the shared cultural self of the Indian Ocean Region or maybe the Indo-Pacific region that goes up to Japan. This region is shaped by the huge deltas formed by deposits of grand rivers and the Indic-inspired civilisations across many regions, from Yemen to Japan in the East.

Monks, Buddhist masters, mariners and many others, created the vast civilisational space. Notwithstanding the cultural mutations over centuries, and cartographic boundaries of nation states, this cultural sharing is part of the collective cultural self and runs in the cultural DNA from India to Japan. But such a civilisational space was not linear from India to Southeast Asia alone. Therefore, Bright India denotes exchanges and interactions that are unilateral. It was not always circular also, even though largely, India was at the centre. Nevertheless, it cannot be conceptualised as circular; it was much more nuanced and complex. Therefore, rather than Euclidean circle and circularity, I would use a non-Euclidean pattern like fractal geometry with never-ending patterns, rather than treating Southeast Asian civilisations as a one-way communication or circularity with India as the centre. It would be fruitful to approach as many regions participated – regions such as Nepal, Tibet, Sumatra, Malaya, Java, China, Japan and many others. The cultural development of Southeast Asia demonstrated a functional autonomy of their own. Borobudur was distinctly Javanese, even though the inspirations came from Vajradhatu Mandala from India. Similarly, Jayavarman’s capital was named Mahendra Parvat, a mountain from Gajapati district of Odisha but the 102-hospital chains that Jayavarman II of Cambodia built was distinctly Khmer in character. You might know Kublai Khan, the great Chinese emperor. Around 1270-75, he engaged in a Kalachakra ritual. Dalai Lama completed the last Kalachakra ritual in 2001 at Bodhgaya, and Tibetan literature talks of Odisha being a major centre of Kalachakra Buddhism in the 10th 11th or 12th century. Textiles from Southeast Asia and inscriptions from East Java were found in the textile trade, in which Odisha participated along with South Asian merchants and Arabs between the 11th to the 14th century AD. There have been several such cultural and religious interactions between India and other parts of the world. The Kalinga Dynasty ruled over Sri Lanka. After the destruction of Anuradhapura by the Cholas, the capital shifted to Polonnaruwa, and we have Vijayabahu ruling from Polonnaruwa. He had marital relations with Kalinga. We need a centre for Japanese, Chinese, and Tibetan language and culture studies, which focuses on Buddhist cultural exchanges between Odisha, Nepal, Tibet and India, because all the literature which talks about Odiacconnections is in Tibetan, Japanese or Chinese texts.

In the **Q&A Session**, questions were raised from the floor as to why the Government was not giving attention to historical cultural places that lie in the remote corners of India. What are we doing to influence the next generation including children? The available electronic content including animation is dominated by the West.

While concluding, the Chair said, when you talk of Culture, you only look at Culture having tourist potential, which is measured by footfall. In this context, outreach would be important. The Prime Minister has emphasised the need of *vikasthroughvirasat*. Culture can lead to so much of employment, but for that, dissemination of the importance of what Culture stands for, becomes very important. The young of today do not appreciate what their ancestors have left for them in terms of inheritance and legacy, which has huge potential to generate outreach, employment, and adds to the creative economy. Culture has a huge domino effect. This cadre building, this skill development in the country can only happen generation by generation, coming through the various culture and creative industries that we have. So Culture cannot be an addendum, it is not soft power; it is the power that is going to drive the economy in times to come. Earlier, there used to be a Press Note which would go out and all newspapers would carry that but today we live in a world of social media and social media is like an infocalypse; you have so much information today but you really don't know which part of the information is actually reaching out to you.

If you look at the seven primordial stories from which all stories have evolved, one of those primordial stories centres around maritime heritage. Some people in the Western world understand it as the Noah's Arc, the biblical flood. We also have our own Jaishankar Kamayani, which talks of an inter-glacial climatic change story. These are the stories that need to travel from one generation to the other.

