J M BAXI GROUP

TIDINGS

ISSUE XLI

April - June 2023

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TIDINGS

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Environment, Social and Corporate Governance at J M BAXI

* All maps are for representation purposes only

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J M BAXI

From the
Quarter Deck

Dear Friends and Colleagues,
The last few weeks have seen several interesting **HEADLINES** in various parts of the world and across sectors.

The recession:

Global concern about the possibility of a recession is looming large. A recent study showed that the US, the UK, and Germany are very likely to have a recession (65 percent or more). India has the least possibility of a recession out of all the countries assessed.

US trade volumes:

The US has seen a drop in container and cargo volumes.

Shipping freight rates:

Shipping rates, especially in the container shipping world have seen a major drop in freight rates.

New ship launches:

Container ships of 24,000 plus TEU capacity are beginning to come out of our shipyards, the latest being OOCL Piraeus and ONE Innovation. Several of the large new ships are capable of dual fuel usage.
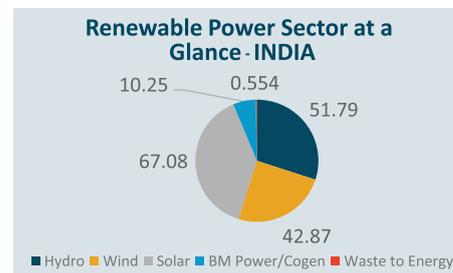
India export:

India's export basket sees a new addition in the top 5 placed commodities, with exports of smartphones reaching one of the top spots, after diesel and diamonds.

Climate change:

It has been confirmed that the world this year will see the EI Nino, a weather condition that occurs due to higher ocean warming. It will impact different parts of the world in different ways. The world saw the EI Nino seven years ago. India was then impacted by a late and lethargic monsoon.

Apart from the dramatic headlines, let us look at what is happening closer to home. As mentioned above, India has continued to be a brighter spot in an otherwise anaemic and disturbed world. The dual efforts of boosting infrastructure on one hand, and creating the ability to manufacture, are powerful ongoing initiatives. Elevating both infrastructure and manufacturing to a global scale and scope will boost the GDP, as also exports and employment. If India has to achieve the US $ 5 trillion economy and beyond, this effort cannot be allowed to slow down. Along with the push for renewable energy as a continuing objective, India currently has 172.54 GW of renewable energy, amounting to 41.4 percent of the total electrical generating capacity.

Renewable Power Sector at a Glance - INDIA

- Hydro — 51.79
- Wind — 42.87
- Solar — 67.08
- BM Power/Cogen — 10.25
- Waste to Energy — 0.554

On the specific sector of ports we continue to see growth, especially in the expansion of existing ports and the creation of new ports. The government of Andhra Pradesh is constructing three new ports at Ramayapatnam, Bhavanapadu and Machilipatnam.

In Gujarat, the Kandla Port Authority has concessioned out the Tuna Tekra container terminal to DP World, and in some time we will see a large container terminal opening up there.

The Dedicated Freight Corridor (DFC) of the railways will also be completed, providing a quantum jump to rail-based logistics and transportation of various commodities as well as containers. The reason we specifically talk about and remind ourselves of the DFC is that this paradigm change

will enable the possibility of longer trains, which will not only bring down costs (considering that railways authorities are fair) but also enable a greater amount of container traffic to transition to rail, from road. This would undoubtedly help to bring down the carbon footprint in the transport and logistics sectors. International shipping companies are increasingly ordering new ships with dual fuel usage capabilities. Interestingly, some of the green fuels like green methanol, are not yet available (if available, it will be with great difficulty), and still, shipping companies have taken the leap into the inevitable journey of clean and green transport.

Indian ports and various terminal operators are also preparing themselves to have ports as green hubs. Not only will terminals such as ours, be completely carbon neutral, but they will also provide green power to ships as well as the transport trucks and trailers that come to our terminals. The new regime of international trade will demand that not only transport and port handling be green, but also manufacturing and exports be clean and green and zero / minimum carbon emission compliant. This will therefore see ports increasingly becoming physical elements of the manufacturing and supply chain strategies. Aggressive climate change is forcing the world towards such measures.

Global weather forecasters have declared that 2023 will see the EI Nino.

From the
Quarter Deck

We have already seen some parts of South America facing droughts and poor rainfall. The Panama Canal has seen a drop in its navigable water depth, which has resulted in a reduction of the permissible draft of ships passing through the canal. For some ships, a reduction up to 40 percent of carrying capacity has been mandated.

The first six months of 2023 have been a relatively steady period for our group of companies. One leading businessman expressed it well by saying that in some areas there have been headwinds and in some, tailwinds. This mixed bag of uncertainties will remain for some time. Such periods provide both challenges and opportunities; we will need to be alert and proactive at all times. Amidst these challenging times, we have had some noteworthy achievements.

Mumbai International Cruise Terminal

The MV Empress, MV Insignia, and MV Amadea - three cruise ships with a combined passenger capacity of over 2,500 berthed at the Mumbai harbour on 1st May 2023. It was an honour for us to represent them at the Mumbai port, through our parent company, J. M. Baxi & Co.

Kandla Container Terminal

- On 29th May 2023, a sudden gust of heavy wind and rain hit Kandla and damaged a few areas within the terminal. A quay crane derailed but operation resumed within 3 hours. Resources were mobilised to carry out the repair works on an immediate basis.
- Two new EXIM services, WARM and JKS started calling our Kandla terminal.
- With the development of the WARM service, Kandla has started getting cargo volume, destined for Jeddah.

Delhi Inland Container Terminal

- Achieved the highest-ever throughput of 17,410 TEU in May 2023.
- Achieved the highest solar generation 1,19,313 KWH in May 2023 which reduced Co2 amounting to 94.26 mt.
- Solar electricity generation increased to 88.35% and 88.40% in April 2023 and May 2023 respectively, and only 12 percent of state electricity is used.

Visakha Container Terminal

- Highest throughput achieved in May 2023: 61,468 TEU.
- The highest number of vessels handled in a month May 2023: 49 vessels.
- The highest EXIM laden handled in May 2023: 42,065 TEU.
- New services commenced for SOL feeders (Route: Kolkata - Vizag – Colombo).
- CII best safety practices award received in the month of April 2023.
- Record handling of 4,023 TEU (EXIM Laden) in the month of May 2023 at the terminal's container freight station.

Aryacom

- Secured orders for providing locking solutions to Hitachi Omron Terminal Solutions (HOTS). The solution created for managing an OTC (One Time Code) for added security for ATMs has taken a big leap in Nationalised and Co-op banks.
- Aryacom's trunking solutions team was awarded an order from Telangana Police (Traffic Division) to upgrade their existing APCO System.

J M Baxi Heavy

RUF Vizag shipment of 6 modules in 2 barges doing Mumbai - Hazira - Katupalli - Vizag - Katupalli - Vizag - Mumbai. The challenge was to deliver the equipments in 2 voyages within 45 days, with the barge having to return back before the monsoon, which was successfully completed within 40 days.

A 75 m long piece of equipment was transported in Dahej via a village, where a full village bypass was required. This included the shutdown of 220 KVA powerline that went through a 20 days approval process.

On 18th June, the west coast of India had to face Cyclone Biparjoy. Fortunately, due to the untiring efforts of the Gujarat Authorities and the disaster management cell, not a single human life was lost. The landfall was in Gujarat, and all the ports in Gujarat were closed for more than two days. Our teams at Kandla and Bedi were on high alert, and we faced this fury of nature with no major damage or losses.

We now enter the monsoon phase of the annual seasonal pattern of India, and this has major implications for ensuring trade growth and pattern. Crops like sugar, rice, corn, cotton etc. form a substantive part of our export basket. The coming weeks will also be an indicator of how some of the headlines mentioned earlier will pan out. Till the next issue, we do expect a few developments to unfold, with Indian ports perhaps getting larger container ships calling due to their increased availability. With the efforts of a 'China Plus' strategy for manufacturers, we should also begin to see greater volume growth.

Signing off till then.

Krishna B. Kotak
Chairman - J M BAXI GROUP

Marine Services

Safety At Ports

Sea ports are easily vulnerable to safety hazards. With a huge number of heavy vehicular movements, different dimensions and types of cargo being loaded, unloaded and moved within port premises it becomes very important to be alert when walking, driving and moving around in the port premises during all times of the day and night since the chances of trips and falls increases. Furthermore, people working with cargo at ports face safety risks every day due to - working at heights, falling cargo, heavy machinery, traffic and other hazards. Factors like untrained and casual labor, complacency in handling cargo, long hours or inadequate breaks further increase the risk of injuries and accidents. To mitigate any risk of injuries or fatalities a general awareness of the operations cannot be undermined and a detailed risk analysis and adoption of detailed safety protocol is essential.

Generic safety norms expected from a port user like donning of Personal Protective Equipment (PPEs) in cargo handling areas, compliance of set safety rules or norms, no misuse of any equipment, deployment of only trained personnel in the docks are insufficient and a more holistic view is necessary to not only identify the risks, but include specific measures to eliminate those risks in a structured manner.

To enhance the safety culture at J M Baxi a more structured approach on all the risks involved in seaport operations are identified, and bought under the ambit of Six Guiding Stars of Safety. Every J M Baxi employee is to not only adhere to these but also inculcate them in their daily working lives, which are.

i.   Safety whilst moving
ii. Safety aboard a vessel
iii. Mobile equipment safety
iv. Cargo handling safety

v.   Safety when working at a height
vi. Lifting equipment safely

All the anticipated risks are identified and risk mitigation methods are placed which becomes the standard procedure for work under that Guiding Star.

The Guiding Star no. (i) to (iii) are generally for all the port users and (iv) to (vi) are specifically for people involved with cargo operations in a port.

Here is a detailed look at the Guiding Stars

I. Safety whilst moving

Activities under this principle are to identify tasks which may jeopardise safety whilst walking, moving around in a vessel/seaport area and bringing n measures to eliminate the risk. For effective compliance with this standard:

a. The supervisor and employee should identify and control the risks associated with the presence of moving equipment and pedestrians, to ensure.

- Interaction between pedestrians and moving equipment is eliminated
- Consistent use of high visibility clothing
- Effective communication between pedestrians, operators of moving equipment and those supervising operations of the moving equipment

b. The employee shall walk only on the pedestrian path in the designated areas on the vessel/port

c. Wearing PPE i.e. - high visibility vest, safety helmet and safety shoes when moving within the port

II. Safety aboard vessels

Vessels due to variations in design, condition and the general arrangement of cargo, can present the potential for personal injury and damage. Before working onboard, all workers should assess the layout, set-up and condition of the vessel including access to all Points of Work (POW), no-go-area on the vessel, location of the fire-fighting appliances and all swing zones of all lifting equipment. The range and severity of risks present on individual vessels can vary due to factors such as age, the condition and type of vessel, access to areas of work, condition of lifting equipment, loose gear, the nature and stow of cargo and the vessel's crew.

