EXECUTIVE SUMMARY

- Ports in India handle around 95 per cent of international trade volume of the country. Increasing trade activities and private participation in port infrastructure is set to support port infrastructure activity in India.
- India has 12 major ports. Under the National Perspective Plan for Sagarmala, six new mega ports will be developed in the country.
- The major ports had a capacity of 1,477 million tonnes by FY19P. The Maritime Agenda 2010-20 has a 2020 target of 3,130 MT of port capacity.
- In FY19, major ports in India handled 699.05 million tonnes of cargo traffic, implying a CAGR of 2.74 per cent during FY08-19. Cargo traffic handled stood at 60.07 million tonnes in April 2019T.

*Note: P – Provisional, T-Tentative, *up to April 2019
*Source: Ministry of Shipping - GOI, Care Ratings, Indian Ports Association*
EXECUTIVE SUMMARY

- India’s 200 non-major ports are strategically located on the world’s shipping routes.
- Trade to boost demand for containers. In FY18 container traffic in India (for major ports) increased by 8.08 per cent year-on-year to 9,135 TEUs. In FY19, it reached 9,876 TEUs, implying a growth of 8.08 per cent year-on-year. India’s containerised trade grew 10 per cent year-on-year between Jul-Sep 2018.
- Infrastructural development to increase demand for iron and steel. In FY19, iron ore^ traffic at major ports reached 40.69 million tonnes.

Notes: TEU – Twenty Foot Equivalent Unit, ^ - Including pellets, T-Tentative, *up to April 2019
Source: Ministry of Shipping – GOI, Indian Ports Association
ADVANTAGE INDIA
In FY19, Major ports reported a growth of 2.90 per cent and handled 699.05 million tonnes of cargo.
Over FY16-19, the traffic at major ports has increased at a CAGR of 4.86 per cent.
Ports sector in India has received a cumulative FDI of US$ 1.64 billion between April 2000 and December 2018.

Total investment in Indian ports by 2020 is expected to reach US$ 43.03 billion.
Non-major ports are set to benefit from strong growth in India’s external trade
Special Economic Zones are being developed in close proximity to several ports – comprising coal-based power plants, steel plants and oil refineries

India has a coastline which is more than 7,517 km long, interspersed with more than 200 ports.
Most cargo ships that sail between East Asia and America, Europe and Africa pass through Indian territorial waters.
India is the largest importer of thermal coal in the world.

The government has initiated NMDP, an initiative to develop the maritime sector; the planned outlay is US$ 11.8 billion
FDI of 100 per cent under the automatic route and a 10 year tax holiday for enterprises engaged in ports
Plans to create port capacity of around 3,200 MMT to handle the expected traffic of about 2,500 MMT by 2020

Note: NMDP – National Maritime Development Programme, FDI – Foreign Direct Investment, MMT – Million Metric Tonnes
Source: Report of the Task force on Financing Plan for Ports, Government of India, Indian Ports Association, Ministry of Shipping
MARKET OVERVIEW
CATEGORIES OF PORTS IN INDIA

Ports in India (September, 2018)

**Major**
- There are 12 major ports in the country; 6 on the Eastern coast and 6 on the Western coast
- Major ports are under the jurisdiction of the Government of India and are governed by the Major Port Trusts Act 1963, except Ennore port, which is administered under the Companies Act 1956

**Non-major (minor)**
- India has about 205 non-major ports of which 68 handled cargo in 2017-18.
- Non-major ports come under the jurisdiction of the respective state Governments’ Maritime Boards (GMB)

Source: Ministry of Shipping
MAJOR PORTS IN INDIA

Note: JNPT – Jawaharlal Nehru Port Trust
Cargo traffic at major ports in India:

- Stood at 699.05 million tonnes in FY19, growing at a CAGR of 2.74 per cent from FY08-19.
- Traffic at major ports reached 60.07 million tonnes in FY20T*.
- In March 2017, 16 new cargo scanners were installed across major ports in India. In the 1st phase, 5 of the 12 major ports i.e. Kamarajar (Ennore), New Mangalore, JNPT, Kolkata and Vizag will receive the scanners.

