

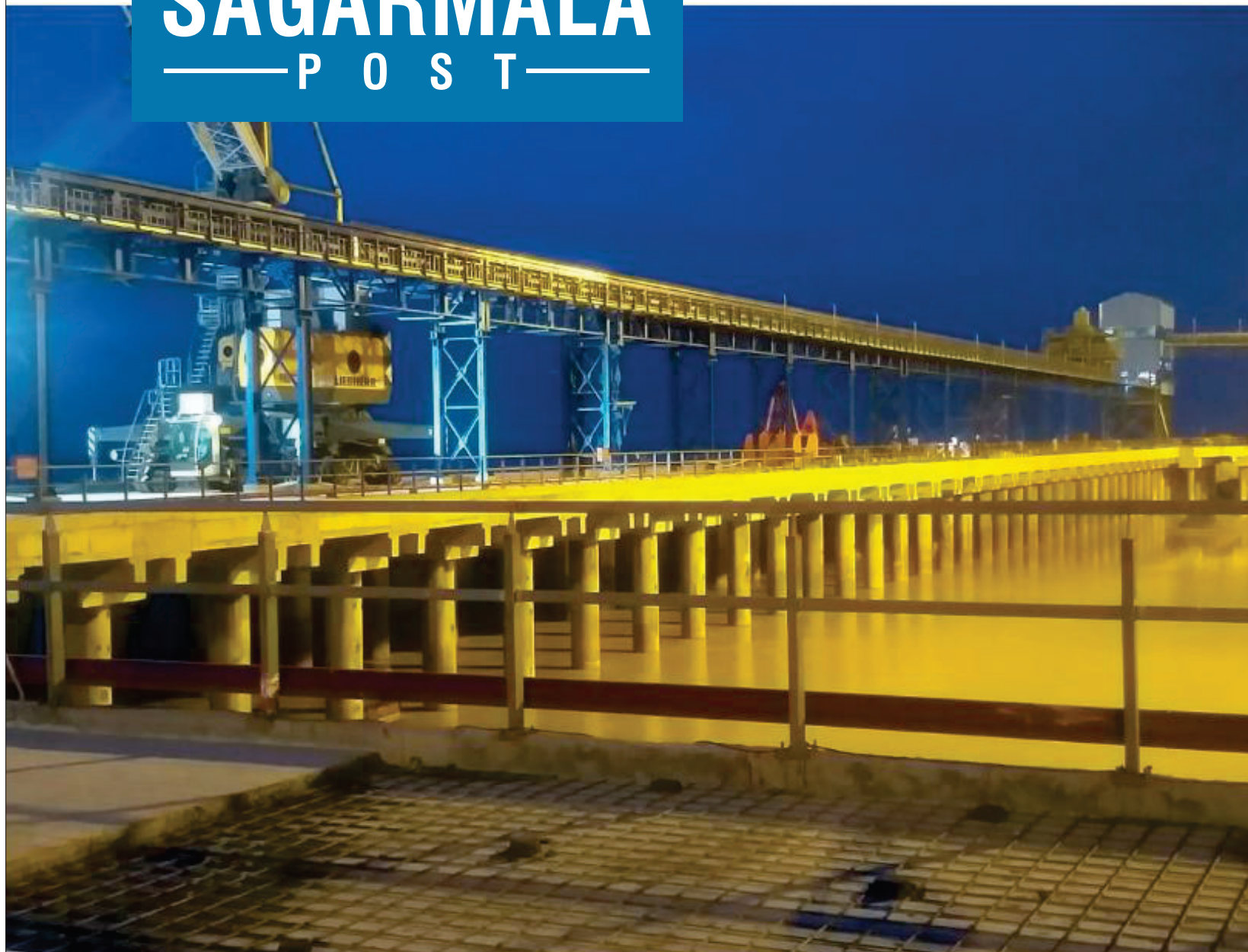
November, 2019



Ministry of Shipping
Government of India



THE SAGARMALA POST



SPOTLIGHT



EVENTS DETOUR



VIEWPOINT



MARITIME GLORY

CONTENTS

SPOTLIGHT

- Widening of harbour entrance and inauguration of North Cargo Berth -III & Coal Jetty – I at VO Chidambaranar Port
- India becomes the first country to issue BSID to its seafarers
- Joint Secretary, Sagarmala visits, JNPT –CIDCO- Allcargo Skill Development Center
- VO Chidambaranar Port adds to its “Green Energy Port Model” initiatives
- Tuticorin CFS Association gets recognized for successful execution of CoDEX at VOC Port
- Paradip Port Chairman conducts trial run of sewage treatment plants at the port
- VO Chidambaranar Port to come up with a Coastal Employment Unit
- Secondary Freight Subsidy for Movement of Fertiliser Cargo
- Maritime Sector Seeks Greater Participation of women
- Inauguration of Sahibganj Multi-Modal Terminal to ease cargo movement to India’s North East

EVENTS DETOUR

- Shri Mansukh Mandaviya visits Mormugao Port Trust Officials
- Kolkata Port awards the Ideabox Challenge winners and participants
- Signing of SOP between Bangladesh & India to open 8 routes to North East through Bangladesh
- Ministry of Shipping organizes 17th meeting of Maritime States Development Council

- DG Shipping celebrates its 70th Foundation Day
- Joint meeting held between IPA and NTCPWC
- Shri Mansukh Mandaviya inaugurates seminar on Furniture Park at Deendayal Port Trust

VIEWPOINT

- Interview of Joint Secretary, Sagarmala Programme
- Jal Marg Vikas Project: A Potential Game Changer for India’s Logistics

MARITIME GLORY

- A look at how the Mauryas excelled in sea-borne foreign trade

Published by the Editorial Board of The Sagarmala Post

Disclaimer: The content in the newsletter is provided for information purpose only. No legal liability or other responsibility is accepted by or on behalf of the Ministry of Shipping for any errors, omissions or statement in the newsletter.





From the **SECRETARY'S DESK**



The Sagarmala Post is the Shipping Ministry's bi-monthly newsletter that shares news, views and updates of the developments in the maritime world. I have pleasure in releasing the November edition of the newsletter.

During the period of this edition of the newsletter, fructification of several projects undertaken under the Ministry's flagship programme, Sagarmala, has taken place. The pace at which the Ministry's vision for 2025, being rolled out under the four pillars of the programme, is quite satisfactory. Working towards making our ports 3500 MTPA capable and the development around the other four pillars will revitalize and rejuvenate the logistics sector of the country. Enhancement of port connectivity through roads and rail and development along the waterways will not only reduce the logistics cost substantially, but will also work towards making India an environmentally cleaner place.

The Honourable Prime Minister, Shri Narendra Modi, inaugurated the Phase I of the Sahibganj multimodal terminal along the NW 1 on September 12, 2019. Completed in record time, the terminal will provide access to the industrial belt along NW1 as also to the mineral rich Jharkhand region enabling cleaner, faster and cheaper transportation of goods to ports. The terminal will also benefit land-locked Nepal in movement of its cargo.