SAFETY NET FOR GANGWAY PLACING

Marine Services

Effective compliance with this standard will be demonstrated by:

- Strict implementation of 'no-go areas' on the vessel
- Proper head count of the people onboarded, and tallied after the shift when disembarkation from the vessel takes place
- A clear and well-defined line of communication with proper identification of the ship's officer-in-charge for a particular task; like cargo ops, for maintenance in case of the workshop, for stores in case of supplies etc.
- Ensuring the ship has placed the gangway properly and the safety net is fixed before climbing it
- Cotton gloves must be worn to ensure proper grip while boarding the gangway and checking of steps for any oil or water to avoid slippage

III. Safety from moving equipment

Moving equipment includes light vehicles such as cars, trucks, vans, shuttle buses and other personal vehicles, in addition to reach stackers, cranes, forklifts, trains, etc. used in operational areas. The supervisor and employee should identify and control the risks associated with the usage of moving equipment.

Effective compliance with this standard can be demonstrated by:

- Following traffic management protocols and avoiding areas cordoned off by the port
- Operators undergoing competency-based safety trainings
- Safe operation of vehicles and moving equipment
- Managing operator fatigue
- Ensuring only required workers are present within the working area and others are moved out from the area

- Adequate identification and management of hazards and risks

IV. Cargo handling

Many incidents, sometimes fatal, are reported whilst workers are standing under the cargo load or the impact zone in cases of falling loads. Supervisors are advised to use the appropriate equipment and safe work procedures to eliminate the likelihood of personnel being injured by swinging, shifting or falling cargo loads during cargo handling operations.

Effective compliance with this standard can be demonstrated by:

- The appointment of a person in-charge of cargo handling operations
- The selection and correct use of appropriate lifting gear and attachments to handle cargos
- The safe operation of cranes and other equipment, including the ship's gear and lifting devices
- The use of safe-load slinging techniques and slinging configurations which result in the minimisation of cargo swing
- Effective communication between
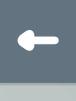
Marine Services

all people working in and around a lift

- Ensuring that vehicles are not permitted to enter or leave the site unless cargos are adequately secured

V. Safety when working at heights

Working at a height poses significant risks, even a simple task like climbing the crane ladder, working from the hatch coamings can be fatal due to the location of the working area. Supervisors should ensure employees and workers are safeguarded against the risks associated, whilst working at a height by putting appropriate safety measures like safety harnesses, use of cherry pickers etc. Strict compliance is to be made with all local statutory requirements whilst working at heights.

Effective compliance with this standard can be demonstrated by:

- Minimising the need for work to be done at a height
- Using a safe working system comprising of appropriate fall prevention and protection measures
- Identifying and controlling risks when cargo stowage is challenging
- A proper briefing session before the commencement of such activities and checking of control

measures like safety harnesses, working in pairs etc. are in place.

VI. Lifting equipment safety

The supervisor shall provide lifting equipment that is designed, built, procured, and maintained to relevant industry standards, to ensure the safety of its personnel and the efficiency of its operations is maintained. Lifting equipment covers all the machinery, lifting tools, lifting appliances, and includes equipment such as cranes, access equipment, lifts and hoists, pressure vessels, general machinery, spreaders and scaffoldings.

Effective compliance with this standard can be demonstrated by:

- A proper maintenance procedure and schedule should be complied with for all the lifting equipment used for operations. Greasing of moving parts of a crane, inspection of wires and slings, periodic load tests of the equipment and slings etc.
- Proper labelling and markings of the swing circle, safe working load, testing dates on the lifting equipment
- Appropriate use of lifting equipment for the kind of operations.

- Spreaders for long loads, wire rope protectors for sharp-edged loads, etc.
- When purchasing new lifting equipment, consideration should also be given to the impact on the environment and the health and safety of personnel operating, working with and maintaining the lifting equipment

Safety is continual and an everyday target. Therefore, safety processes need to be constantly evaluated and evolved to ensure everyone reaches home safely every day. As they say, 'you live – you learn'.

In Conversation

With Will Speck, President - TSB, The Oil And Gas Decommissioning Advisory Services Company

What are the services that TSB provides in general, and more specifically, can be of interest to Indian companies?

TSB provides a wide gamut of decommissioning services, most of which are likely to be of keen interest to Indian oil and gas exploration, and production companies. They consist of consulting services, ARO estimates (PAES), regulatory assistance to governments, oil and gas operators, bonding assistance, integrated project management services, benchmarking services, and asset life cycle management consulting.

One of the most unique tools that TSB has developed for use in the industry, is a comprehensive computer-based Platform Abandonment Estimating System (PAES™), which takes advantage of the company's substantial hands-on experience in the decommissioning market. This software was developed by TSB and accesses a resource data base of actual worldwide decommissioning project costs and algorithms to develop decommissioning cost estimates.

The PAES™ system contains thousands of decommissioning cost estimates and historical data for the Gulf of Mexico, North Sea, Middle East, and Asia Pacific / India / Australia regions, spanning over 20 years. This includes a complete set of offshore daily spread costs (updated for each region of the world on a yearly basis) for all aspects of decommissioning operations, including site preparation, well plug and abandonment, pipeline abandonment, platform removal and final site survey. These costs are applied to the standard decommissioning methodologies / estimated durations for

Will Speck is the President of TSB Offshore, the recognized oil and gas energy industry leader in providing worldwide abandonment consulting and project management services. Will has over 21 years of oilfield experience in field operations and operations management, and more than 19 years of project management experience. His experience spans several geographies - the Gulf of Mexico, China, Malaysia, Vietnam, Central Asia, the Middle East and United Kingdom. Prior to TSB, Will worked with Schlumberger (US and International) and GE Oil & Gas (US and international).

each work segment to arrive at robust decommissioning estimates.

This program, along with the decommissioning methodologies and costs (updated continuously by TSB) are unique in the decommissioning industry.

For our non-oil and gas and non-technical readers, can you explain to us what is generally meant by 'Decommissioning of Offshore and Onshore Structures' and why it has such serious implications in the oil and gas scenario?

Decommissioning is the process of plugging and abandoning oil and gas wells and removing or repurposing infrastructure at the end of its useful life. This includes offshore facilities/ structures, pipelines, onshore storage and production sites and other related support facilities. Where allowed by government regulation, this also includes abandoning 'clean' pipelines in place and the reefing of non-carbon affected substructures/jackets in designated reef areas for the purpose of producing new marine habitats. Decommissioning is normally mandated by oil and gas company policies and a range of national regulations, which sometimes vary substantially from country to country. In all cases, however, decommissioning should be carried out in a safe and environmentally and socially responsible manner.

In general, what are the major processes used in decommissioning of offshore oil and gas facilities worldwide and how do they relate to upcoming work in India.

The general processes followed for decommissioning of offshore facilities, which is a major part of TSB's consulting work in India, are outlined below. These processes generally follow the same framework as those used worldwide, especially in the US Gulf of Mexico and other parts of the Asia Pacific Region.

Phase 1 – Project Planning, Site Survey, Facility Prep and Related Up-Front Activities
Phase 2 – Well Plug and Abandonment
Phase 3 – Pipeline Abandonment
Phase 4 – Platform / Facility Removal
Phase 5 – Debris Removal and Final Site Acceptance
Phase 6 – Project Closeout

In Conversation

The same processes are currently serving as a basis for the methodologies used by TSB for offshore decommissioning in India.

What are the ESG (Environmental, Social & Governance) issues, based on your worldwide experience, that will need to be invariably addressed on decommissioning projects?

The major challenge in decommissioning of oil and gas facilities with respect to ESG issues lies with offshore facilities. There is little disagreement about what should be done with onshore facilities and how it should be done to comply with industry best practices. The challenge with onshore is simply a matter of enforcement, i.e., getting the responsible parties to spend the money that is needed to do the job properly.

The situation with offshore decommissioning is much more complicated. A major portion of international regulations for offshore decommissioning have been developed in the United States (US), starting in the 1960's, and then in the North Sea in the early 1970's. Unfortunately, during this period there were some prominent pollution incidences (the Santa Barbara oil spill in 1969 and the Ixtoc, Mexico oil spill in 1979) which soured the general public against the oil and gas industry and had a major impact on how the international decommissioning regulations have been written. These basically required that everything be removed to shore and disposed of at specialty facilities as the base case. However, we now recognise that the best ESG decommissioning response is far more complicated than just removing everything to shore for disposal. When personnel safety and air quality are considered, it often is better to leave some of the hardware in place in the ocean, in many parts of the world, with robust reefing processes in place. The bottom line is that every offshore decommissioning situation must be evaluated on its own to determine the

best ESG solution. There is no single solution that fits all circumstances.

What have been TSB's more recent involvements in the Indian decommissioning market and their overall contribution to the industry.

TSB has most recently completed work for the Oil & Natural Gas Corporation (ONGC) and Cairn Energy, and with Shell / BG in the past. This work has centered around developing Asset Retirement Obligation (ARO) budget estimates for their onshore and offshore facilities. The work also included follow-up studies covering yearly cost basis updates, changes in current regulations and facilities added or deleted to their portfolios. Decommissioning methodologies were completed for each client based upon current Indian regulations and resources available for decommissioning in the region.

TSB was also involved in the very early development of the Indian Decommissioning Market. Through a request by the Indian Directorate General for Hydrocarbons, TSB completed a comprehensive study to develop the first draft rules for an onshore and offshore oil and gas facility decommissioning in India. This work was completed in 2016.

The scope of this study included:

- Provide a summary of all major international decommissioning regulations.
- Identify the time requirements for facility decommissioning and how this is impacted by the regulations.
- Identify financial issues such as liability bonding or escrow accounts and how these are handled in other countries.
- Develop draft regulatory guidelines for oil and gas facility decommissioning.
- Provide a workshop on the recommended guidelines.

This was a major first step in India's quest to develop robust decommissioning regulations similar to those used elsewhere in the world, incorporating key international best practices.

Does TSB have any long-term plans for India considering the virtually untapped Indian market for onshore and offshore decommissioning projects?

TSB has been working on Indian projects since 2002, initially with ONGC and later with other operators. To continue this growth and establish a more indigenous presence in India, TSB has a 'Teaming Agreement' with Arya Offshore Services Pvt Ltd. (The oil and gas flagship company of the J M Baxi group).

How do you see the future as far as decommissioning projects are concerned? With the increasing global trend towards phasing out some conventional oil and gas exploration and production activities, and with the advent of environmentally friendly fuel and energy applications, do you foresee a huge amount of decommissioning projects to emerge worldwide in the immediate future as governments scramble to replace traditional oil and gas extraction with alternative sources such as solar, nuclear and wind energy?