Note: FY – Indian Financial Year (April–March), *up to April 2019, ^CAGR is up to FY19
Source: Ministry of Shipping
Non-major ports are evolving faster than major ports:

- Non-major ports are gaining shares and a major chunk of traffic has shifted from major ports to non-major ports.
- The contribution of non-major port’s traffic to total traffic rose to 45 per cent in FY19P*.

Cargo traffic at non-major ports –

- Reached 281.0 million tonnes in FY19P*.
- Increased at 10 per cent CAGR between FY07-18.

Note: P – Provisional, *up to September 2018
Source: Ministry of Shipping
CARGO PROFILE AT MAJOR PORTS IN INDIA … (1/2)

Cargo at major ports in FY16

- Solid: Share: 46.4%
  - Iron ore: Share: 2.1%
  - Coal: Share: 22.7%
  - Fertilizer: Share: 2.6%
  - Other cargo: Share: 18.9%

- Liquid (petroleum, oil and lubricants): Share: 33.3%

- Container: Share: 20.3%

Cargo at major ports in FY19

- Solid: Share: 41.7%
  - Iron ore: Share: 5.8%
  - Coal: Share: 23.1%
  - Fertilizer: Share: 2.2%
  - Other cargo: Share: 10.6%

- Liquid (petroleum, oil and lubricants): Share: 37.5%

- Container: Share: 20.8%

Note: Data for FY20 will be updated after March 2020

Source: Ministry of Shipping
Solid cargo contributes the largest share to all traffic handled at major ports in India, followed by liquid cargo and containers.

Over FY08-19, CAGR in the volume of different segments was as follows—
- Solid cargo was 1 per cent
- Liquid cargo was 4 per cent
- Container cargo was 4 per cent

Cargo traffic during FY19 for solid, liquid and container cargo was 292 MT, 262 MT and 145 MT, respectively.

Source: Ministry of Shipping; Indian Ports Association
INCREASE IN CAPACITY AND PROFITS OVER THE YEARS

Net Profit and Operating Margin at Major Ports

- Net profit at major ports has increased from Rs 1,150 crore (US$ 178.4 million) in FY13 to Rs 3,413 crore (US$ 529.6 million) in FY18 while operating margin increased from 23 per cent to 44 per cent.
- Capacity at major ports is expected to grow to 1,477 million tonnes in FY19 from 505 million tonnes in FY07.
- Utilisation rates of major ports in India such as JNPT port, Kandla port, Ennore port, etc., are much above the world’s average.
- 12 Major Ports were identified under Sagarmala project, for cargo handling till 2035. The objective of this project is to promote port led development and to provide infrastructure to quickly transport goods to and from ports, with higher efficiency and at lower cost.
- As of January 2019, Paradip port is expected to increase cargo handling to 110 MMT in FY19 compared to handling 102 MMT of cargo the previous year.
- As of February 2019, Shapoorji Pallonji Group, business conglomerate, sees the Gopalpur port capacity to reach 55 million tonnes (mt) by 2025.
- Employment of Indian seafarers on Indian and foreign ships witnessed a growth of 35 per cent in 2018. India ranks third in the largest seafarer supplying country in the world maritime industry.

Note: 2017-18 capacity utilisation for major ports has been calculated by dividing capacity by traffic, FY19 Capacity is provisional, FY19* traffic is up to September 2018
Source: Ministry of Shipping; Indian Ports Association (IPA), Aranca Research
DROP IN TURNAROUND TIME

- Average turnaround time is influenced by factors such as type of cargo, parcel size and entrance channel.
- Turnaround time at major ports in India has decreased at a rapid pace from 107 hours in FY12 to 72 hours in FY19P*.

Note: Turnaround time – Total time spent by a ship from entry into port until departure, P-Provisional, * - up to September 2018
Source: Ministry of Shipping, Indian Port Association
RECENT TRENDS AND STRATEGIES
## NOTABLE TRENDS

### Increasing private participation
- Strong growth potential, favourable investment climate and sops provided by state governments have encouraged domestic and foreign private players to enter the Indian ports sector. In addition to the development of ports and terminals, the private sector has extensively participated in port logistics services.

### Setting up of port-based SEZs
- SEZs are being developed in close proximity to several ports, thereby providing strategic advantage to industries within these zones. Plants being set up include –
  - Coal-based power plants to take advantage of imported coal
  - Steel plants and edible oil refineries
- Development of SEZs in Mundra, Krishnapatnam, Rewas and few others is underway.