Enhancing port infrastructure is a long drawn process due to the intricacies of construction in the sea. Therefore, despite it being slow, projects with longer gestation periods are fructifying now. VO Chidambaranar Port has taken giant steps in improving its infrastructure by adding a new 260 m long North Coal berth and a new coal jetty, both adding capacity. The port has also undertaken capital dredging to make the port capable of handling vessels with 14.5 metres draft. The port has also undertaken green energy projects to generate 6000 KWh of alternate electricity. JNPT in collaboration with CIDCO and M/s All Cargo have established a skill development centre in Uran to make our youth skill trained for the maritime logistics industry.

Paradip port has added two large sewage treatment plants in its efforts to not just clean the port of the sewage but also to generate manure and use treated water instead of fresh water in the port premises. The other major ports have similar projects underway that would fructify soon.

An SOP has been signed between the Governments of Bangladesh and India which will provide access to ports of Chattogram and Mongla in Bangladesh for movement of cargo to the North Eastern states of Assam, Meghalaya and Tripura thus reducing time and consequent costs.

Modern technology is being rapidly introduced in the ports not just in physical operations but also in the backend. Container Digital Exchange System (CoDEX) is a global system developed for safer and timely movement of container cargo by enabling live tracking of the consignment by ports, shipping lines, agents, consigners and consignees. VO Chidambaranar Port is amongst the first to implement the system. DG Shipping has introduced Biometric Seafarer Identification Cards (BSID) for all Indian nationals operating at sea. The card contains all personal and professional data and identification features like thumb prints and iris scans. NTCWPC, the recently opened centre in IIT Madras has begun conducting training with a view to improve processes and best practices in ports. The globally acclaimed CIRIA manual was introduced to officials of Chennai Port.

Several steps are being taken to improve lives of the coastal communities, they being the important support system for development around the ports. Greater industrialization of these areas will bring relief to long logistics trails through which cargo travels from the hinterland to ports. Towards this, the Chidambaranar port has earmarked large tracts of land which will be given out to industry leaders who desire to set up their facilities.

September 26, 2019 was globally celebrated as the "World Environment Day". The theme for the year long celebrations was "Empowering Women in the Maritime Industry". The Ministry has taken several steps to encourage women and, thus, boost their employment to take on seafaring jobs. An increasing number of women is being employed in our ports and maritime boards.

Overall, the two months under review have witnessed successful completion of some projects, initiation of several others and many others for which necessary impetus and inputs are regularly provided.

GOPAL KRISHNA, IAS
Secretary, Ministry of Shipping



Widening of harbour entrance and inauguration of North Cargo Berth-III & Coal Jetty-I at VO Chidambaranar Port



Shri Mansukh Mandaviya with VO Chidambaranar Port officials

Shri Mansukh Mandaviya, Minister of State for Shipping (I/c) and Chemicals & Fertilizers inaugurated the North Cargo Berth – III and Coal Jetty – I in addition to laying the foundation stone for the widening of the harbour entrance at VO Chidambaranar Port on August 23, 2019. Shri T.K. Ramachandran, IAS, Chairman, VO Chidambaranar Port was present on the occasion.

The North Cargo Berth, capable of handling one lakh DWT vessels with a length of 260 metres, cost around Rs. 36.52 crores to build. The berth is equipped to handle dry bulk cargo using shore unloaders / HMC and conveyors for cargo evacuation and handles 10.22 MTPA of cargo. The new Coal Jetty that has been constructed to replace the old will cost roughly Rs. 50.12 crores. The handling capacity of the new port is more compared to the old port and will allow vessel handling of up to 14.50 metres with an added provision for facilitating shore unloaders with individual capacities of 2000 TPH and a system with a capacity of 4000 TPH.

India becomes the first country to issue BSID to its seafarers

In another event that marked the gradual progress of the Indian shipping sector, India became the first country in the world to issue a Biometric Seafarer Identity Document (BSID) to its seafarers. At the launch event held on August 28, 2019, at New Delhi, Shri Mansukh Mandaviya, Minister of State for Shipping (I/c) and Chemicals & Fertilizers handed over the new BSID cards to five Indian seafarers.



Shri Mansukh Mandaviya hands over BSID to seafarers

The BSID that contains the facial biometric data of seafarers, complete with modern security features, is an advancement over and above the two-finger or iris-based biometric data. The added security layer, owing to the embedded biometric chip, will ensure better identification of the seafarers while ensuring their dignity and privacy. The new card is in conformation with Convention No. 185 of the International Labour Organisation (ILO) on BSID, that had been ratified by the Indian government in October 2015.

The issue of these cards would help Indian seafarers who have grown in strength from 1,54,349 in 2017 to 2,08,799 in 2019. The record of each SID issued will be included in the national database and its related information made internationally accessible. This not only facilitates the movement of the seafarers but also helps in their job-seeking process as the card would enable their identification from any place in the world.



Joint Secretary, Sagarmala, visits JNPT –CIDCO- Allcargo Skill Development Center



Shri Kailash Kumar Aggarwal at the JNPT – CIDCO – Allcargo Skill Development Centre

Shri Kailash Kumar Aggarwal Joint Secretary, Sagarmala, Ministry of Shipping visited the JNPT – CIDCO – Allcargo Multi Skill Development Centre (MSDC) in Uran on August 17, 2019. The aim of the visit was to obtain an overview of the centre after its establishment in March 2019.

The JNPT – CIDCO – Allcargo Multi Skill Development Centre has been setup as a tripartite training facility in Uran, Maharashtra as a Pradhan Mantri Kaushal Kendra (PMKK) to impart industry-centric training and job-skilling initiatives. The centre prepares India's young human resource as a skilled workforce for the maritime logistics industry.

While interacting with the students at the centre, Shri Aggarwal highlighted the benefits of imbibing skills. He said that the government is focused on imparting skills to the youth to increase their employability and to improve the quality of output in the process so that our industries are competitive world over. It was thus important for students to pursue such courses and avail the opportunities available in the market, thereby, gaining necessary experience.

VO Chidambaranar Port adds to its “Green Energy Port Model” initiatives

In a massive effort to tap renewable energy sources and leverage its benefits, the VO Chidambaranar Port has decided to install grid-connected 25MW onshore and offshore wind farms. The grid put in place at an estimated cost of Rs. 125 crores will ensure substantial energy savings through the adoption of new technologies and optimum use of renewable energy sources.

The port has commissioned the National Institute of Wind Energy (NIWE) to study various aspects of wind farms and recommend suitable equipment.

To reduce its carbon footprint further, the port has already established 500KW rooftop solar power plants with an estimated monthly generation of about 5800 KWh units at a total cost of Rs. 4.78 crores. Additionally, the Tamil Nadu Energy Development Agency (TEDA), Chennai has been directed to install a 140 KW solar rooftop power plant at multiple port locations by the first quarter of 2020. The expected power generation every year would be two lakh units.