The transition to non-carbon energy sources will not have an immediate impact on most upcoming decommissioning projects. There currently exists a very large stock of existing oil and gas facilities onshore and offshore. These facilities are likely to serve out their economic lives and then be decommissioned as appropriate. We would expect that the transition in energy sources will eventually cut off the supply of hydrocarbon related facilities to decommission, but by then we'll be decommissioning something else, wind turbines or nuclear power plants. There will always be something that needs to be shut down and disposed of in a safe and properly executed manner.

Technologies

PORTALL Joins Hands With The SAUDI ARABIA Government To Implement PCS

Portall recently signed an agreement, to launch Port Community System (PCS) in the Kingdom of Saudi Arabia. The two parties involved in the conversation with Portall were Mawani and Tabadul. Mawani, also known as the Saudi Ports Authority is a government authority which oversees the national shipping industry. It manages 9 ports, consisting of a total of 232 berths. The types of loads handled by these ports/ terminals include containers, general cargo, refrigerated and frozen cargos, bulk cargo, roll-on/ roll-off cargos, livestock, and passengers. Due to their various specialisations, Saudi ports play an exceptional role in developing the regional and international maritime trade and passenger transport. This also includes cruises that facilitate religious tourism in the country, more specifically the holy sites of Hajj and Umrah.

Tabadul, is an independent organization (formerly known as SaudiEDI) by approval of Saudi Arabia's Council of Ministers in order to introduce and operate a kingdom-wide automated trade clearance facilitation system. Tabadul develops safe digital solutions to help Saudi Arabia evolve as a smart logistics nation. Tabadul advocates digital transformation to facilitate the global trade system effectively.

Tabadul undertook the initiative based on Mawani's request to enhance the current PCS and level it up to international standards. The task is to integrate PCS with the National Single Window operated by Tabadul, and link it with all parties related to imports and exports in the Kingdom.

The bidding process for the project started on 14th June 2022 with the release of an Expression of Interest (EOI), which garnered many responses from all over the world - Europe, America, Asia and the Middle East. Portall's edge lay in having experts with 20 plus years experience in the domain, and being a leading provider of information technology solutions and services to the maritime sector, leading the team to win the bid.

Tabadul representatives were left more than convinced that the project would be in safe hands with Portall after their visit to India to further the bidding process. J M Baxi's Portall, specialises in conceptualising and implementing community platform systems that connect stakeholders and enables collaboration and coordination between various stakeholders. This can be seen with the development of PCS 1x and National Logistics Portal - Marine, now called Sagar Setu, established by Portall for the Government of India's Ministry of Ports, Shipping and Waterways (MoPSW). The development of these platforms has helped India improve its Ease of Doing Business (EoDB) Ranking and has also been showcased in global case studies such as the ReMo Freight Report of June 2022.

By partnering with Portall Infosystems, Tabadul is working with Mawani to convert their vision of fostering a sustainable and thriving maritime and ports ecosystem to establish the Kingdom as a global logistics hub and enable its economic and social
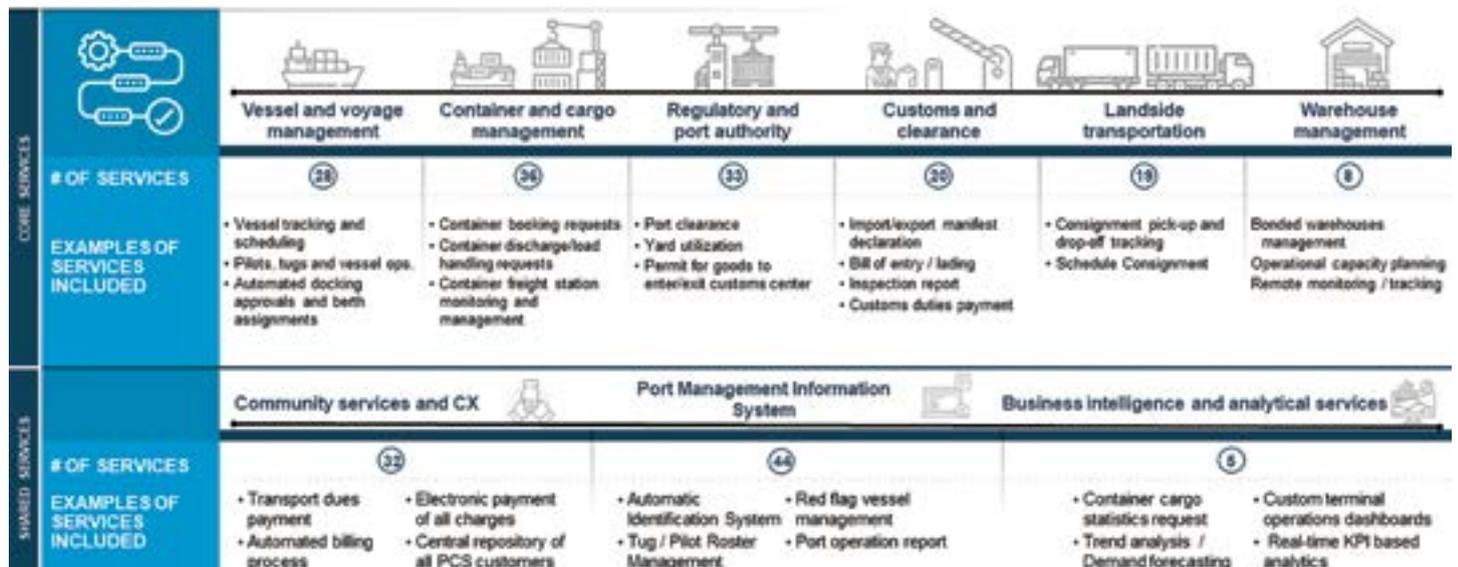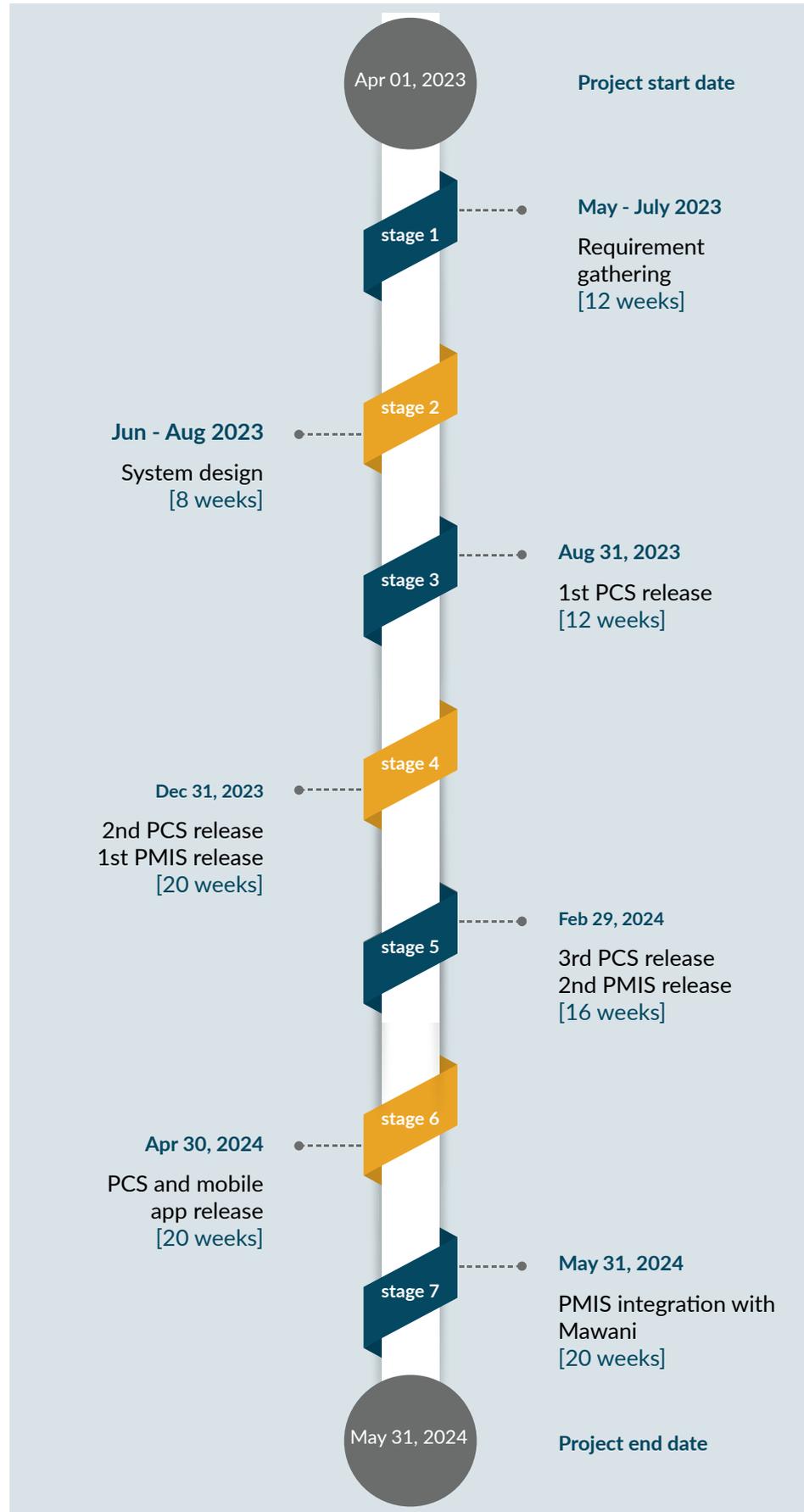
Technologies

ambitions into reality, following the Kingdom of Saudi Arabia's Vision 2030. Portall also aims to enable the Saudi ports to become the main player, linking the national economy to the global market.

This project aims to achieve several benefits within the sea cargo value chain. First and foremost, it will provide a unified platform that brings together all stakeholders involved in the process. This platform will serve as a single window where stakeholders can access digital solutions to fulfil their operational and information needs. One of the key advantages of this system is the implementation of a unique communication pipeline that ensures single and complete data entry. This pipeline will distribute information seamlessly to all parties involved, both upstream and downstream. As a result, overall processing time will be significantly reduced, leading to enhanced service levels. Additionally, the project will establish uniformity in back-end solutions for all services provided at the stakeholder level, promoting common e-services across the board. Moreover, operational efficiency in all ports will be increased, resulting in improved quality and safety of operations. By raising the quality of data, data sharing, and reports, the project will further enhance the customer experience. Finally, the integration of all stakeholders will be achieved, fostering collaboration and coordination throughout the sea cargo value chain.