### Focus on draft depth
- All the greenfield ports are being developed at shores with natural deep drafts and the existing ports are investing on improving their draft depth.
- Higher draft depth is required to accommodate large sized vessels. Due to the cost and time advantage associated with the large sized vehicles, much of the traffic is shifting to large vessels from smaller ones, especially in coal transportation.

### Ports to operate on Green energy
- Government of India is targeting to make the country the first in the world to operate all 12 major domestic government ports on renewable energy. The government plans to install almost 200 MW wind and solar power generation capacity by 2019 at the ports. The energy capacity could be ramped up to 500 MW in future years.

**Note:** SEZ – Special Economic Zone, PPP – Public-Private Partnership  
**Source:** Ministry of Shipping
### NOTABLE TRENDS

#### Specialist terminal-based ports
- **Terminalisation**: Focus on terminals that deal with a particular type of cargo
  - This is useful for handling specific cargo such as LNG that requires specific equipment and hence high capital costs. Forming specialist terminals for such cargo result in optimal use of resources and increased efficiencies
  - Examples of specialist terminals: ICTT in Cochin, LNG terminal in Dahej Port

#### Sanitation
- The Haldia Port of West Bengal was rated as the cleanest port among all the major ports in the 1st ever ranking by the Ministry of Shipping. The ranking of major 13 Indian ports was conducted by the Quality Council of India (QCI) during the ‘Swachhta Pakhwada’.

#### ‘Landlord port’ model
- To promote private investments, the government has reformed the organisational model of seaports –
  - From: A ‘service port’ model where the port authority offers all the services
  - To: A ‘landlord port’ model where the port authority acts as a regulator and landlord while port operations are carried out by private companies
  - Major ports following ‘landlord port’ model: JNPT, Chennai, Visakhapatnam and Tuticorin

#### Rising traffic at non major ports
- With the increasing private participation in establishing minor ports. Cargo traffic handled by the minor ports are outpacing cargo traffic at major ports.

#### Coastal Economic Zones
- The Government of India is planning to build 14 CEZs in the country to boost manufacturing and jobs. In November 2017, the first mega CEZ at the Jawaharlal Nehru Port in Maharashtra was cleared.

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**Note:** ICTT – International Container Transshipment Terminal, LNG – Liquefied Natural Gas, MMT – Million Metric Tonnes

**Source:** Aranca Research
### STRATEGIES ADOPTED

#### Allied activities
- Adani group, largest private port operator in India, is now venturing into providing allied services like dredging. Its dredgers which were being used only at its own ports in the past have now started taking work from other ports.

#### Container train operations
- Adani group has also ventured into the container railway business becoming the largest private link in the country. It conducts operations on a pan-India basis operating six container rakes.

#### Modernising
- Port authorities are modernising and upgrading port facilities to meet the needs of the port users in competitive environment. Indian Ports Association (IPA) launched a cloud based community system called ‘PCS1x’.

#### Pan-India presence
- After having a strong advantage on India’s West coast, Adani Ports and Special Economic Zone Ltd (APSEZ) is looking to strengthen its position by winning the bid of a new container terminal at Ennore port located on the east coast. Furthermore Adani Ports has acquired Dharma Port to replicate its development and growth on the eastern coast.
- Essar Ports Ltd as a part of it strategic move to increase its potential on the east coast has won the contract for the modernisation of 3 ports at Visakhapatnam.
- Essar Ports Ltd., a leading port operator, plans to build a port in Gujarat with investments worth US$1.49 billion. For the same, the company has signed a MoU with Gujarat Maritime Board (GMB).

#### Geographic diversification
- Geographic diversification as in the case of Adani group acquiring coal mines (Australia and Indonesia) and setting up coal terminal in Australia to take the benefit of increasing coal imports in India.
- Adani Group is going to develop a new container terminal in Myanmar, its second international port after Australia, and has committed investments worth US$ 290 million towards it.