Tuticorin CFS Association gets recognized for successful execution of CoDEX at VOC Port



Tuticorin CFS Association recognised for installation of CoDEX at VOC Port

The Tuticorin CFS Association was conferred the “International Trade Facilitation Innovation Award” for the successful installation of Container Digital Exchange system (CoDEX) at the VO Chidambaranar Port at a function organised by Asia Pacific Trade Facilitation Forum (APTFF) on September 18, 2019 at New Delhi. The event was organised by the Asian Development Bank (ADB), United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in partnership with the United Nations Conference on Trade and Development (UNCTAD), World Customs Organization (WCO) and World Trade Organization (WTO).

CoDEX has been designed and implemented to ensure smooth movement of containers from the Container Freight Stations (CFS) or Inland Container Depots (ICDs) to the VOC Port. The platform used by the mainline operators, exporters, customs and container terminals of the port works on online real-time data that gets uploaded on the platform, thus, enabling the tracking of the shipment from the point of entry at the port to the shipment loading centre. The CoDEX platform is also now available as a mobile application to allow wider access to real-time information.

Paradip Port Chairman conducts trial run of sewage treatment plants at the port



Paradip Port Chairman at the port's sewage treatment facility

In sync with Indians' determination to keep their environment clean, the Paradip Port has conducted trials on two sewage treatment plants, each with a capacity of 4.5 million litres daily. These two plants are state-of-the-art facilities and have been constructed at an estimated cost of nearly Rs. 22 crores.



Use of these two plants would not only allow conversion of the collected sewage to manure but also curate the wastewater for gardening and sprinkling purposes. This is the first stage of the integrated sanitation project that aims at upgrading the overall sanitation process through proper treatment of the discharge collected. These two plants are expected to be fully operational by December 2019.



VO Chidambaranar Port to come up with a Coastal Employment Unit

The VO Chidambaranar Port carried out a master plan study to develop a coastal employment unit (CEU) in the region. The development of the CEU is in line with port-led industrialization, an important pillar of the Sagarmala Programme. The port, in sync with the government's idea to propel industrial development and push economic growth, has identified 920 acres of land for CEU development while the effective area that would be leased to business enterprises would be 702 acres.



The purpose behind developing the CEU is to identify potential economic zones, thereby, creating increased employment opportunities to the communities living along the coasts. Also, the focus is on developing an industrial zone with its basis in quality infrastructure including deep-draught ports, better rail-road connectivity to the hinterland, ensuring air connectivity, etc.

A fillip to Indian industries

The proximity of the manufacturing industries to the sea allows greater scope for backward linkages to the hinterland through a strong infrastructure, thus, propelling the country's production sector.

The proposed CEU will provide zones for industrial activities, logistics, marine, warehousing and commercial activities apart from support services. Utilities and facilities spaces (common facility centre/administrative building, power

supply network, water supply system, STP, street lighting, drainage, waste management, etc.) will also be provided. With this CEU in place, the port will be able to diversify its cargo portfolio apart from generating an additional cargo capacity of around one million tonnes per annum.

To meet the growing needs of the EXIM community, numerous expansion projects are now being planned. This would not only attract large mainline vessels, but ensure that the port emerges as major transshipment hub of South India.

The current capacity of the terminal is expected to grow to 5.5 MMTPA after capacity expansion in Phase II by the PPP model. Around 335 acres of land has been designated for the construction of a freight village in continuity with the terminal.

Secondary freight subsidy for movement of fertiliser cargo

The Ministries of Shipping and Chemicals and Fertiliser are jointly promoting the movement of fertilizers through coastal shipping and inland waterways. A major policy shift put in place provides a secondary freight subsidy for movement of subsidized fertiliser using coastal shipping and/or inland waterways. The policy intervention undertaken by the Ministry of Chemicals and Fertiliser is in line with the initiatives of the Government to promote the use of coastal shipping and inland waterways, harness the advantages to the environment by using alternate and multi-modal transportation.



Maritime Sector Promotes Greater Participation of Women



Equality of women is a concept that is not limited to books any more. Shipping has been predominantly a male-dominated industry and women occupy only a minor percentage of the total maritime workforce. In line with the IMO's approach "Training-Visibility-Recognition", the Ministry of Shipping has taken concerted steps towards increasing women workforce in key maritime roles.

According to the United Nations' Sustainable Development Goals related to Gender Equality, 2019-20 has been earmarked by the International Maritime Organization (IMO) as the year for empowering women in the maritime community. Towards this, several member states the world over have initiated measures to raise awareness of the importance of gender equality and highlight the contribution of women in the maritime sector. Economies across the world stand to benefit by empowering women as it not only spurs growth and development but also benefits the global maritime community in the drive towards safe, secure, clean and sustainable shipping.

Indian Maritime Sector Opens its Doors to Women

Shipping has historically been a male-dominated industry not just due to the nature of work involved but also the work environment in the ship, and the long voyages undertaken, apart from the tough living conditions on board. The Secretary General of the IMO, on the World Maritime Day 2019 observed on September 26 this year, said how empowering women is now an unavoidable necessity and urged member states to address deep-seated structural, institutional and cultural barriers. A huge talent pool of women is available for the maritime community to harness as gender-diverse teams are deemed more productive than the male-dominated ones. Besides, gender diverse workplaces promoted better job satisfaction, employee engagement and retention. In support of the UN initiative, India opened the sector to women in the last decade of the 20th century, joining some select Scandinavian and European countries and the US.

Training-Visibility-Recognition

Apart from creating awareness, the IMO now aims to direct the member states to enable women to train alongside men in their maritime institutes and acquire the high-level competence that the maritime industry demands. This would be done by encouraging women to attend high-level technical training in the maritime sector in developing countries. The idea is to create an environment in which women are identified and selected for career development opportunities in maritime administrations, ports and maritime training institutes.





Shri Mansukh Mandaviya with women seafarers

Addressing the country on the World Maritime Day 2019, Shri Mansukh Mandaviya, Minister of State for Shipping (I/c) and Chemicals & Fertilizers spoke of the respect and empowerment the Indian culture had accorded to women. Extending greetings to all women seafarers, he said they were showing equal enthusiasm and bravery in serving the nation.

India has taken substantial steps to facilitate the entry of women in the maritime field in various capacities. India took the lead in opening this male-dominated bastion by allowing women to train for both deck and engineering roles onboard ships. With sheer perseverance and defying societal pressures, women like Captain Radhika Menon, who made a humble beginning as the first woman Radio Officer onboard a ship has made it to the top by becoming the first lady to command oil tankers and also to receive the IMO Award for "Exceptional Bravery at Sea" in 2016. Many others like Ms Sonali Banerjee, the first woman engineer in the maritime fleet and Ms Reshma Naha, the first woman Hooghly pilot, also succeeded in reliving their passion for working at the sea. Apart from the seafaring profession taken up by dozens of women following in the footsteps of the pioneers, many women support the vast and diverse field of maritime operations. Operational and administrative roles in Indian ports and maritime boards have been performed by women from time immemorial. Innumerable maritime operations including calling out ships at "VTMS" or "Harbour controls", directing pilots and tugs to berth and unberth ships, managing traffic, supporting several administrative functions while working at the backend of the maritime operations, etc. are being successfully and efficiently performed by women.