Currently, the project is in the data gathering phase, which will be followed by the system design. PCS will be launched in 3 phases, a few modules at a time, starting with the core modules; Vessel and Voyage Management, Vessel Cargo Operations Management, Cargo Container Management, Registration and User Management and the Port Management and Information System application. The rest will follow soon after, with the aim of having the entire PCS go live and the system ready for use in May 2024.

Apr 01, 2023

Project start date

stage 1

May - July 2023

Requirement gathering
[12 weeks]

stage 2

Jun - Aug 2023

System design
[8 weeks]

stage 3

Aug 31, 2023

1st PCS release
[12 weeks]

stage 4

Dec 31, 2023

2nd PCS release
1st PMIS release
[20 weeks]

stage 5

Feb 29, 2024

3rd PCS release
2nd PMIS release
[16 weeks]

stage 6

Apr 30, 2024

PCS and mobile app release
[20 weeks]

stage 7

May 31, 2024

PMIS integration with Mawani
[20 weeks]

May 31, 2024

Project end date

Technologies

End-To-End Encryption - A Building Block For Data Governance

In today's digital age, data governance has become a critical concern for individuals, organisations, and governments alike. With the ever-increasing volume and value of data being generated, transmitted, and stored, ensuring its security and privacy has become paramount. One crucial element that serves as a building block for data governance is end-to-end encryption (E2EE) technology. End-to-end encryption offers a powerful solution to protect sensitive information, foster trust, and enable secure communication across various platforms.

The basics

End-to-end encryption is a method of securing data in transit or at rest by encrypting it on the sender's device and decrypting it only on the recipient's device. Unlike other forms of encryption, E2EE ensures that data remains confidential and inaccessible to anyone except the intended parties involved in the communication. This includes service providers, third-party intermediaries, and even the platform administrators themselves. Only the sender and the recipient hold the cryptographic keys necessary to encrypt and decrypt the data, making it highly secure.

One of the key advantages of end-to-end encryption is its ability to safeguard sensitive information from unauthorised access and surveillance. With E2EE, even if a third-party gains access to the data during transmission or storage, they would only see encrypted, unintelligible information. The encryption algorithms used in E2EE are mathematically secure and practically unbreakable within a reasonable timeframe, ensuring that the data remains protected against potential threats.

By implementing end-to-end encryption, organisations can enhance their data governance practices in several ways. Firstly, E2EE provides a strong foundation for compliance with privacy regulations and data protection laws, such as the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA). These regulations emphasise the importance of protecting personal and sensitive information, and E2EE aligns perfectly with their requirements.
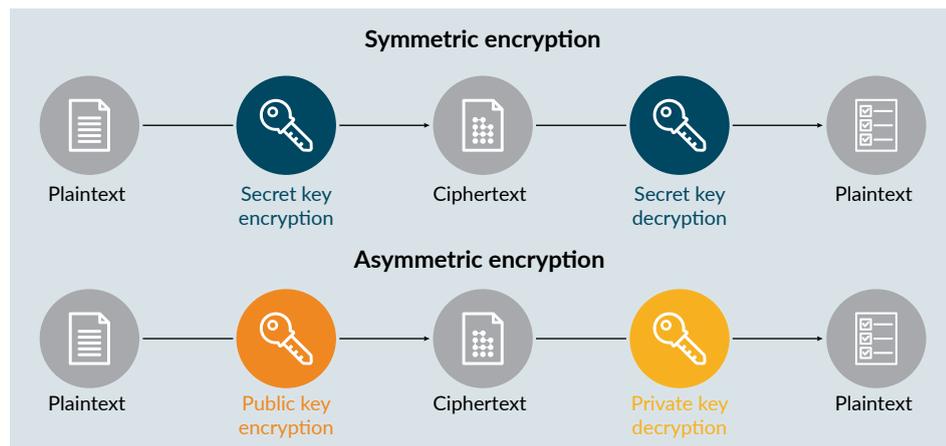
Secondly, end-to-end encryption allows organisations to demonstrate their commitment to data security and privacy, fostering trust among their customers and stakeholders. By implementing robust encryption measures, organisations can reassure their users that their data is being handled responsibly and that their privacy is being respected. Trust is a vital element in today's data-driven world, and E2EE helps build and maintain that trust.

Furthermore, end-to-end encryption can prevent data breaches and unauthorised data access. As data breaches continue to make headlines, organisations must prioritise the protection of their sensitive information. E2EE ensures that even if a breach occurs, the data stolen would be encrypted and useless to attackers. This adds an extra layer of security, minimising the potential damage caused by such incidents.

How E2EE plays out in the real world.

End-to-end encryption is used when data security is necessary, including in the finance, healthcare and communications industries. It is often used to help companies comply with data privacy and security regulations and laws.

Major service providers like Google (Gmail), Yahoo, or Microsoft hold copies to the decryption keys. This means these providers can read users' email and files. Google has used this access to profit off of users' private communications via targeted ads. By contrast, in well-constructed end-to-end encrypted systems, providers never have access to the decryption keys.

Symmetric encryption

Plaintext → Secret key encryption → Ciphertext → Secret key decryption → Plaintext

Asymmetric encryption

Plaintext → Public key encryption → Ciphertext → Private key decryption → Plaintext

Technologies

The simplest way to explain Gmail's current encryption is to think about the email message traveling from the sender's computer to the intended email recipient. During transit, digital messages are encrypted via Transport Layer Security (TLS), a protocol that provides security between the client/server applications that communicate with each other over the internet.

The misconception comes into play when the message is at rest at the sender, intermediary servers or the recipient. At those points, the message is not encrypted. Another time the message is not encrypted is if the recipient's email program does not accept HTTPS (using TLS) messages. Your messages are encrypted only if you and the people with whom you exchange email both use email providers that support Transport Layer Security. Not every email provider uses TLS, and if you send or receive messages from a provider that doesn't, your message could be read by eavesdroppers. While TLS isn't a perfect solution, if everyone uses it, snooping on email will be more difficult and costly than it is today.

The privacy debate

One of the critiques of end-to-end encryption is that it allows unrestricted privacy. While end-to-end encryption is highly secure, it can also pose challenges for certain aspects of data governance, such as content moderation and law enforcement investigations. Since the data is encrypted and inaccessible to anyone except the sender and recipient, it becomes more difficult for platforms to monitor and moderate potentially harmful or illegal content.

Law enforcement, intelligence agencies, and governments tend to argue that end-to-end encryption makes it harder to keep tabs on illicit activities—such as child abuse, human trafficking, or terrorism—leading some to complain about data going dark. Since EE2E makes it impossible for providers to read the messages passing through their servers, it makes it increasingly difficult to detect the transmission of harmful content.

On the other hand, privacy advocates, human rights activists, and technologists tend to agree that people should be able to communicate online without anyone eavesdropping on their conversations, and that end-to-end encryption helps shield ordinary citizens from government overreach and mass surveillance—particularly at a time when digital communication platforms are essential for nearly everything - from organising protests to attending medical appointments.

Striking the right balance between privacy and security while addressing these concerns is crucial and requires thoughtful consideration and collaboration between technology companies, policymakers, and other stakeholders.

Section 84A of the IT Act 2000 empowers the Central Government to develop encryption standards and methods to protect electronic communications while providing e-governance and e-commerce. End-to-end encryption prevents unauthorised access to sensitive data irrespective of whether it is integrated, while in transit or at rest.

While India has now introduced traceability through the subsequent IT Rules of 2021, Brazil has modified its Criminal Procedural Laws to conform to its requirements. The United States of course has also moved in this direction by forming the 'Five Eyes Alliance' to gain access to encrypted communications.

In conclusion, end-to-end encryption serves as a crucial building block for data governance in the digital age. By employing E2EE, organisations can protect sensitive information, comply with privacy regulations, and foster trust among their users. However, it is essential to address the challenges associated with encryption while ensuring that legitimate concerns such as content moderation and law enforcement investigations are adequately addressed. Ultimately, the effective implementation of end-to-end encryption can significantly enhance data governance practices and contribute to a more secure and privacy-conscious digital ecosystem.

Aryacom and Dekkoserve enters the Indian E2EE market

Aryacom a J M Baxi group company and DekkoSecure an Australian cybersecurity software developer company have signed an exclusive partnership agreement for the Indian market. Dekko is trusted by organisations of all sizes across the globe for ultra-secure file sharing, collaboration, eSignatures, and video conferencing. The Dekko solution is set to revolutionise how government organisations and enterprises will share and collaborate on highly sensitive information. DekkoSecure is a global leader in cybersecurity solutions.

Some of DekkoSecure's global success stories:

- A large financial services company was able to reduce its risk of data breaches by 90 percent after implementing DekkoSecure's solutions.
- A small business was able to recover from a ransomware attack within 24 hours after using DekkoSecure's incident response services.
- A government agency was able to improve its compliance with data protection regulation after implementing DekkoSecure's solutions.

Aryacom and DekkoSecure strives to occupy a major space in the Indian market to provide Software as a service (SaaS) solutions with military-grade security, that allows government and enterprises of all sizes to easily share and collaborate on highly sensitive and confidential information.

Ports & Logistics

Water Water Everywhere, Yet It Needs Saving.
Sustainable Water Use At Port Terminals

Water is a valuable resource that can no longer be taken for granted and needs to be managed judiciously through measures to conserve, recover and reuse, especially in industries that consume large quantities of water. Ports are often significant consumers of water due to the nature of their operations and the various activities that require water. Hence, implementing sustainable measures at port terminals is crucial for minimising water consumption, reducing the extraction of freshwater resources, and minimising the discharge of wastewater into surrounding waters. Water conservation can be achieved at ports through a combination of water-efficient infrastructure, behavioral change through education and awareness, rainwater harvesting, water recycling and reuse.

The 'Harit Sagar' Green Port Guidelines laid down by the Government of India focuses on adopting the following parameters for pushing water suitability measures:

Driven by the aim to achieve sustainable growth in the industry, J M Baxi Ports & Logistics is focusing on a three-point approach framework which can be adopted to enhance sustainable water management practices. The guiding principle is to reduce water consumption, minimise environmental impact, and contribute to long-term water resource sustainability. This framework involves focusing on three key areas:

Water efficiency

Focuses on optimising water use and reducing wastage through:

- **Implementation of water-efficient technologies and equipment**: Integrating green infrastructure, utilise low-flow fixtures, water-saving appliances, and water-efficient irrigation systems.

- **Conduct regular water audits**: Assess water consumption patterns, identify areas of high usage, and implement measures to minimise wastage.

- **Promote behavioural change**: Educate project stakeholders about water conservation practices and encourage responsible water use.

Water conservation

This aspect involves preserving water resources and minimising environmental impact through:

- **Rainwater harvesting**: Collect and store rainwater for non-potable uses, such as landscaping, cleaning, or construction activities.