*Source: Company websites, Press Trust of India*
GROWTH DRIVERS
AND OPPORTUNITIES
SECTOR BENEFITS FROM STRONG DEMAND, PRIVATE PARTICIPATION

Policy support

- Increasing trade activities resulting in container traffic
- Rising demand for coal and other commodities
- Growing crude imports by the country

Growing demand

- National Maritime Development Programme and National Maritime Agenda
- FDI of up to 100 per cent under the automatic route
- Various sops and incentives for private players to build ports

Innovation

- Expanding port development and distribution facilities in India
- Use of modern technology
- Providing support to global projects from India

Increasing investments

- Increasing investments in building ports and related activities
- Private equity supporting private port developers
- Increasing investments by foreign players
Ports handle almost 95 per cent of trade volumes; thus rising trade has contributed significantly to cargo traffic.

India’s total external trade\(^1\) grew to US$ 838.46 billion in FY19, implying a CAGR of 5.53 per cent since FY09. Merchandise exports during the year were US$ 331.02 billion while imports reached US$ 507.44 billion.

India’s merchandise exports and imports stood at US$ 26.07 billion and US$ 41.40 billion, respectively, in April 2019.

Increasing trade is translating into higher demand for containerisation due to their efficiency.

Notes: \(^1\)merchandise trade, \(^\text{\textcopyright}{\text{CAGR}}\) is till FY19, \(^\text{\textcopyright}{\text{up to April 2019}}\)

Source: Ministry of Commerce and Industry - GOI
A consequence of strong GDP growth has been rising energy demand; the country currently meets about 75 per cent of total crude oil demand by imports.

India’s crude oil & petroleum products imports touched 259.17 million metric tonnes in FY19, implying a CAGR of 7.12 per cent over FY08-19.

Private ports have been especially good at attracting crude import traffic.

Solid cargo has been a major contributor to total traffic at major ports and contributed 41.7 per cent in FY19.

Notes: MMT – Million Metric Tonnes POL – Petroleum, Oil, and Lubricants, ^ - up to September 2018
Source: Handbook of Indian Statistics (RBI), Petroleum Planning and Analysis Cell, Ministry of Shipping
## INCREASING CONNECTIVITY

### Road Connectivity Projects Under Sagarmala

<table>
<thead>
<tr>
<th>State</th>
<th>Number of Projects</th>
<th>Length (km)</th>
<th>Cost (US$ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gujarat</td>
<td>4</td>
<td>690</td>
<td>3</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>14</td>
<td>2,351</td>
<td>8.33</td>
</tr>
<tr>
<td>Goa</td>
<td>2</td>
<td>110</td>
<td>0.21</td>
</tr>
<tr>
<td>Karnataka</td>
<td>7</td>
<td>781</td>
<td>0.95</td>
</tr>
<tr>
<td>Kerala</td>
<td>21</td>
<td>220</td>
<td>0.69</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>19</td>
<td>1,913</td>
<td>8.50</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>36</td>
<td>2,184</td>
<td>4.68</td>
</tr>
<tr>
<td>Odisha</td>
<td>4</td>
<td>62</td>
<td>0.10</td>
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<tr>
<td>West Bengal</td>
<td>5</td>
<td>275</td>
<td>1.44</td>
</tr>
</tbody>
</table>

### Rail Connectivity Projects under Sagarmala

<table>
<thead>
<tr>
<th>Status</th>
<th>Number of Projects</th>
<th>Length (km)</th>
<th>Cost (US$ billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>13</td>
<td>426</td>
<td>0.40</td>
</tr>
<tr>
<td>Under Implementation</td>
<td>27</td>
<td>1,967</td>
<td>2.92</td>
</tr>
<tr>
<td>Pre-Implementation</td>
<td>30</td>
<td>1,854</td>
<td>3.93</td>
</tr>
</tbody>
</table>

### Multi modal Logistics Parks Under Sagarmala

<table>
<thead>
<tr>
<th>Status</th>
<th>Number of Parks</th>
<th>Cost (US$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>1</td>
<td>18.62</td>
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<tr>
<td>Under Implementation</td>
<td>9</td>
<td>267.65</td>
</tr>
<tr>
<td>Pre-Implementation</td>
<td>5</td>
<td>266.41</td>
</tr>
</tbody>
</table>

- Enhancing connectivity to the ports and last mile connectivity are one of the main focus areas under Sagarmala programme.
- Road connectivity projects worth Rs 179,761 crore (US$ 27.89 billion) are being implemented in coastal states.
- More than 50 per cent of rail connectivity projects identified under the programme are already in implementation stage.
- Increased connectivity on these fronts will be major driver for traffic at Indian ports.