The maritime world also encompasses the Indian Navy, which has been giving opportunities to women to join the service over nearly three decades. Lieutenant Shubhangi Swaroop recently broke the barrier by emerging as the first woman pilot to fly at sea. The maritime world will recall the "Navika Sagar Parikrama", a long and arduous 25 days' voyage, undertaken by six women officers of the Indian Navy who successfully circumnavigated the world in a small sailing boat, INSV Tarini.



Inauguration of Sahibganj Multi-Modal Terminal to ease cargo movement to India's North East

At an extremely expansive location with the Ganga river as a backdrop, Shri Narendra Modi, Prime Minister of India inaugurated India's second riverine multi-modal terminal at Sahibganj in Jharkhand on September 12, 2019. The inauguration of the state-of-the-art terminal reinforces the government's focus to extensively optimise and promote river transportation to reduce the country's logistics costs.

Constructed in less than two years at a cost of Rs. 290 Cr in Phase I, this second of the three multi-modal terminals has been built on the NW-1 under the Jal Marg Vikas Project (JMVP) in record time.



Hon'ble Prime Minister Shri Narendra Modi inaugurating Sahibganj Multi-Modal Terminal



The inauguration of this terminal came on the heels of the Varanasi multimodal terminal inaugurated in November 2018. The cargo handling capacity of the sahibganj terminal is about 30 lakh tonnes every year.

The opening of the Sahibganj multi-modal terminal will ease Indo-Nepal cargo connectivity through NW 1 while aiding the industrialization of Jharkhand and adjoining Bihar. Additionally, the convergence of road-rail-river transport at Sahibganj through the new multi-modal terminal will connect this part of the hinterland to Kolkata, Haldia and further to the Bay of Bengal. It will also ensure connectivity to the North-Eastern states through Bangladesh via the river-sea route.

In terms of trade, the route will facilitate transportation of coal from the local mines in the Rajmahal area to various thermal power plants located along NW 1, thus, reducing truck and rail movement for transportation of cargo. Other commodities expected to be transported through the terminal include stone chips, fertilisers, cement and sugar. Roughly 600 people in the region are expected to be directly employed through the terminal while employing nearly 3000 people indirectly.

The current capacity of the terminal is expected to grow to 5.5 MMTPA after capacity expansion in Phase II by the PPP model. Around 335 acres of land has been designated for the construction of a freight village, contiguous to the terminal.



Hon'ble Prime Minister Sh. Narendra Modi with Jharkhand Governor Smt. Droupadi Murmu & Chief Minister Shri Raghubar Das at the inauguration of Sahibganj Multi-Modal Terminal



Shri Mansukh Mandaviya plants a sapling at the Mormugao Port

Shri Mansukh Mandaviya visits Mormugao Port Trust

Shri Mansukh Mandaviya, Minister of State for Shipping (I/c) and Chemicals & Fertilizers paid an acquaintance visit to the Mormugao Port officials on September 26, 2019.

The Minister visited the wharf area, finger berths, POL berth, JSW and Adani areas, WISL area and the cruise berth terminal. During the visit, officials appraised the Minister about the working of the port and the functions of its various parts.

To ensure a better understanding of the port's working, the Minister was taken on a cruise on the tug "M.V. Ocean Spirit" and shown details of vessel handling at the various berths. Subsequently, discussions were held with the port HODs and the Chairman regarding the myriad port operations in addition to the cruise terminal complex proposed to be constructed at Berths 1 and 2.



Kolkata Port awards the Ideabox Challenge winners and participants



Ideabox Challenge winners awarded at Kolkata Port Trust

With a view to seek innovative ideas and out-of-the-box solutions to improve existing processes, increase revenue, boost tourism and implement a green energy model, KoPT launched the Ideabox Challenge. Over 200 ideas, covering various aspects of port operations were received of which the top three winners were awarded a cash prize of Rs. 50,000 each while six consolation prizes were also given out to encourage those who had participated in the challenge.

The Kolkata Port Trust organised an award ceremony for the winners who were felicitated by Shri Gopal Krishna, IAS, Secretary, Ministry of Shipping, in presence of Shri Vinit Kumar, IRSEE, Chairman, Kolkata Port Trust.

Award winning ideas included increased utilisation of the land under dilapidated quarters, construction of rooftop cafes on riverfront warehouses and improvement of machinery of the Lock Gates at Netaji Subhash Dock (NSD) among others. The idea that garnered the maximum attention was to hire amphibious boats as pilot launches for maritime operations, thus, not only improving the pilot transit time but also aid in transit of the pilots from the shore to the ship and vice versa.

Signing of SOP between Bangladesh & India to open 8 routes to North East through Bangladesh



Shri Mansukh Mandaviya addressing the media about the benefits of the SOP between India & Bangladesh

Shri Mansukh Mandaviya, Minister of State for Shipping (I/c) and Chemicals & Fertilizers recalled how the Prime Minister Shri Narendra Modi's foreign policy initiative concerning the use of Chattogram and Mongla Ports in Bangladesh for cargo movement to and from India will ensure lower costs of shipments to and from the country's Northeastern states in addition to reducing time and distance for transport of goods.

A Standard Operating Procedure (SOP) was signed and exchanged between India and Bangladesh during the official visit of HE Sheikh Hasina, Prime Minister, People's Republic of Bangladesh on October 05, 2019. According to the agreement, Bangladesh will allow India the use of both Chattogram and Mongla ports for cargo movement through its territory via waterways, rail, road or multi-modal transport. The Agreement includes eight routes to enable access of North East Region through Bangladesh. These include:

- Chattogram/Mongla Port to Agartala (Tripura) via Akhura and vice versa
- Chattogram/Mongla Port to Dawki (Meghalaya) via Tamabil and vice versa
- Chattogram/Mongla Port to Sutarkandi (Assam) via Sheola and vice versa
- Chattogram/Mongla Port to Srimantpur (Tripura) via Bibirbazar and vice versa

As per the agreement, the three landlocked Indian states, viz.,

Assam, Meghalaya and Tripura will have access to open sea trade routes from Chattogram and Mongla ports through the Indian ports. Currently, cargo transportation through the Indo Bangladesh Protocol (IBP) waterway route from Kolkata/Haldia to the North East is limited to 2000 tonne vessels. With this SOP in place, larger ships destined for North East can be plied for carrying cargo at Chattogram and Mongla ports, thereby, increasing trade volumes and reducing logistic costs.

While imports to North East would include construction material, iron & steel, fertilizer, consumer goods, POL, cement, etc., exports from the North East to various parts of India would contain food grains, fruits, organic products, tea, fish, jute, etc. through the Chattogram and Mongla ports.

Agreed routes



Ministry of Shipping organizes 17th meeting of Maritime States Development Council



Shri Mansukh Mandaviya at the Maritime States Development Council meeting at New Delhi

The Ministry of Shipping organized the 17th meeting of the Maritime States Development Council (MSDC) at New Delhi on October 15, 2019. During the meeting arranged to develop a National Grid for ports based on synergy between India's major and minor ports, Shri Mansukh Mandaviya, Minister of State for Shipping (I/c) and Chemicals & Fertilizers called for revival of the ports that are not yet operational. Shri Mandaviya said, "There are 204 minor ports in the country, of which only 44 are currently functional. All these ports have been centres of maritime activity in the past, and if revived, they can once again become important centres of sea trade. The Government is looking at developing synergy between the major and minor ports so that together they can bring port-led development in the country."