- **Water recycling and reuse**: Treat and reuse wastewater generated within the project for purposes like irrigation, equipment cooling, or toilet flushing.

- **Implement stormwater management strategies**: Use techniques like permeable pavements, green infrastructure, and retention ponds to manage stormwater runoff and reduce pollution.

Water stewardship

Focuses on actively managing and protecting water resources through:

- **Environmental monitoring**: Regularly monitor water quality, assess impact on nearby water bodies, and ensure compliance with applicable regulations.

- **Engage with stakeholders**: Collaborate with local communities, authorities, and experts to ensure

Increase the capacity of water treatment plants and usage of treated water.

Achieve more than 20% reduction in freshwater consumption for every ton of cargo and 100% recycle & reuse wastewater by year 2030.

Harit Sagar Guidelines

Explore the possibility of installation of desalination plants as an alternate to ground / surface water.

Make adequate arrangements for rainwater harvesting for effective collection of rain water wherever possible.

Ports & Logistics

a holistic approach to water management and address concerns.

- **Continual improvement**: Set targets, measure performance, and regularly review water management strategies to identify opportunities for improvement and innovation.

Water saving initiatives undertaken at J M Baxi Terminals

At J M Baxi terminals, water is mostly withdrawn from third-party water providers and in some places from groundwater. Water is mainly used for cleaning and maintenance, office buildings and canteens. The company is committed to managing and working towards reducing its water footprint. All business units are advised to adopt necessary measures as per regulations, to manage wastewater and ensure wastewater release complies with necessary legal requirements before discharge.

Water reduction initiatives include:

- **Water usage monitoring processes**: Adopting efficient water management measures such as monitoring monthly water consumption with flow meters and installing fixed water meters in different areas for equipment/ container cleaning and drinking. At Haldia Container Terminal water meters are installed in workshop areas, the project and engineering building and at the terminal.

- **Employee awareness sessions for behavioral changes on water conservation**: Creating awareness among employees, workers and operators about water usage, maintaining records and efficient water consumption practices.

- **Water filtration plant**: Installation of Reverse Osmosis (RO) plant for purifying and desalinating water, making it suitable for various applications, including drinking water, irrigation etc. At Delhi Inland Container Terminal - Sonipat, an RO plant is installed with a capacity of 500 litres per hour for the supply of drinking water for the entire terminal and the rejected RO water is used for flushing purposes.

- **Enhancing uses of recycled water from STPs**: Recycled water can be used for gardening, flushing, washing of equipment and cleaning of solar panels. At Visakha Container Freight Station, a single Sewage Treatment Plant (STP) unit of 16.5 kilolitre (kl) capacity is installed. 10 kl of STP water is generated daily, and used for gardening through drip irrigation and ~ 5kl of water is stored in a collection tank of an STP unit.

- **Rainwater harvesting**: Port terminals can collect and store rainwater for non-potable uses. At Delhi Inland Container Terminal

STP plant at Visakha Container Freight Station

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RO plant at Visakha Container Freight Station

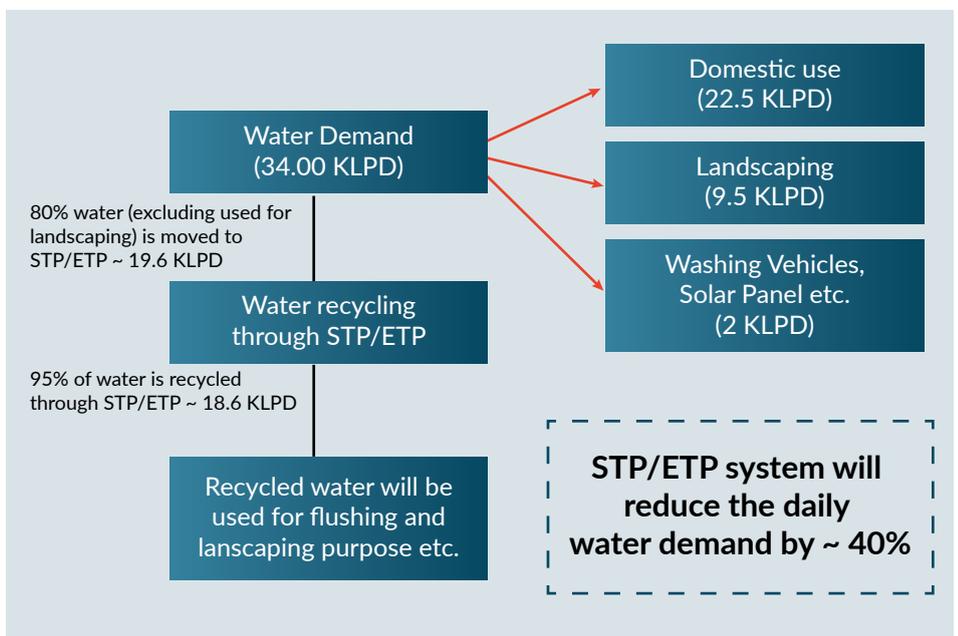| Project details - Tuticorin	
Item	**Description**
Water requirement	Water demand of ~ 34 kilolitres a day (KLD) is envisaged during the operation stage. This demand will be generated through domestic use, machinery and equipment washing and watering in landscaping area.
Sewage treatment plant	A zero liquid discharge STP system would be planned near toilet blocks and the building area. An STP of 10 KLD would be planned near admin building and another two compact STPs of 5 KLD capacity near the workshop and labour shed area. The provision for storage of treated water is also kept near each location of the proposed STP. The reuse of water through STP will reduce the daily water demand by ~40 percent
Effluent treatment plant	The compact size of the effluent treatment plant of ~2 KLD capacity is planned near the workshop at the rubber tyre gantry (RTG) washing area.
Rainwater harvesting	Underground tanks are proposed at 3 locations to store rainwater
Oil water separator	Planned near ETP plant next to the RTG washing area and workshop.
Zero liquid discharge	All STPs of zero liquid discharge are planned.

around 21 Rainwater Discharge Pits (RWDP) cover the entire facility premises. The Storm Water (SW) Drain is connected through a de-silt chamber to the RWDP. The water is drained through a perforated PVC pipe driven 8 to 10 feet above the ground water table. Through perforated sheets, the water is dispersed, and charges the underground water table to harvest more than 900 kl per annum.

- **Usage of brown water**: Recycled brown water is also used for firefighting purposes.

The above measures are helping achieve a 13.5 percent Y-o-Y reduction in total water consumption across all our terminals.

Initiatives for water sustainability at the upcoming Tuticorin Container Terminal: The projected demand for water consumption is determined, and water recycling is envisaged through the adoption of STP/ Effluent Treatment Plant (ETP).

Water Demand
(34.00 KLPD)

Domestic use
(22.5 KLPD)

Landscaping
(9.5 KLPD)

Washing Vehicles, Solar Panel etc.
(2 KLPD)

80% water (excluding used for landscaping) is moved to STP/ETP ~ 19.6 KLPD

Water recycling through STP/ETP

95% of water is recycled through STP/ETP ~ 18.6 KLPD

Recycled water will be used for flushing and lanscaping purpose etc.

STP/ETP system will reduce the daily water demand by ~ 40%

Rain water harvesting pit at Delhi Inland Container Terminal.

Ports & Logistics

How A Recent Storm Put The J M BAXI Team At Kandla Container Terminal To The Test

On 29th May, 2023 the day at Kandla Container Terminal started out like any other normal day as forecasted by the metrological department and port authority. The terminal had the SSL Bharat at berth number 12 with quay cranes 103, 104 and 105 in operation. Quay crane 101 was idle and secured with gantry brakes, and crane 102 was going through preventive maintenance with wheel chocks properly in place in accordance with standard operating procedures (SOP). At 1455 hours an unexpected and intense five-minute storm with rain and a cyclone-level wind of 40 meters per second struck Kandla port. The force stirred up coal dust, engulfing the area in complete darkness and zero visibility. This put a brake on all operations and maintenance activities, and the terminal team moved to safety within building areas.

As winds picked up speed, crane 102 began moving involuntarily. Crane operator Sandeep Singh and technical maintenance personnel, Mahima Singh, who were on standby at the quay crane checker cabin, attempted to halt the movement of the crane by adding more wedges to the wheel in a valiant attempt to protect the company's property. However, as the crane began gaining momentum, it surpassed the wheel stopper, eventually colliding with quay crane 105 which was deployed at berth 12. The impact of the collision resulted in the derailment of crane 102 and damages to crane 105.

Swift response plan and next steps

To begin with, the team present at site activated the emergency response plan (ERP) and tallied the headcount with the day's reporting strength, and gate entry sheet. After ensuring the safety of everyone, the team began taking stock of the situation and prioritising work. They first took into account how they would complete the operation of SSL Bharat, and ready it to sail at the next tide. One of the dependencies was the health of the quay cranes.