Source: Ministry of Shipping
### NATIONAL MARITIME AGENDA 2010–2020

<table>
<thead>
<tr>
<th>Increasing capacity</th>
<th>• To create a port capacity of around 3,500 MT to handle the expected traffic of about 2,500 MT by 2025.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing investments</td>
<td>• Proposed investments in major ports by 2020 are expected to total US$ 18.6 billion, while those in non-major ports would be US$ 28.5 billion. The government is also working to float a specialised Maritime Finance Corporation with the equity of ports and financial institutions to fund the Port projects</td>
</tr>
<tr>
<td></td>
<td>• Gujarat ports attract Indian and foreign firm investments of about Rs 36,000crores (US$ 4.98 billion)</td>
</tr>
<tr>
<td>World-class infrastructure</td>
<td>• To implement full mechanisation of cargo handling and movement at ports, thereby bringing Indian ports on par with the best international ports in terms of performance and capacity</td>
</tr>
<tr>
<td>Landlord ports</td>
<td>• Major ports have been working towards implementing ‘Landlord port’ concept duly limiting their role to maintenance of channels and basic infrastructure leaving the development, operation, management, of terminal and cargo handling facilities to the private sector</td>
</tr>
<tr>
<td>Strategically building ports</td>
<td>• To develop two major ports (one each on East and West coast) to promote trade as well as two hub ports (one each on the West coast and the East coast) – Mumbai (JNPT), Kochi, Chennai and Visakhapatnam</td>
</tr>
<tr>
<td></td>
<td>• Master plans for 142 capacity expansion projects worth Rs 91,434 crore (US$ 14.19 billion) have been prepared by the Government of India under the Sagarmala programme.</td>
</tr>
<tr>
<td></td>
<td>• As of March 2018, projects worth Rs 1.85 lakh crore (US$ 28.70 billion) had been awarded under Sagarmala programme.</td>
</tr>
<tr>
<td>Bringing ports under regulator</td>
<td>• To establish a port regulator for all ports in order to set, monitor and regulate service levels, technical and performance standards</td>
</tr>
</tbody>
</table>

*Source: Ministry of Shipping*
## FAVOURABLE POLICIES ASSISTING THE PRIVATE SECTOR

| De-licensing and tax holidays | - The government has allowed FDI of up to 100 per cent under the automatic route for projects related to the construction and maintenance of ports and harbours  
- A 10-year tax holiday to enterprises engaged in the business of developing, maintaining, and operating ports, inland waterways and inland ports |
| Price flexibility | - Private ports enjoy price flexibility, as the government allows non-major ports to determine their own tariffs in consultation with the State Maritime Boards; at major ports, tariffs are regulated by the Tariff Authority for Major Ports (TAMP) |
| Model Concession Agreement (MCA) | - An MCA has been finalised to bring transparency and uniformity to contractual agreements that major ports would enter into with selected bidders for projects under the Build, Operate and Transfer (BOT) model  
- In March 2018, a revised MCA was approved by Government of India to make major ports in the country more investor friendly. |
| Major Port Authorities Act, 2016 | - Primary focus of the scheme is to allow future public-private partnership operators to fix tariffs. With the implementation of this policy, port authorities will get the power to lease land for port-related use for up to 40 years and for non-port related use up to 20 years |
| Favourable system | - Expansion of existing framework to attract participation from the private sector for development of infrastructure facilities such as dredging, road infrastructure, creation of SEZ and development of integrated parking zones in the port area.  
- In May 2018, Ministry of Shipping allowed foreign flagged ships to carry containers for transhipment. |
| Project UNNATI | - Project UNNATI has been started by Government of India to identify the opportunity areas for improvement in the operations of major ports. Under the project, 116 initiatives were identified out of which 91 initiatives have been implemented as of November 2018. |

*Source: Ministry of Shipping, Indian Ports Association*
Essar Ports will invest US$ 70 million in Hazira port by 2020.


39 Public Private Partnership (PPP) projects are operational at a cost of around US$ 2219.4 million and capacity of 240.72 Million Tonnes Per Annum (MTPA). 32 PPP projects at an estimated cost of around US$ 3917.6 Million and capacity 264.77 Million Tonnes Per Annum (MTPA) awarded and are under implementation.