Emphasizing that the development plan would be ready within six months, an extensive study would be carried out for each port's revival by identifying the specific cargo associated with it along with the downstream industry. The states would have access to the study findings prepared by the Centre to enable the development of non-functional minor ports and ensure their proper functioning.

High logistics costs have resulted in an increased focus on coastal shipping and inland waterways sector. The Ministry is now planning the expansion of port capacity through the implementation of well-conceived infrastructure development projects, increasing the efficiency of port operations through

the implementation of a package of recommendations to cut time and cost, digitization of processes to reduce and finally eliminate human interface and to strongly address environment-related concerns. Further, officials attending the meet discussed issues like developing common and comprehensive guidelines for inland waterways barges to ensure seamless movement of barges of different states in coastal waters.

The issue of port security was also discussed. Shri Mandaviya ensured international levels of security at every port in the country.



DG Shipping celebrates its 70th Foundation Day



Shri Mansukh Mandaviya at the 70th Foundation Day of the Directorate General of Shipping

The Directorate General of Shipping celebrated its 70th Foundation Day on September 03, 2019 amidst much celebration at an event in Mumbai. At the event organized to acknowledge its contributions to the shipping sector, Shri Mansukh Mandaviya, Minister of State for Shipping (I/c) and Chemicals & Fertilizers along with other officials discussed ways to encourage safe, secure and pollution-free shipping.

Trainee cadets, including women cadets, representing maritime training institutions from the four regions of the country marched past the VIP at a parade held in his honour. Also on parade were a contingent each of the Indian Navy and the Indian Coast Guard, symbolizing the close co-operation between DG Shipping, Indian Navy and the Coast Guard.



Joint meeting held between IPA and NTCPWC



Training programme on the CIRIA manual at the joint meeting between IPA & NTCPWC

A two-day training on the CIRIA manual was scheduled on September 12-13, 2019 at IIT Madras. The training programme inaugurated by Shri P. Ravindran, Chairman, Chennai Port was presided over by Prof Ravindra Getu, Dean ICSR, IIT Madras. The focus of the training programme was on issues and gaps on current practices in port management. Additionally, discussions were held regarding the CIRIA manual and guidelines for its use, benefits and best practices.

Lectures were held on the above point as invited speakers and experts from the Dredging Corporation of India and Department of Ocean Engineering, IIT Madras presented their opinions during the session. The participants were also introduced to the NTCPWC developed standardized Excel tool that is currently being used inhouse. The web-based tool will be further developed for ports use in ports.

The programme members received positive feedback as they identified the need for more such training sessions and discussions surrounding dredging estimates and operations in future.





Shri Mansukh Mandaviya addressing Deendayal Port officials at SIPC, Gandhidham

Shri Mansukh Mandaviya inaugurates seminar on Furniture Park at Deendayal Port Trust

Shri Mansukh Mandaviya, Minister of State for Shipping (I/c) and Chemicals & Fertilizers, inaugurated a seminar titled "Investment Opportunities for Furniture Park" at SIPC, Gandhidham on October 05, 2019. Speaking to the officials attending the conference, Mandaviya said that the proposed furniture park, when completed, would open the door to opportunities for the development of furniture and associated industries. The proposed park would be spread over 100 acres of land and is a part of the "Smart Industrial Port City (SIPC)" project planned over an area of 1,430 acres in proximity to the port.

The SIPC project is based on the port's three-pronged vision of connectivity, sustainability and identity. Designed to boost economic growth, the completion of the project is expected to usher in employment opportunities while supporting the port's aim to provide holistic living to the people living at or near the port.

The seminar was graced by domestic and international investors, industry experts in addition to port officials who highlighted the multiple opportunities available to the local population post the completion of the park project.





Sagarmala: The Mainstay of Maritime Sector in India

The Sagarmala Programme is the flagship programme of the Ministry of Shipping. As the name suggests, this programme is all about developing the ports to ease transportation of cargo. However, a tête-à-tête with Kailash Kumar Aggarwal, Joint Secretary, Sagarmala Programme reveals how this programme is more about productivity improvement as the Ministry aims to modernize the existing ports, enhance capacities, improve connectivity to ports and ease of doing business at the ports. Additionally, numerous projects are being designed and implemented to improve the lives of coastal communities through necessary training and employment opportunities.

The Sagarmala Programme initiated by the Government envisages port-centric development for which a large outlay has been earmarked. Could you kindly elaborate on the projects that are currently in progress under the Sagarmala Programme ?

Till date, 574 projects have been identified under the Sagarmala Programme that are expected to mobilize roughly Rs. 6.01 lakhs crores of infrastructure investment under the four identified pillars - Port Modernization and New Port Development, Port Connectivity Enhancement, Port Led Industrialization and Coastal Community Development. Out of the 574 projects identified so far, 121 projects (Cost: Rs. 30, 228 crores) have been completed and 372 projects (Cost: Rs. 416,810 crores) are under various stages of implementation. In the year 2019-20, 103 projects (Cost: Rs. 145,940 crores) are expected to be completed.

Promotion of Coastal Shipping is one of top most priority of the Ministry of Shipping under the Sagarmala Programme. The Government wants to increase the modal share of coastal shipping from six per cent to 12 per cent by 2025 as this being is the most economical and environment friendly mode of transport. To achieve the targets, the Government has undertaken several initiatives to promote coastal shipping in the country including relaxation for licensing, financial assistance for creation of infrastructure to promote movement of cargo & passengers by sea or National Waterways. A minimum discount of 40 per cent is offered by major ports on vessel and cargo related charges to coastal vessels, GST has been reduced on bunker fuel from 18 per cent to five per cent, etc. Pursuant to the above, India has witnessed a steady growth of 11.3 per cent of cargo movement on coastal routes from 2015-16 to 2018-19. In 2018-19, it had handled 120 MTPA of coastal cargo compared to 94.5 MTPA in 2016-17 (14% increase) and is expected to reach 250 MTPA by 2025.

Besides, Government of India has identified 106 inland waterways to be National Waterways (NWs) apart from the existing five NWs. Out of total 111 NWs, work at 13 NWs have been taken up and studies at others are underway.

The Ministry has also come up with the Coastal Berth Scheme that has been extended up to March 2020 and its scope has been expanded to cover the cost of preparation of the Detailed Project Report (DPR) and capital dredging at the major ports. This scheme was also integrated into the Sagarmala Programme. The construction of berth or jetties



for passenger ferries and hovercrafts or seaplanes may include construction of terminal building and allied facilities. Financial assistance to be given up to 50 per cent of the total project cost or maximum funding limit, whichever is lower. This may be relaxed for Union Territories where other sources of funding are not available. The balance expenditure will be incurred by the respective Ports or concerned State Governments (including State Maritime Boards) from their own resources.