Plenary Session – VI

Soft Drivers of Connectivity: Technology, Digital Innovation, Finance and Skilling



Dr. Smruti Pattanaik,
Research Fellow,
MP- IDSA, New Delhi

Opening Remarks by Dr. Smruti Pattanaik, Research Fellow, MP-IDSA:

In her opening remarks, Dr Pattanaik said, while hard drivers are important, soft drivers are enablers. Technology, digital innovation, finance and skilling go hand-in-hand because without technology transfer and collaboration in terms of developing various technologies to take the connectivity forward, both trade and industry investing in infrastructure would suffer.

Digital innovation has already taken trade to another level. After the pandemic we have seen how this digital driver has enabled cross-border trade and movement of goods. Similarly, finance, skilling and capacity building would further cross-border collaboration. India is engaged in capacity building through the ITEC programme which has been very successful since the mid-1960s.



Mr. Charudutta Panigrahi,
Author & Policy advisor

Mr CharuduttaPanigrahi, Author and Policy Advisor,said,India is emphasising Lifestyle for Environment that would help sustainability. Odisha is the aluminium capital of the world or the Bauxite and Steel capital of Asia and it has a lot of potential that can be harnessed.This is why we are saying that the South Asian economy is the fastest growing in the world, and India contributes 70% to the GDP of South Asia. Connectivity can be three kinds – socio-cultural, energy or electrical, and digital (SEED). This includes SEED andPurvodaya. When we are talking about connectivity,it is important to know how we can use the Internet of Things.

In the future it is not only coal and iron ore transportation, but we are looking at containerisation and trying to get investmentsin that sector.Technology is an enabler, technology is a tool.Cognitive skillshave to be set up taking into account the character of our zone, the character of our area, our food habits, our music, our culture. We don't expect villages to stay like villages for very long, those are not the idea. Villages will change.How do you use automation for agriculture development, how do you use drones for agriculture development, how doesone talk to the farmers?Therein lies the essence of Purvodaya and that is why, if you understand the meaning of Purvodaya, it means development in three stages. By developing Odisha, I develop Southeast Asia or South Asia, hence one develops the Global South, hence one develops the humanity which is 8 billion people.



Mr. Devendra Thakar,
CEO, Dhamra Port

Shri DevendraThakar,speaking atthis Conference,said, when we speak of connectivity, we need to speak of logistics. The primary objective of supply chain management is very simple. It is from origin to destination or from where you think the product is made and you just want to transport to the nearest point.These are the five drivers: The first driver is strong collaboration. The second is digitisation – building a common digital platform as adopted by travel aggregator. The third factor is knowledge. The fourth is visibility. The fifth – the most crucial – is that, we need to star understanding the risk behind the supply chain management as to who is operating and which are the tools that we are going to use.

Ninety per cent of the goods are always going through the ports.TheGatishakti logistics portal is playing a significant role in furthering logistical connectivity.

By 2025, we will cross 2000 million metric tons of importing and exporting goods which port would handle.We need to have this platform ready. Digital acumen is the most important thing that will drive the future.

If you see in the logistics business— whether it is maritime, road, rail, or warehouse— is the block chain technology will help. Then there is big data, the type of data that we are going to generate. This is the Performance Management system (PMS) implementation that was actually done at MundraPort, the Adanis’ flagship port. We actually made digital clones, whatever is the pilestock, cargo, vessels, berth – everything is a digital clone, and by sitting in Ahmedabad, we actually can see how operations are going. So, this is one example of digitisation. Through video analytics we can actually see the performance of each and every machine. These are the technologies which have already started working in the port and these are the technologies that will bring success because unless you know where your goods are or your transportation system is, you cannot figure it out. This tool needs scaling.



Col. Samrendra Kumar, Managing Director, MitKat Advisory

Col. Samrendra Kumar, Managing Director, MitKat Advisory, speaking on “Risks, mitigation, and connectivity”, said, Digital sounds the death of distances. Today, we are connected to the whole world. So, in Purvodaya, we have to stop thinking only about Purab; for us the world is our playfield. Firstly, geopolitics impacts connectivity. Today, if we look at the world, we are in a geopolitical recession. What we have today is unprecedented, we have two hot wars in Europe and the Middle East; we have growing hostilities between major powers, though they continue to trade; and we have trade protectionism undermining the fundamentals of the global trading system. So, apart from economic ones, geopolitical and strategic considerations always impact connectivity.