In May 2017, DP World has agreed to develop Indian port projects and plans to sign an MoU with the National Investment and Infrastructure Fund (NIIF), the Indian wealth fund. The projects worth US$ 1.3 billion include the development of Sagarmala and Bharatmala projects.

In January 2017, a new container service, operated by K Line, commenced operations between CITPL (Chennai International Container Terminals Pvt. Ltd) at Chennai port and the Far East.

National Green Tribunal has given nod for construction of multi-crore ‘Vizhinjam International Seaport Ltd (VISL)’. The port is being developed by Adani Group in collaboration with Kerala Government.

**Note:** PPP – Public Private Partnership

**Source:** Ministry of Shipping, EY
## STRONG PRIVATE SECTOR PARTICIPATION IN PORTS PROJECTS … (2/2)

<table>
<thead>
<tr>
<th>Terminals in major ports with private sector involvement</th>
<th>Port agency</th>
<th>Estimated cost (US$ million)</th>
<th>Key private sector companies</th>
<th>Ports they developed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Container terminal, Ennore</td>
<td>Ennore</td>
<td>293.1</td>
<td>Maersk</td>
<td>JNPT (Mumbai)</td>
</tr>
<tr>
<td>LNG terminal, Cochin</td>
<td>Cochin Port Trust</td>
<td>729.1</td>
<td>P&amp;O Ports</td>
<td>JNPT, (Mumbai and Chennai)</td>
</tr>
<tr>
<td>Container terminal, NSICT</td>
<td>JNPT</td>
<td>156.3</td>
<td>Dubai Ports International</td>
<td>(Cochin and Vishakhapatnam)</td>
</tr>
<tr>
<td>Oil jetty related facilities (Vadinar)</td>
<td>Kandla Port Trust</td>
<td>156.3</td>
<td>PSA Singapore</td>
<td>Tuticorin</td>
</tr>
<tr>
<td>Third container terminal (Mumbai)</td>
<td>JNPT</td>
<td>187.5</td>
<td>Adani</td>
<td>Mundra</td>
</tr>
<tr>
<td>Crude oil handling facility (Cochin)</td>
<td>Cochin Port Trust</td>
<td>146.5</td>
<td>Maersk</td>
<td>Pipavav</td>
</tr>
<tr>
<td>ICTT at Vallarpadam (Cochin)</td>
<td>Cochin Port Trust</td>
<td>262.9</td>
<td>Navyuga Engineering Company Ltd</td>
<td>Krishnapatnam</td>
</tr>
<tr>
<td>Construction of SPM captive berth (Paradip)</td>
<td>Paradip Port Trust</td>
<td>104.2</td>
<td>DVS Raju group</td>
<td>Gangavaram</td>
</tr>
<tr>
<td>Development of second container terminal (Chennai)</td>
<td>Chennai Port Trust</td>
<td>103.1</td>
<td>JSW</td>
<td>Jaigarh</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Marg</td>
<td>Karaikal</td>
</tr>
</tbody>
</table>

**Note:** NSICT – Nhava Sheva International Container Terminal, Mumbai, ICTT – International Container Transshipment Terminal, SPM – Single Point Mooring  
**Source:** Indian Ports Association
**OPPORTUNITIES**

### Increasing Scope for Private Ports
- With rising demand for port infrastructure due to growing imports (crude, coal) and containerisation, public ports (major ports) will fall short of meeting demand.
- This provides private ports with an opportunity to serve the spill-off demand from major ports and increase their capacities in line with forecasted new demand.
- Cochin Port Trust (CPT) announced measures to increase its revenue by generating higher container traffic and increasing the number of passenger liners. CPT is also planning to setup a small industrial port at the southern end of Willingdon Island to boost business.

### Ship repair facilities at ports
- Dry docks are necessary to provide ship repair facilities. Out of all major ports, Kolkata has 5 dry docks, Mumbai and Visakhapatnam have 2; the rest have 1 or no dock at all.
- Given the positive outlook for cargo traffic and the resulting increase in number of vessels visiting ports, demand for ship repair services will go up. This will provide opportunities to build new dry docks and setup ancillary repair facilities.
- Potential market size of ship repair in India is around Rs 2,500-3,000 crore (US$ 388-466 million) of which around Rs 1,000-1,500 crore (US$ 155-233 million) has been tapped as of 2017.