Can you walk us through the pillar-wise development that is taking place under the Sagarmala Programme?

Port Modernization:

Since about more than 90 per cent of India's trade by volume is conducted via the country's maritime route, there is a continuous need to develop India's ports and trade-related infrastructure to accelerate growth in the manufacturing industry and to assist the 'Make in India' initiative. India has 12 major ports and approximately 200 non-major ports administered by Central and State Governments, respectively.

As per the studies conducted under the Sagarmala Programme, it is expected that by 2025, cargo traffic at Indian ports will be approximately 2500 MMTPA while the current cargo handling capacity of Indian ports is about 1800 MMTPA. A roadmap has been prepared for increasing the Indian port capacity to 2500 MMTPA by 2025 to cater to the growing traffic. This includes port operational modernization, capacity expansion of existing ports and new port development.

A total of 236 projects have been identified to enhance the port capacities and efficiencies of port operations worth Rs. 1.18 lakhs crores. Of these, 68 projects (Cost: Rs. 22,551 crores) have already been completed and 70 projects (Cost: Rs. 36,998 crores) are under implementation.

A total of 39 projects (Cost: Rs. 1,569 crores) have been sanctioned under the Coastal Berth Scheme for total with financial assistance of Rs. 637 crores and Rs. 351 crores have been released.

Port Connectivity:

Connectivity is one of the critical enablers for ports and the end-to-end effectiveness of the logistics system drives competitiveness for the maritime industry as well. With

infusion of new technology and capacity building, the cumulative or total capacity available at ports can match demand but will not be able to handle additional traffic if the evacuation to and from the port is restricted. It is, therefore, important that connectivity of major ports with the hinterland is augmented to meet the present requirements as also of projected increase in traffic.

India's hinterland connectivity is mainly based on surface transport, i.e., road and rail, wherein, domestic waterways (coastal shipping and inland waterways) plays a very limited role. Pipelines are predominantly used for transporting crude oil, refined petroleum products and natural gas.

Smooth connectivity to ports is even more important as the cargo generating centres are mainly in the hinterland. The long lead distance increases the logistics cost and time variability within which the cargo can be delivered.

Under Sagarmala Programme, the endeavour is to provide enhanced connectivity between the ports and the domestic production or consumption centres. Till date, more than 7,000 km of road and 8,348 km of rail network have been planned.

A total of 235 projects (Cost: Rs. 235,528 crores) has been identified to improve the connectivity to Indian ports. Of these, 35 projects (Cost: Rs. 5,803 crores) have already been completed and 94 projects (Cost: Rs. 119,360 crores) are under progress.

Fifteen Multi-Modal Logistics Parks (MMLPs) are being developed at a cost of around Rs. 3,703 crores. Out of these 15 MMLPs, four MMLPs (Cost: Rs. 689 crores) have been implemented and five MMLPs (Cost: Rs. 1,481 crores) are under implementation.

Port-led Industrialization:

The vision of the Sagarmala Programme is to reduce logistics cost and time for the movement of EXIM and domestic cargo. Development of port-proximate industrial capacities near the coast is a step in this direction. In this regard, the concepts of Coastal Economic Zones (CEZs), Coastal Economic Units (CEUs), port-linked Industrial & Maritime Clusters and Smart Industrial Port Cities have been introduced.

A total 35 projects (Cost: Rs. 240,234 crores) have been identified for port-led industrialisation. Of these 35 projects, two projects (Cost: Rs. 512 crores) have been completed and 17 projects (Cost: Rs. 151,745 crores) are under implementation.



For promoting port-led industrialisation, 30 potential port-linked industrial clusters across three sectors - energy, materials and discrete manufacturing have been identified. Further, SEZ at JNPT, Smart Industrial Port City (SIPC) at Paradip and Kandla are under implementation and Coastal Employment Units (CEUs) at VO Chidambaranar Port and Kamarajar Port are under development.

Coastal Community Development:

Under the Sagarmala Programme, an integrated approach is being adopted for improvement in quality of life with focus on skill building and training, upgrading of technology in traditional professions, specific and time bound action plan for improving physical and social infrastructure in collaboration with the coastal states.

A total of 68 projects (Cost: Rs. 7,369 crores) have been identified for coastal community development. Of these, 16 projects (Cost: Rs. 1362 crores) have been completed and 20 projects (Cost: Rs. 945 crores) are under implementation.

Also, coastal shipping and inland waterways transport (IWT) is being treated as the fifth and emerging pillar by the Ministry that will entail a sustainable and eco-friendly mode of transport. A potential of additional 250 MMTPA by 2025 has been identified under this pillar and the focus is to introduce various initiatives to promote this mode. These include:

- Relaxation in licensing for foreign flag vessels to transport fertilisers, agricultural products and EXIM containers for trans-shipment in India on coastal routes under Sections 406 and 407 of the Merchant Shipping Act
- Licensing relaxation for special vessels such as RO-RO, RO-pax, ODC, etc. has been extended till 2020
- Priority berthing policy for coastal vessels has been notified to reduce turnaround time for coastal vessels and improve their utilisation
- A discount of minimum 40 per cent is offered by the majorports on vessel and cargo-related charges to vessels carrying coastal cargo. For the case of Ro-Ro car carriers, this discount is extended to the tune of 80 per cent
- GST Reduced on bunker fuel from 18 per cent to five percent.
- Grant-in-aid assistance to develop berths and associated infrastructure including dredging, break-water creation and mechanization under the coastal berth scheme has been extended till 2020.

Pursuant to the above, India has witnessed a steady growth of 11.3 per cent of cargo movement on coastal routes from 2015-16 to 2018-19. In 2018-19, it had handled 120 MTPA

of coastal cargo compared to 94.5 MTPA in 2016-17 and is expected to reach 250 MTPA by 2025.

To unleash the optimal potential of the sector, the Ministry of Shipping has undertaken a perspective plan on coastal shipping in association with Asian Development Bank in July 2019 that will form the basis of infrastructure development over the next decade.

The adoption of coastal shipping has been beneficial to the environment as it is less polluting e.g., Gogha Dahej Ro-Ro ferry service is expected to save logistics cost with projected with an annual fuel saving of 15,202 kilo litres. It would help in environmental sustainability by reducing CO2 emission of about 48,800 MT per annum.

Coastal Community Development has been envisaged as an important pillar of the programme. What initiatives have been taken in this regard Could you also highlight details of the upcoming steps being taken in this regard?

Approximately 18 per cent of India's population lives in the 72 coastal districts that comprise 12 per cent of India's mainland. Development of coastal communities through marine sector related activities like fisheries, maritime tourism and corresponding skill development is an essential objective of the Sagarmala Programme. Development of cruise tourism and lighthouse tourism are other activities that are being actively considered under the Sagarmala Programme.