After taking stock of the damages, they put together a plan of action to reinstate the two affected cranes. This however was not an easy task – crane 105 due to the collision had damaged wheel brakes, gantry motors, gearbox and gantry buffers. The derailed crane
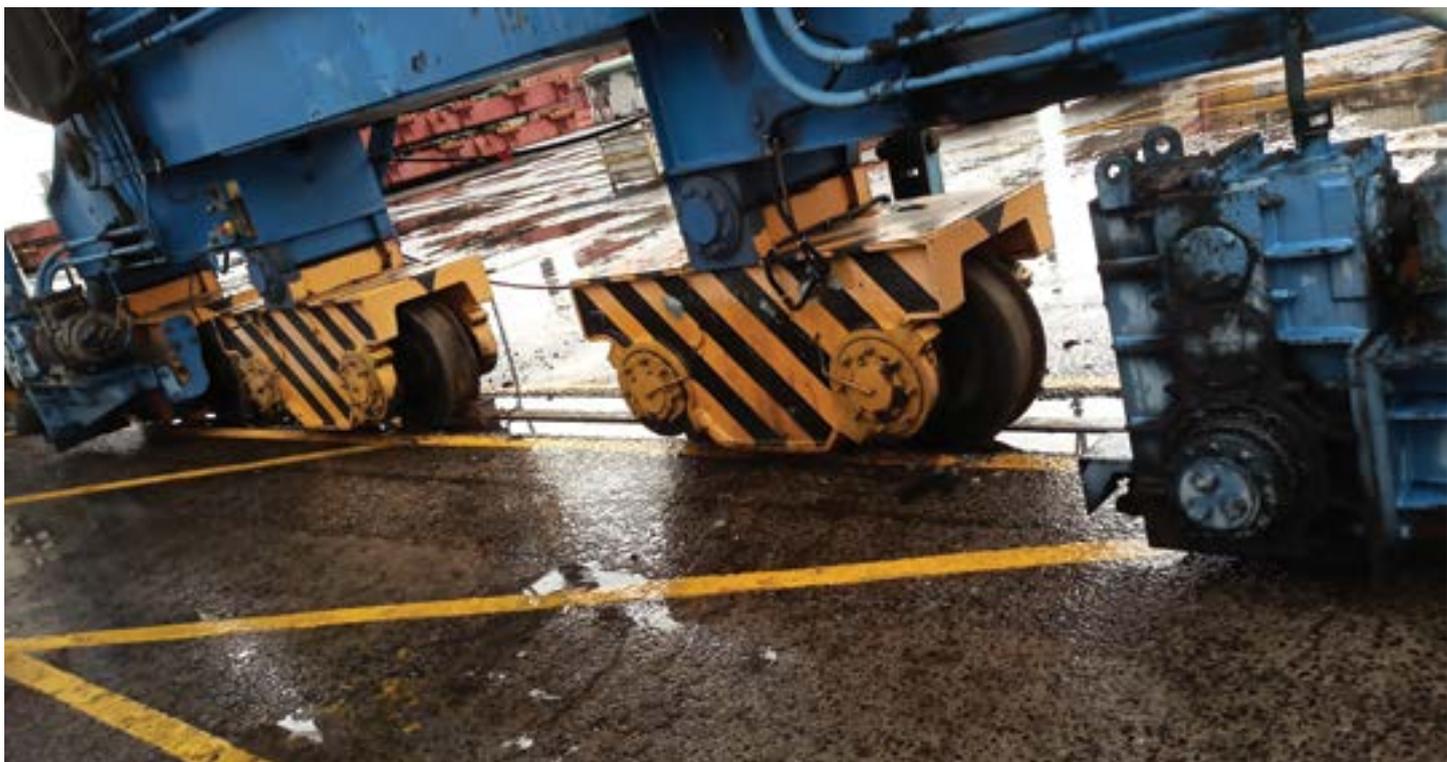
Ports & Logistics

102 too had damaged gantry motors, gantry buffers, cable reel diverters and spreader twist locks since the spreader was grounded.

The team powered both cranes, upon finding out that the high tension cables were in good shape. Crane 5's damaged motors were removed, and realigned with the remaining healthy motors and brakes. It was then deployed manually to help place the hatch covers onboard the SSL Bharat. Crane 2's booms were lifted to enable the ship to sail as per schedule.

The major challenge though was to somehow get the derailed crane back on track. Unfortunately, response and support from the crane manufacturer and other specialised agencies would mean a waiting period of a precious 72 hours or more. This is when the team decided to carry out the task on their own, in consultation with the terminal's COO and Regional Engineering head. After a team of engineers and support staff were mobilised from various locations, and checking with at least a dozen service providers for hydraulic jacks and power packs, the rerailing of the quay crane began less than 24 hours after the incident took place, and was completed on 31st May at 9 PM.

Setting sail

When the cyclone hit, 177 containers onboard the SSL Bharat were yet to be handled. Due to the commendable teamwork between the operations and engineering departments, vessel operations resumed using quay cranes 103 and 104. Six hatch covers each weighing 35 ton were placed on the vessel with the help of quay crane 5, under the supervision of the operations team.

Record setting

On the same evening of 31st May, two other vessels TCI Anand and Jairan berthed at the terminal - number 11 and 12 respectively, where operations on both vessels were conducted as usual. Shortly after, with no delays to the arriving vessels, the terminal achieved some important milestones on 4th June with the vessel, SCI Mumbai:

i.   All 5 quay cranes were deployed together for the first time on a single vessel.

ii. The terminal achieved the highest ever berth productivity of 100.07 moves per hour

iii. The J M Baxi team handled 2,838 TEU within 26 hours

In spite of multiple challenges, the terminal achieved a remarkable turnaround. That aside, the incident also showcased the Kandla Container team's commitment to excellence and dedication to its customers.
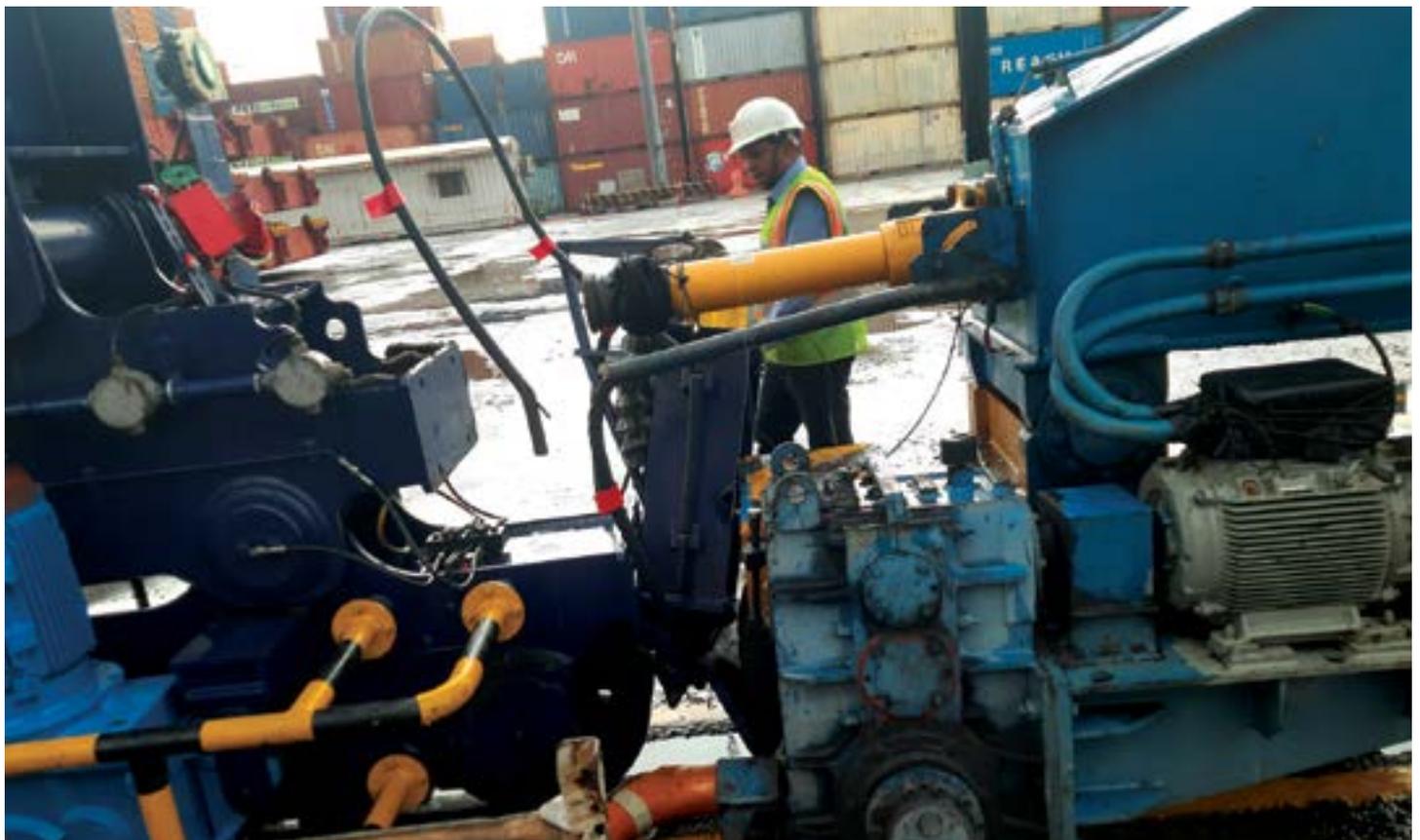
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J M Baxi Heavy Successfully Ferries The Heaviest And Longest Bridge For The MTHL

Cited as an engineering marvel, the Mumbai Trans-Harbour Link (MTHL) is one of India's major infrastructure projects. Set to be launched later in 2023, it is a 22-kilometer, 6-lane sea bridge that will connect South Mumbai to Raigad, a part of the mainland. Being a linear and densely populated city, Mumbai constantly struggles with traffic snarls. The bridge is expected to reduce travel time between Navi Mumbai and South Mumbai from the current two hours to 20 minutes. This will come as a major relief for a large section of the city's population.

Earlier this year, the J M Baxi Heavy team ferried via sea, varied-sized bridge spans for the project, including the heaviest and longest - weighing 2200 ton, spanning 180 meters, and a width of 14 meters. This portion of the bridge is the equivalent of around 15 blue whales and is close to the world's tallest statue in height.

J M Baxi Heavy was involved in the transport of various parts for the bridge project which were divided into 3 sections for fabrication. These were awarded in parts to separate companies – two to L&T IHI and one to Tata Daewoo.

With the L&T consortium, J M Baxi Heavy was involved in the handling of the vessel that arrived with smaller sections to the port, transporting them to the yard to assemble the sections into larger units. For Tata Daewoo, while the ask was the same, the J M Baxi Heavy team had to additionally ferry the cargo on barges including towing the barge from the Karanja jetty to the erection point. The barge was strengthened to bear a concentrated load, since the lift was to be done using four points.

The construction of this bridge is a marvel and has never been done

Ports & Logistics

in India. The bridge sections were fabricated in smaller sections across different countries - Japan, China, Indonesia and later shipped to Mumbai. The sections were then discharged, stored and transported to the fabrication yard located in Mumbai (for L&T) and Karanja (for Tata). Once the bridge sections were transported to the fabrication yard, they were assembled based on the span required and designed for installation work. The assembled sections varied from 40 meters to as long as 180 meters with weights ranging from 900 ton to 2200 ton. The assembled Orthotropic Steel Deck (OSD) was then loaded on the barge by using a skidding system/ trailer load out, as per the client's specification. Once loaded on the barge the barge was towed by tugs to the installation location. The barge was then slid into the gap between the 2 piers and then lowered onto the pier caps. This was the most critical part of the installation.

The barge, Aqua Float 330 was utilised for all heavy loadouts and for placement on the pier.

Fun facts about MTHL

It will be India's longest and the world's 10th-longest sea bridge to date.

Around 1,70,000 ton of steel bars, equivalent to the weight of 17 Eiffel Towers, have been used.

9,75,000 cubic meters of concrete, was used to construct the structure, which is six times the concrete used for the Statue of Liberty.

Ports & Logistics

J M Baxi Heavy Delivers Modules Safely From West To East Coast Of INDIA
Ahead Of Time

In a recent project, Larsen & Toubro (L&T) Hydrocarbon had to deliver six modules fabricated at two sites - Hazira (Gujarat) and Kattupalli (Tamil Nadu), to Vizag (Andhra Pradesh) before 30th April 2023. The two orders were exclusive of each other and had separate contractors. J M Baxi Heavy proposed to have the shipments handled under one order so that the modules could be shipped within its timeline and budget.