### Port support services
- Operation and maintenance services such as pilotage, dredging, harbouring and provision of marine assets such as barges and dredgers are expected to increase in coming years.
- Increasing investments and cargo traffic point to a healthy outlook for port support services.
- These include Operation and Maintenance (O and M) services like pilotage, harbouring and provision of marine assets like barges and dredgers.
- JNPT in Navi Mumbai signed an agreement with Development Bank of Singapore and State Bank of India, for external commercial borrowing worth US$ 400 million for expansion of road network connecting the port.

*Note: OandM – Operations and Maintenance
Source: Ministry of Shipping*
KEY INDUSTRY ORGANISATIONS
<table>
<thead>
<tr>
<th>Indian Ports Association (IPA)</th>
<th>Indian Private Ports and Terminals Association</th>
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</thead>
<tbody>
<tr>
<td>Address: 1st floor, South Tower, NBCC Place</td>
<td>Address: Darabshaw House, Level-1, N.M. Marg, Ballard Estate, Mumbai 400 001, India</td>
</tr>
<tr>
<td>Bhishma Pitamah Marg, Lodi Road</td>
<td>Tel. No: 022-22610599</td>
</tr>
<tr>
<td>New Delhi – 110 003</td>
<td>Fax. No: 022-22621405</td>
</tr>
<tr>
<td>Phone: 91-11-24369061, 24369063, 24368334</td>
<td>Email: <a href="mailto:secretary@ippta.org.in">secretary@ippta.org.in</a></td>
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<tr>
<td>Fax: 91-11-24365866</td>
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<tr>
<td>E-mail: <a href="mailto:ipa@nic.in">ipa@nic.in</a>, <a href="mailto:ipadel@nda.vsnl.net.in">ipadel@nda.vsnl.net.in</a></td>
<td></td>
</tr>
</tbody>
</table>
USEFUL INFORMATION
NOTES

- Major and non-major ports do not have a strict association with traffic volumes. The classification has more of an administrative significance.
- Cargo traffic includes both loading (export) and unloading (imports) of goods.
- Containerisation is the increased use of container for transporting non-bulk goods. It leads to increased efficiency (both time and money).
- Turnaround time is the total time spent by a ship from entry into port till departure.
- Twenty Equivalent Units (TEU) is a standard measure of containers which are 20 feet in length and 8 feet in width; the height can vary.
- Draft is the vertical distance between waterline and the bottom of the ship. It determines the depth of water a ship or boat can safely navigate. Higher capacity ships will need higher draft, hence ports with higher natural draft will attract bigger ships.
- Waterfront availability is the length of the water line on the coast where ships can rest and the goods are unloaded. Longer waterfront lengths reduce waiting time and help raise capacity.
- Terminals are certain sections of the ports where different types of cargo are unloaded.
- Single Point Mooring (SPM) is a loading buoy anchored offshore that serves as a mooring point and interconnect for tankers loading or offloading gas or fluid product.
- A dry dock is a narrow basin that can be flooded to allow a ship to be floated in, then drained to allow that ship to come to rest on a dry platform. Dry docks are used for construction, maintenance and repair of ships.
GLOSSARY

- FY: Indian Financial Year (April to March) – So FY11 implies April 2010 to March 2011
- US$: US Dollar
- FDI: Foreign Direct Investment
- IPA: Indian Ports Association
- NMDP: National Maritime Development Programme
- POL: Petroleum, Oil and Lubricants
- SEZ: Special Economic Zone
- CAGR: Compounded Annual Growth Rate
- ICTT: International Container Transshipment Terminal
- TEU: Twenty-Foot Equivalent Unit
- MMTPA: Million Metric Tonnes Per Annum
- MMT: Million Metric Tonnes
- GOI: Government of India
- NSICT: Nhava Sheva International Container Terminal, Mumbai
- OandM: Operation and Maintenance services
- LNG: Liquefied Natural Gas
- Wherever applicable, numbers have been rounded off to the nearest whole number
## EXCHANGE RATES

### Exchange Rates (Fiscal Year)

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<th>Year INR</th>
<th>INR Equivalent of one US$</th>
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### Exchange Rates (Calendar Year)

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<td>2018</td>
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</tbody>
</table>

*Source: Reserve Bank of India, FBIL, Average for the year*
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