Under the programme, an integrated approach is being adopted for improvement in quality of life with focus on skill building and training, upgrading of technology in traditional professions apart from creating a specific and time-bound action plan for improving physical and social infrastructure in collaboration with the coastal states. The main features of Coastal Community Development plan consist of the following:

- Skill development
- Coastal tourism
- Development of fishing harbours
- Research and development in the port and maritime sectors

On the skill development front, Ministry undertook skill gap analysis in 21 coastal districts and is now implementing it. Additionally, the Ministry is funding skill development projects under Deen Dayal Upadhyaya-Grameen Kaushalya Yojana (DDU-GKY) to train 10,000 persons annually for the next three years.



To promote cruise tourism in India, the Ministry has taken some initiatives. A Cruise Passenger Facilitation Centre has been developed at the Chennai Port. Also, at the Cochin Port, a Cruise Berth cum Passenger Facilitation Centre has been developed while work on the International Cruise Terminal is still in progress. Upgrading and modernization of the Cruise Terminal at Mumbai is also under implementation.

To improve livelihood of the fishermen community, the Ministry is also partially funding select fishing harbour projects in convergence with Department of Animal Husbandry and Dairying (DADF). A total of Rs. 398.46 crores has already been sanctioned for 16 projects (Cost: Rs. 1452 crores).

To boost indigenous research, the Ministry has set up the National Technology Centre for Ports, Waterways and Coasts (NCPWC) at IIT Madras in Chennai. To provide innovative and research-based engineering solutions for the port and maritime sector, a Centre for Inland and Coastal Marine Technology (CICMT) has been set up at IIT Kharagpur. Till date, 68 projects worth Rs 7,369 crores have been identified for coastal community development. Of these, 16 projects (Cost: Rs. 1,362 crores) have been completed and 20 projects (Cost: Rs. 945 crores) are under implementation.

Is the Ministry planning to take steps to educate their workforce or impart any specified skill-based techniques?

Skill development is essential to induce efficiency in maritime operations. The Ministry is currently working on its vision to ensure 100 per cent skilled manpower in the sector. Multi-skill development centres (MSDCs) are being set up in the ports under the Pradhan Mantri Kaushal Kendra (PMKK) programme, in conjunction with the Ministry of Skill Development and Entrepreneurship (MSDE), to skill people in the port premises so that they may be employed in various port operations. The first such MSDC has been set up at the Jawaharlal Nehru Port Trust (JNPT) on March 08, 2019. Centres set up at the Chennai Port, Cochin Port and Vishakapatnam Ports are in advanced stages of development. The Ministry aims to set up these centres in all the major ports.

For skill development of coastal communities, the Ministry of Shipping is funding skill development under DDU-GKY to train 10,000 persons annually for next three years at 21 coastal districts. Training programmes have been started in Andhra Pradesh, Kerala and Tamil Nadu. In phase I of the programme, 1978 candidates have been trained and 1143 candidates have already found employment.

To ensure technology-based skill development we have setup Centre of Excellence in Maritime & Shipbuilding (CEMS) with two campuses at Vizag and Mumbai that are operational since February 2019. This will provide for skilled manpower in ship building and ship repair.

The world's biggest ship recycling yard at Alang is also a good example of coastal community development. Unskilled workers are not allowed to enter the yard unless they have completed the training mandated by the programme. The workers at the Alang ship breaking yards are being trained on a continuous basis. More than 23,000 people have undergone trainings so far.

While the broad concept of the Sagarmala Programme was promulgated at its launch and has been upgraded midway, what is the current focus area over the next four to five years?

The current focus area for Ministry of Shipping for the next focus years is

- Promotion of Coastal shipping & Inland Waterways in line with ADB Coastal Shipping study as it is the most cost efficient and environment friendly mode of transport
- Development of SIPCs at Kandla, Paradip and CEUs at VO Chidambaram and Kamarajar Port
- Development of multi modal logistics parks at 15 locations
- Development of Vadhavan Port in Maharashtra as the first Green Smart Port, which is going to be among the best 10 ports in the world
- Promotion of international cruise tourism
- Digitization of various processes in maritime and ports industries, etc.
- Making ports more efficient and ensuring ease of doing business.

In terms of project award and implementation, what is the status of the Sagarmala Programme?

As on date, 322 projects (Cost: Rs. 339,275 crores) have been awarded out of which 121 projects (Cost: Rs. 30,228 crores) have been completed and 201 projects (Cost: Rs. 309,047 crores) are under implementation.



Jal Marg Vikas Project: A Potential Game Changer for India's Logistics



India's logistics industry is witnessing a major shift as multimodal terminals are being planned on the country's national waterways and freight villages set up to ease transportation of cargo. During a conversation about the current project activities surrounding the country's inland waterways network, Shri Pravir Pandey, Vice Chairman of IWAI and Project Director of Jal Marg Vikas Project explains how developing waterways will redefine freight movement as the country gears up for a modal shift from the roads and rails to its rivers.

What is the overall aim of the Jal Marg Vikas Project and what all does it encompass?

The Government of India is aggressively pushing for the development of inland waterway routes as part of an integrated transport network strategy.

The Hon'ble Union Finance Minister, in his Budget Speech for 2014-15 had announced the Jal Marg Vikas Project (JMVP) on National Waterway-1 (NW-1) to enable commercial navigation on the Varanasi-Haldia stretch of the river Ganga. Soon after, began the capacity augmentation on NW-1 under the JMVP with the technical assistance and investment support of the World Bank at an estimated cost of Rs. 5369 crores. Close to Rs. 2000 crores worth of work is already on

ground on National Waterway-1. Of the three multimodal terminals that were planned to be built on river Ganga under JMVP, the one at Varanasi in Uttar Pradesh and Sahibganj in Jharkhand are already operational. Work on the third multimodal terminal at Haldia and a new Navigation Lock at Farakka (both in West Bengal) is on in full swing.

The NW-1 along with the proposed Eastern Dedicated Freight Corridor and NH-2 constitute the Eastern Transport Corridor of India connecting the National Capital Region (NCR) with the eastern and north-eastern states. Additionally, they will function as a link to Bangladesh, Myanmar, Thailand, Nepal and other east and Southeast Asian countries through the Kolkata Port and Indo- Bangladesh Protocol Route.

According to World Bank economic analysis, approximately 1.5 lakh direct and indirect employment opportunities will be created due to interventions under the JMVP in the states of Uttar Pradesh, Bihar, Jharkhand and West Bengal.

Under the Jal Marg Vikas Project, the second multimodal terminal at Sahibganj, Jharkhand has recently been inaugurated by the country's PM. Please shed light on the operating model of these terminals worked upon and those under construction?

The Phase -1 of the multimodal terminal at Sahibganj was inaugurated on September 12, 2019. Built at a cost of Rs. 290 crores in a record time of about two years, the Hon'ble Prime Minister himself had laid the foundation stone of the IWAI's Sahibganj multimodal terminal in April 2017.

The MMTs are being built as part of the government's JMVP that aims to develop the stretch of river Ganga between Varanasi to Haldia, for navigation of large vessels up to 1500-2000 tonnes in weight, by maintaining a draught of 2-3 metres in this stretch of the river and setting up other systems required for safe navigation.