The team proposed to use a single 250 class barge that would load one module at Hazira, sail to Katupalli where it would load two modules, and deliver all the 3 modules to Vizag. The plan was to have the barge return back to Katupalli to load the next lot of 3 modules and return back to Vizag to discharge them. Once executed, the shipment would be completed within L&T's timelines.
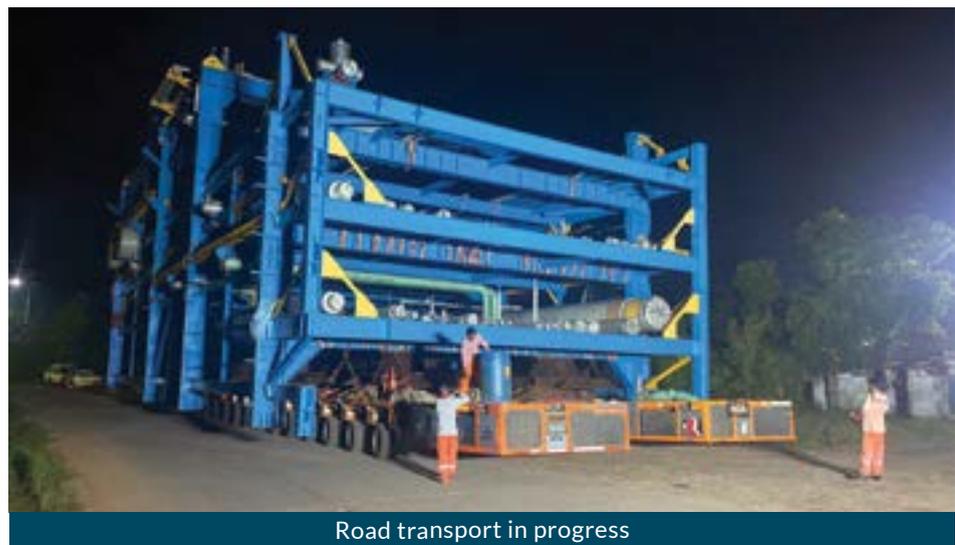
Road transport in progress

The schedule was shared with the L&T Baroda unit, with a commitment to deliver the cargo before 30th Apr 2023 at Vizag jetty.

On being awarded the contract, the J M Baxi Heavy team started planning how they would achieve the committed delivery date, and better it by reaching earlier. The most critical part of the operation was turning around Sri Lanka, where the tow tugs and barges normally face very strong currents and winds. The marine team prepared a chart of its travel plan and expected times of turning around Sri Lanka, so as to avoid the full moon / new moon as the weather gets rough during that period. It was decided that the barge and tug would halt just off the Indian coast before crossing around Sri Lanka, and then stop after crossing Sri Lanka to confirm that the tow was in shape for the rest of the journey.

The operation went as per schedule and the tow arrived at Katupalli on 31st March, about 3 days ahead of schedule. The J M Baxi Heavy transport team had already arrived at Katupalli earlier and was prepared with safety inductions and all the materials needed for mooring. At that point in time, the team was suddenly told that they would need to turn the barge around, within 48 hours so that the operation could be sped up. The L&T Jetty in Katupalli were

Proposed schedule	
A single barge	AF 250 with Tug Ivy
Sailing	7 Mar 23
Berthing	9 Mar 23
Loading / Lashing	10 / 11 Mar 23
Sailing	12 Mar 23
ETA MFFK	2 - 5 Apr 23 – All going well (agw)/ weather permitting (wp)
Loading / Lashing	3 to 6 Apr 23
Sailing	7 Apr 23
ETA Visag	11 - 12 Apr 23 - agw / wp
Discharge / Unlashing	13 to 16 Apr 23
Sailing	17 Apr 23
ETA MFFK	21 to 23 Apr 23 - agw / wp
Loading / Lashing	22 to 26 Apr 23
Sailing	27 Apr 23
ETA Visag	1 to 3 May 23 - agw / wp
Discharge / Unlashing	2 to 7 May 23

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expecting a vessel and hence were advised to finish the operation within 72 hours. The team planned the loading and within 24 hours, both the modules were loaded and lashing was completed the next afternoon. And with that, the vessel sailed in less than 48 hrs.

Since the voyage to Vizag takes four days, the team immediately planned the operation so that the stay in Vizag could be reduced to 2 days from the original 4 days. On arrival of the barge, the team were ready with axles and aligned to roll-off all 3 modules within 12 hours. With precise planning, the activity was completed and the barge sailed back for its second voyage to Katupalli to load the next lot of 3 modules.

Buoyed by the success of the first trip and the roll-off achievement, the team was now planning to load the three remaining equipment at Katupalli within 12 hours – a feat not achieved so far.

Meanwhile, the team in Mumbai began planning, and all the modules were transported close to the jetty and kept prepared so that load-out could be completed in 12 hours. The teams

Marine transportation in progress

were briefed of expectations, and a clear responsibility to achieve this task was communicated.

As the barge arrived, it was decided to berth it in the mediterranean position so that roll-on could commence at the earliest. The team were all aligned and with support from the L&T Katupalli team loading all 3 modules was achieved within 24 hrs. The vessel was immediately prepared with lashing and set sail to Vizag for discharge. Once again the team was able to discharge the 3 modules in Vizag within 12 hrs.

J M Baxi Heavy delivered all the 6 modules on 24th April 2023, almost 10 days ahead of its schedule and 6 days before the L&T deadline.

Key things that helped achieve this task:

1. Voyage planning was done in conjunction with the identified port of calls
2. Dates were identified and the list of possible obstacles were anticipated with troubleshooting measures in place
3. Teams were informed of their roles and timelines
4. Port teams were kept aware of the requirements for turning around the vessels as all loading would happen in the Mediterranean position. This would restrict port movement and hence was critical to avoid double port operations through proactive communication.

The team at J M Baxi Heavy through minute planning and agility, were able to reduce operation costs as port stays were reduced. Moreover, the use of a singular barge led to cost savings for the client.

Cargo loading on barge

Weights And Measures

INDIA Inching Towards Atmanirbharta In Pulses

Pulses production at a record 26.96 MMT

Import dependency of pulses came down from 19 percent in 2013-14 to around 9 percent in 2021-22; projected to drop down further to around 3 percent by 2030-31

Pulses are an important group of crops in India, due to their high protein levels and consumption demand. They are also important for trade as they yield profit and financial gains, being a large part of exports.

Indian pulses at a glance	
India's pulse production	India is the world's largest producer of pulses (25% of global production)
Pulse consumption	Largest consumer with 27% of global consumption
Pulse imports	Largest importers accounting for 14% of global trade of pulses
Major pulse crops	Gram (41% share), Tur (16% share), Urad and Moong are the major pulse crops grown in India
Top producing states	Rajasthan, Madhya Pradesh, Maharashtra, Uttar Pradesh, and Karnataka are the top producing states of pulses in India
Geographical conditions	Temperature: 20-27c, Rainfall: 25-60cm, Soil Type: sandy - loamy soil
Cropping pattern	These crops are mostly grown in rotation with other crops
Government schemes	National Food Security Mission for Pulses, Pulses Development Scheme, and Technological Mission on Pulses

India is inching towards Aatmnirbharta through sustained efforts by the government. India is the leading producer, consumer, and importer of pulses in the world. In recent years, the government has initiated several measures for boosting pulses production in the country with the aim of reducing the dependence on imports. As a result, the pulses production is steadily growing. There has been an increase in production from 19.26 million ton in 2013-14 to 27.81 million ton in 2022-23

Area, production and productivity

India is the largest producer (25 percent of global production), consumer (27 percent of world consumption) and importer (14 percent) of pulses in the world. Pulses account for around 20 percent of the area under foodgrains and contribute around 7-10 percent of the total food grains production in the country. Though pulses are grown in both Kharif and Rabi seasons, Rabi pulses contribute more than 60 percent of the total production. Gram is the most dominant pulse having a share of around 40 percent in total production followed by Tur/Arhar at 15 to 20 percent and Urad/Black Matpe and Moong at around 8-10 percent each. Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and Karnataka are the top five pulses producing states. Productivity of pulses is 764 kg/ha.

Imports

Pulses (Qty in Million Ton)			
Year	Imports	Exports	Production
FY'23	2.52	0.77	27.81
FY'22	2.77	0.41	27.3
FY'21	2.46	0.29	25.46
FY'20	2.97	0.23	23.03
FY'19	2.59	0.28	22.08

India imports dry peas and lentils mainly from Canada and the United States of America. Australia and Russia are the major suppliers of chickpeas to India. Large share of pulses, including urad bean, mung bean, pigeon peas is imported from Myanmar. Importers favour Myanmar because it offers varied pulses with qualities similar to those produced domestically, low freight rates, and relatively fast delivery.

During the last five years, an overall declining trend in the import of pulses has been witnessed. The volume of imports fell to the lowest level of around 2.46 MMT in 2020-21, which is the lowest in the last ten years. The government has put a huge focus on the import of tur and urad amid fears of a fall in their production. According to the second advance estimate of the agriculture ministry, the tur production for 2022-23 (July-June) is at 37 lakh ton compared to the actual production of 42 lakh ton last year. India meets nearly 15 percent of its domestic demand for pulses from imports. India is in advanced talks with Brazil for the import of urad, to boost domestic

Weights And Measures

supply and keep prices under control, and also reduce its dependency on Myanmar.

Free import policy for key pulses extended by a year

To ensure adequate domestic supplies of pulses, the government extended its decision to keep a 'free-import' policy for two varieties – tur and urad by a year, till 31st March 2024. The government in March 2022 had extended the 'free-import' policy for two varieties of pulses by a year. Under the regime, introduced in May last year, specified pulses can be imported without any quantitative restrictions.

In 2021 India signed an MoU with Mozambique for import of 0.2 MT of tur annually for five years. India also entered into a MoU with Malawi for the import of 0.05 MT tur per annum, till 2025. According to a notification issued

by the Directorate General Foreign Trade, import of pulses are allowed through five ports – Mumbai, Tuticorin, Chennai, Kolkata and Hazira. However, all the import consignments need to have the 'certificate of origin' issued by the respective countries.

Exports

There is a lot of demand for Indian pulses, especially desi chickpea, kabuli chana and lentils among others, from countries such as Bangladesh, Sri Lanka and Nepal. During the April-January period of the current financial year, pulses exports in terms of volume were up 80 percent at 5.39 lakh ton(lt). In the same period a year ago, exports were 3 lt. India's pulses exports for the financial year will likely scale a new record on rising demand for chickpea and lentils from countries such as China, United Arab Emirates (UAE) and Bangladesh. Along with the rising preferences for vegetarian and vegan

foods globally, and being the largest producer of varieties of pulses, India can cater to meet the increasing global demand for pulses.