Connectivity brings opportunities, it also brings risks. As somebody from the private sector who has also worked in the Government, I would say that please do not expect the private sector to pick up the political risks. Governments will have to lead, you have to set the agenda, you have to show the direction to the private sector and then we will take it from there and pick up part of the risk but not the whole of it. The second risk is the fact that the pace of technological change and disruption is accelerating. Whether we are talking about Purvodaya, rise of the East or making DhamraPort better than MundraPort, speed and agility would be the key. The third big trend is Artificial Intelligence (AI). AI is impacting trade, commerce, society, connectivity, and as military experts would agree all the five domains of warfare. The proliferation of AI and generative AI tools is making disinformation easy to produce. AI is getting better at generating images and text and it threatens the ability to distinguish facts from fiction. We do not know the future of AI-powered disinformation and deep fakes that are being circulated. The next big thing which is a challenge as well as an opportunity is cyber security. It is disruptive and game changing. We have more than a billion malware attacks annually and 2000 attacks per minute. Damages are worth more than \$ 6 trillion annually and some of it comes from Jamtara. So, Jamtara is going to be my candidate for the cyber security university. Digital connectivity also provides opportunities for remote surveillance. You can watch the streets of London from here. So, there are a lot of opportunities that a digital playfield provides today, and it just requires imagination to be able to capitalise on it.

The region must also ride on the digital public infrastructure like the UPI, created by India. In seven weeks we had the CoWin up. Digital payments in India are more than those in the US + China x 2, and the gap is rising. Here, industry, government, academia and all multilateral agencies will have to come together, and this collaboration will be the lynchpin of success. My final risk is climate change and that represents the most serious existential crisis for our times. This region is being impacted by extreme events. Odisha has mastered the art, every year you have massive cyclones and millions of people get displaced, and the way Odisha manages, the whole world can draw lessons. So, let me just go back into history. From 3500 BC to 1700 AD, India was a quarter of global GDP and China was similar. Two hundred to 300 years is a small time in the history of a nation, so during these golden years Kalinga, Vaishali, Pataliputra and Kolkata were the seats of power. We missed a couple of revolutions but the flattening of the world, the digital revolution, the demographic dividend, the entrepreneurial energy would ensure that this region reclaims lost glory.



Mr. Partha Sarathi Panda,
Business Technology Consultant-

Mr Parthasarathi Panda, speaking in this session, focussed on bringing technology to the grassroots. Technology can mean AI, it can mean Cloud, 5G, IoT, and more. You have generative AI, autonomous vehicles, drones, you have edge AI, you have smart robots, you have Web3 i.e., the blockchain area, you have computer vision.

We need to focus on agriculture, digital farming, smart cities and smart living, logistics and smart roads. But for all of these we need some technology and three technology areas are relevant – IOT, AI, and drone technology.

Digital farming will help determine how much manure you require for growing crop. There is a company called Yara headquartered in Norway, which is a conglomerate working in 35 countries.

They focus on fertilisers, they focus on everything related to agriculture. They have an Application in which a farmer can actually go in, take a picture, maybe about 8-10 pictures of the exact thing on the ground, feed in some details and get an output for how much of nitrogen or fertilisers are needed to be added for a particular patch.

Waste management is not a great topic to be talking about but as I said, we go to the grassroots of living in the urban spaces, we go to waste management. In Sweden it comes to a situation where only 1% of the waste is left out. Everything else is recycled on an everyday basis. Even about 40% of certain amount of waste gets used for vehicle fuel. Recycling on a regular basis would be important. The third thing is logistics. Smart roads. Electric vehicles are the vehicles of the future, they will be there but they need not wait to get the charging stations. Compared to any other agency globally, in India we can predict the landfall of the storm right till the last one to two kilometres. When private sector is clued in, there are a lot of benefits that will come in jointly.