The convergence of road-rail-river transport at Sahibganj through the new multimodal terminal will connect this part of the hinterland to Kolkata, Haldia and



further to the Bay of Bengal. Also, Sahibganj will get connected to North-East States through Bangladesh by river-sea route. It will open industries of Jharkhand and Bihar to the global market and provide Indo-Nepal cargo connectivity through the waterways route.

Jharkhand is richly endowed with mineral resources. The multi-modal terminal at Sahibganj will play an important role in transportation of domestic coal from the local mines in the Rajmahal area to various thermal power plants located along NW-1. Other than coal, stone chips, fertilisers, cement and sugar are other commodities expected to be transported through the terminal.

The multimodal terminal will also help create direct employment of about 600 people and indirect employment of about 3000 people in the region. The capacity of the terminal is 3 MMTPA. It will grow to 5.48 MMTPA after an investment of Rs. 376 crores for capacity enhancement in Phase II under PPP model. The development in Phase II will be entirely made by a private concessionaire.

A freight village is being proposed adjacent to the Sahibganj multimodal terminal like the one planned at Varanasi. Can you share some information about this project ?

It is true that a freight village is also proposed on 335 acres of land in contiguity with the multimodal terminal at Sahibganj. On waterways, the last leg connectivity is very critical, and a large part of success is thus dependent on generating cargo from satellite terminals along the way. Currently, the IWAI is involved in bidding out terminals to private players who can manage and run the terminals. At Varanasi and Sahibganj, we are trying to address this issue by constructing a freight village that will serve as a cargo hub and a centre for cargo aggregation and value addition. It will also supplement the development of third-party logistics and supply chain solutions. The freight village will be available for multimodal movement through road, railway and water. We will develop necessary infrastructure at more locations for the private players to operate.

How many people are expected to benefit from employment opportunities post creation of the Inland Waterways Transport (IWT) hubs at both Varanasi and Sahibganj ?

The JMVP envisages large investment and employment opportunities in the four states through which the NW-1 will pass. As mentioned earlier too, the economic analysis for the loan appraisal by the World Bank has concluded that the project would lead to extensive economic and social development of the hinterland along the banks of river Ganga. Employment opportunities for around 50,000 persons are expected to be generated in Uttar Pradesh and Bihar each, around 56,000 in West Bengal and close to 5000 in Jharkhand.

The IWAI does not have enough vessels to meet its cargo target of 150 million tonnes by 2023. Does the IWAI plan to add more vessels to its existing fleet ?

Though our primary job is to make the waterways navigable and equipped for vessels to sail, we have taken a big step towards building confidence in the key players to use waterways as their choice for transportation. Through the World Bank procurement process, we engaged DST Germany to design ideal ships for transport on the river Ganga. DST Germany has come up with 13 classes of ships ideally suited for the river Ganga that include bulk cargo ships, barges, container ships and car carriers, etc. These require low draught but have a carrying capacity ranging from 600 to 2450 tonnes of cargo. After a series of discussions with IIT Kharagpur, we have displayed these general arrangement designs free of cost on our website so that any ship builder can refer to them. To give you an estimate, an investment of Rs. 30-50 lakhs is needed to design a new ship. That is a direct saving that would accrue to the private sector who would use the DST Germany designs to manufacture riverine vessels. I strongly believe that it is the private sector, which will have to take lead to make this sector more lucrative.



A look at how the Mauryas excelled in sea-borne foreign trade



Sanchi Stupa built during the Mauryan age

Sea trade began during the latter half of the Mauryan period. In addition to focusing on exports and imports, the Mauryan rulers engaged in the shipbuilding business and hired them out to merchants for commercial purposes.

A careful look at some of the most ancient kingdoms in India would reveal a hint of their focus on trade across continents through the sea. Ancient textbooks penned by pilgrims or seals and sculptures say a lot about how the Mauryan empire founded in 322 BCE by Chandragupta Maurya maintained friendly relations with the Hellenistic powers by virtue of trade. While the land routes, (the northern one passing through Bactria and southern through Gedrosia and Carmania, Persia and Susiana) facilitated commercial relations between the West Asia and India, a large part of the trade was carried out by the sea route (through Gerrha on the west coast) of the Persian Gulf.

Hints of maritime trade under the Mauryas

The Arthashastra written by Kautilya (also known as Chanakya, c. 350-275 BCE) includes details of construction and security of trade routes during those times in addition to recommending guidelines regarding the appointment the Superintendent of Shipping, Port Commissioner, Superintendent of Commerce, Superintendent of Tolls, etc. These port officials were entrusted with duties to carry out seamless trade, which also involved punishing anyone found to violate the trade rules and regulations. Megasthenes, an ancient Greek explorer reputed for his writings on India in his famous book "Indika", confirmed the existence of shipbuilding industry in those times. His reference to the state controlling and administering the shipbuilding industry indicates flourishing maritime trade during the Mauryan period.

Goods and ideas moved via sea

Trade has been the linchpin of prosperity across time under the various Mauryan rulers. While the inland trade routes serving as the arteries of any prosperous kingdom enhanced communication and trade among people of various states, the sea routes serving as the mainstay of the kingdom's commercial activities were ubiquitous in their use and reference in many literary texts and travelogues written by foreign envoys who had visited India during those days.

Traders during those times had also preferred sea routes over their land counterparts. This is because maritime trade cost less in terms of transport apart from saving time. While explaining the benefits of trade via the sea route in contrast to the land route, Kautilya in Arthashastra elucidates how the sea and river routes were cheaper than the land routes. However, fear of storms and attacks by pirates limited sea trade. Moreover, traders travelling through sea routes faced inherent difficulties like shipwrecks and sea dangers as the ships built during those times were not strong enough to withstand the damage caused by hurricanes and other natural calamities. Traders then found solace in coastal sea routes mainly due to the existence of ports on these routes, thereby, allowing greater scope for sale and purchase of goods.

Exports and imports

The West Asian countries highly valued Indian timber and other items of use like bamboo, dyes, food grains, ivory, tortoise shells, pearls, rice, medicinal substances, etc. Besides, exports included a variety of livestock like hunting dogs, elephants, peacocks, parrots, maina, pheasants and snakes. In addition, West Asian countries imported items like spices, vegetable products, silk, textiles, Indian copal, indigo, lac, etc. Imports by Indian kings were comparatively lower in number than exports. Import items included fruits, beverages, wines, crude glass, asphalt and antimony, etc., thus, highlighting the balance of trade was in favour of the Mauryan rulers. References to the import of foreign liquors and wines have been found in the Arthashastra that refers to foreign customers in liquor shops.

Though there is not enough material to support India's overseas and international markets, historical texts refer to India's commercial ventures being extended to foreign countries like Assyria, Egypt, Israel, Syria, Parthia and Persia, etc.

The Mauryan empire, one of the most well-known empires during those times relied on trade for its prosperity and maintenance of armed forces. While a lot is unknown about the Mauryan trade systems, their focus on maritime trade to maintain external relations underscores the opulence and wealth synonymous with its rule.



INDIA TAKES THE “SWACHHTA PLEDGE”



The Sagarmala Post

— (A Newsletter On Sagarmala Programme By Union Ministry Of Shipping) —