Government intervention in pulses production

To increase the production of pulses, the National Food Security Mission (NFSM) -Pulses programme is being implemented in 644 districts of 28 States and Union Territories (UTs) of Jammu & Kashmir and Ladakh. Under this program, incentives are given to the farmer for cluster demonstration, seeds distribution and production of certified seeds of High Yielding Varieties (HYVs), farm machinery/ tools, efficient water-saving devices, plant protection chemicals, nutrient management, soil ameliorants and training to the farmers.

Global availability in the coming year is expected to be better with the

Weights And Measures

increase in production expected from Myanmar, where arrivals have started. Additionally, the intentions of sowing pulses in African countries indicate an increase in coverage area, making produce available from August 2023 onwards. This will keep the flow of pulses imports, consistent and can address concerns related to availability. There were a few suggestions related to speedily increasing domestic pulses production i.e. port clearance, exploring new geographies to minimise import dependency on a few countries, extension of a stable policy regime. The government conducts regular interactions with pulses associations in India and at major exporting countries to assess the pulse of pulses industry and initiate necessary policy measures.

The GOI also makes use of a variety of interventionist measures to manage the domestic pulses market situation in the name of farmer support, self-sufficiency, and food security. In an effort to control its domestic pulse market, India has continued to maintain politicised export controls, minimum support price, export subsidies, and a highly restrictive import regime consisting of quantitative restrictions and tariff hikes. All of these government measures, in conjunction with a thin market dominated by India's domestic situation where production is dictated by monsoon rains and weather conditions, make for a highly volatile market both domestically and internationally. This has been seen most recently with India's continually changing trade policy for pulses over the past few years.

Going forward

The demand for pulses is projected to grow at about 2 percent per year on account of the increase in population and growth in direct demand. This growth rate is almost four times the growth rate experienced in the domestic production of food grains including pulses during the last decade. This has created serious imbalances between domestic production and demand, which for some time was met by liquidating stocks and cutting down on exports. If the growth rate of domestic production of pulses fails to rise to the required level, it would result in an increase in dependence on imports to meet the domestic demand. Policy initiatives must lead to efficiency and help in maintaining a balance between domestic production and demand. If we strive to achieve these potential yield levels, then the increasing demand requirement of the country can be met in the future. To give the much-needed fillip to pulses production and increasing the production by about 5 million ton over the next seven years, diversion of area from rice may be necessary. If this expansion of area has to come in irrigated areas, a concerted policy is required to ensure remunerative price signals for pulses. Therefore the government is giving emphasis on pulses through various developmental programs and has been significantly increasing the minimum support price for most pulses. While the government and industry have come a long way in the sustenance of pulses, more will need to be done to ensure long-term sustainability.

Initiatives taken under NFSM - Pulses

- Support for breeder seed production of pulses.
- 150 Seed Hubs created at ICAR institutes, State Agriculture Universities (SAUs) and Krishi Vigyan Kendras (KVKs) for increasing certified seeds production of pulses
- Distribution of seed mini-kits of pulses free of cost to the farmers of the varieties notified within 10 years.
- ICAR/KVKs/SAUs conduct the demonstrations on improved latest package of practices.
- Assistance is provided to Central Seed Agencies to produce certified seed of latest varieties of pulses.
- A new scheme "Intercropping of pulses with sugarcane" was implemented in 12 States namely- Bihar, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Telangana, Uttar Pradesh and Uttarakhand during 2018-19 and 2019-20.
- Special Action Plan for increasing pulses productivity was implemented during 2019-20.
- Launched Targeting Rice fallow Area (TRFA) programme under NFSM in 11 states.

Port Statistics

SHIPPING AND CARGO PERFORMANCE										
QUARTERLY UPDATES ON INDIAN MAJOR AND MINOR PORTS (QTY IN MILLION TON) JAN - MAR 2023 V/S JAN - MAR 2022										

LIQUID COMMODITIES & GASES

	CRUDE OIL & OIL PRODUCTS		CHEMICALS & LUBES		EDIBLE OIL & MOLASSES		ACIDS		LIQUIFIED GASES	
	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022
No of Ships Called	1353	1323	601	655	372	318	167	174	414	383
Total Cargo handled	85.01	82.037	5.96	6.470	4.331	3.830	2.022	1.864	9.074	9.418
Import	66.09	62.247	3.67	4.045	3.951	3.434	1.952	1.740	8.822	9.021
Export	18.92	19.790	2.29	2.429	0.374	0.396	0.069	0.124	0.252	0.397

FINISHED FERTILISERS & FERTILISER RAW MATERIALS

	UREA		SULPHUR		ROCK PHOSPHATE		DAP		MOP	
	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022
No of Ships Called	43	29	13	4	55	24	34	32	7	17
Total Cargo handled	1.769	1.274	0.523	0.092	2.096	1.080	1.475	1.452	0.259	0.58
Import	1.769	1.274	0.222	0.092	2.096	1.080	1.475	1.452	0.259	0.588
Export	0	0	0.301	0	0	0	0	0	0	0

COAL AND COKE

	NON COKING COAL		COKING COAL		MET COKE		PET COKE		OTR GRADES OF COKE	
	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022
No of Ships Called	807	694	376	259	21	20	51	42	38	24
Total Cargo handled	54.019	49.921	19.289	13.762	0.7	0.633	2.483	1.913	0.804	0.427
Import	41.676	39.829	18.9	13.621	0.7	0.530	2.428	1.627	0.741	0.327
Export	12.343	10.092	0.389	0.141	0	0.103	0.055	0.286	0.063	0.100

OTHER BULK & BREAK BULK CARGO

	CEMENT		MINERALS		IRON ORE		STEEL PRODUCTS & PROJECT CARGO		GRANITE	
	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022
No of Ships Called	125	131	523	442	351	285	459	481	37	47
Total Cargo handled	1.982	1.784	17.91	17.322	22.324	18.932	3.974	4.918	0.944	1.094
Import	1.042	0.872	12.467	12.329	6.609	6.691	2.171	1.951	0	0.000
Export	0.949	0.912	5.444	4.993	15.714	6.609	1.803	2.967	0.944	1.094

AGRICULTURAL PRODUCTS & EXTRACTIONS

	SUGAR		RICE		SOYA BEAN MEAL		RAPE SEED MEAL		COPRA EXPELLER CAKE	
	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022	JAN - MAR, 2023	JAN - MAR, 2022
No of Ships Called	49	89	50	79	9	8	7	2	2	6
Total Cargo handled	1.558	2.701	1.532	2.280	0.265	0.160	0.247	0.063	0.013	0.055
Import	0.209	0.256	0	0.007	0.053	0.073	0	0.000	0.013	0.055
Export	1.349	2.445	1.532	2.274	0.212	0.087	0.247	0.063	0	0.000

* Total Cargo Includes Liquid Cargo , Bulk Cargo and Other Cargoes and Excludes Containers

Port Statistics

INDIAN PORT PERFORMANCE											
JAN - MAR 2023 V/S JAN - MAR 2022 CARGO THROUGHPUT (QTY IN MILLION TON)											
Ports	Types of Ports	NO. OF SHIPS		LIQUID CARGO		BULK CARGO		CONTAINERS (TEUS)		TOTAL CARGO *	
		JAN-MAR 2023	JAN-MAR 2022	JAN-MAR 2023	JAN-MAR 2022	JAN-MAR 2023	JAN-MAR 2022	JAN-MAR 2023	JAN-MAR 2022	JAN-MAR 2023	JAN-MAR 2022
KANDLA	PUBLIC	653	648	4.11	3.71	7.24	8.13	127,896	126,769	11.35	11.84
MUMBAI	PUBLIC	498	501	8.02	7.79	2.05	2.08	1,412,546	1,549,259	10.07	9.87
JNPT	PUBLIC	204	170	1.49	1.47	0.44	0.41	94,807	0	1.93	1.88
MORMUGAO	PUBLIC	120	114	0.25	0.14	4.54	3.92	0	0	4.79	4.06
MANGALORE	PUBLIC	377	368	7.46	7.59	3.41	3.00	0	0	10.87	10.58
COCHIN	PUBLIC	287	307	6.01	5.65	0.34	0.43	180,321	174,907	6.35	6.08
TUTICORIN	PUBLIC	191	207	0.42	0.38	5.67	3.51	48,197	37,654	6.10	3.89
CHENNAI	PUBLIC	246	206	4.12	4.04	0.95	1.18	395,252	370,226	5.07	5.22
ENNORE	PUBLIC	187	193	0.97	1.16	6.77	6.46	126,545	127,177	7.74	7.62
VISAKHAPATNAM	PUBLIC	396	459	3.96	3.97	10.43	10.88	128,377	148,642	14.38	14.85
PARADIP	PUBLIC	694	536	10.14	9.79	27.11	21.38	2,833	3,291	37.25	31.17
HALDIA	PUBLIC	470	429	3.46	3.69	6.13	4.58	39,099	31,687	9.58	8.27
KOLKATA	PUBLIC	14	17	0.01	0.01	0.01	0.03	138,262	135,103	0.02	0.05
GANGAVARAM	PRIVATE	121	72	0.00	0.00	7.16	4.87	0	0	7.16	4.87
PIPAVAV	PRIVATE	126	112	0.29	0.24	1.97	2.12	163,490	199,326	2.26	2.36
MUNDRA	PRIVATE	1020	805	7.19	5.89	4.91	7.10	1,619,028	1,752,212	12.10	12.99
BEDI	PUBLIC	23	15	0.00	0.00	1.38	0.70	0	0	1.38	0.70
DAHEJ	PRIVATE	152	162	3.96	4.66	2.65	2.36	0	0	6.61	7.03
HAZIRA	PUBLIC	190	227	0.85	0.91	5.86	7.06	140,223	184,294	6.71	7.97
NAVLAKHI	PUBLIC	36	36	0.00	0.00	1.87	1.73	0	0	1.87	1.73
KAKINADA	PRIVATE	154	182	0.50	0.68	2.74	3.41	371	9,628	3.24	4.09
SIKKA	PRIVATE	400	381	33.13	32.34	0.00	0.05	0	0	33.13	32.39
VADINAR	PRIVATE	47	41	0.00	7.363	0.00	0.00	0	0	0.00	7.36
KRISHNAPATNAM	PRIVATE	207	182	0.36	0.27	11.39	8.45	10,421	36,635	11.75	8.71
KATTUPALLI	PRIVATE	22	18	0.07	0.00	0.20	0.13	142,731	173,519	0.27	0.13
BHOGAT	PRIVATE	7	7	0.58	0.54	0.00	0.00	0	0	0	0.54

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