Mr. Pritam S Purkayastha, Director,
Biju Patnaik National Steel Institute

Mr Pritam S.Purkayastha, speaking in this session, said, logistics in metals and mining is relevant to Odisha and in the next decade or so, Odisha will have more than one-third of the manufacturing capacity of metals. The significance of mining and metals industry globally is, metals is the 5th most traded product globally. If you look at the volume of the trade, it is about 8% of the world trade. The Aluminium and steel industries employ around 12 million people directly and this is going to increase to 20%.

Now, the logistics in metals and mining;

why it is important is because starting from exploration and mining to processing and refining, to manufacturing and production, to storage and warehousing, to transportation to your distribution, to retailer and end-user, even for recycling and waste management (my former speaker has touched upon it), to regulatory compliance, to technology innovation, everywhere logistics is the thread which holds all links together. The cost of logistics in India, has been estimated to be around 14%. In China it is at 10%, in the US and the EU it is around 8%. In India, if you look at the multimodal spread between the various modes of transport, you will see that road occupies almost 70% and rail is just 18%, waterways is yet to make any dent and pipelines are just coming in. How much of it impacts the environment also is evident from the spread amongst the various modes of transport. The challenges of logistics in India, the high-average lead freight distance, daily distance by trucks for example is 250 km to 400 km compared to 700-800 in developed countries. Empty trucks returning adds to the high cost of freight. The high share of road transport in the metals and mining industry is due to poor first-mile connectivity, and missing rail linkages and lack of containerisation of the Indian transport system. We have got various other things which concern the environment, labour unrest and lack of attractiveness of the sector to attract skilled labour personnel. To develop a technologically-enabled, integrated, cost-effective, resilient, sustainable and trusted logistics ecosystem in the country for accelerated and inclusive growth, there needed to be a policy, which was launched in September/October 2022. If you look at the key words – integration, modernisation, optimisation, standardisation, democratisation – all these are very important towards our endeavour to reduce our logistics cost, which is very high currently at 14% to 16%, while globally in developed countries it is only around 8%. So, you can imagine the amount of cost that builds into the system because of the multimodal spread skewed unfavourably for India. We have environmental concerns as well. I have tried to put in a matrix the key technologies which can be used in logistics between the various modes and the various technologies. You can just have a glance at the focus areas – shipping, road, rail and air – primarily the main technologies like blockchain, Cloud, big data, autonomous drones and digital twins. As we say, these are the trends that we are heading for, and we have to imbibe it in our system. Optimising operations in supply chain financing would require inventory financing, dynamic discounting, technology integration, risk management and assessment and mitigation.

Skilling is one of the primary gaps. There is a talent crisis. Technical skills are required to manage climate change and we are talking about carbon markets; we need expertise for that. Sustainable resource management and circular economy principles are important. Education and training programmes have to be accelerated so that we can manage the shift to a much greener economy and the metals industry.

In the **Q&A Session**, the following questions were raised:

Can one have an investment over 1000 crore in Odisha on skill development? Another question was, the Rourkela steel plant is producing around 21 million tons of steel and there are plans to scale it up to 50 million tons. Therefore, bringing down the cost of our logistics would be important. In this context who could be the service providers who can digitalise the entire supply chain. You may be highly educated but you may not have the ability to fetch value from an employer if you are not having the relevant competence. So, this is very important.

Replying to these questions raised from the floor, the panellists said, In Odisha, there is around 1.6% of the population which is below 25 years of age. Employment opportunities are not very good and there are skill gaps. The National Education Policy (NEP) of 2020 provides an opportunity for skill upgrading. A 1000 crore investment would be a challenge. Rather than waiting for opportunities to come up within the state, people can explore avenues available, like online courses. Investment is demand and supply-driven.

Skilling is the process; it is like a finishing touch that you are giving to the already qualified students and that gap is where the concern is. Skilling, reskilling and upskilling is important, especially upgradation of skills over time. Logistics are being provided by private companies. Logistics can be leveraged if there are other industries in that area, which adds to the volume and profit



Mr Sidharth Pradhan
Trustee, The Energy Forum

At the end of the conference, **Mr. Sidharth Pradhan**, Trustee of the Energy Forum expressed immense gratitude to all the speakers for sparing their valuable time and make *Purvodaya Perspective conference* a success.

-Thank you-

Purvodaya Perspectives :
Reflections on Regional Connectivity

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