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# India and the Indian Ocean

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# A view to the South: India and the Indian Ocean*

**Ashok V. Desai**

## Abstract

*India inherited from the colonial period a certain worldview, that colonization had displaced it from the position of being the world's most industrialized economy and held it back in the era of mechanization. The government of independent India tried to redress this injustice and promoted industrialization. It failed to note that industrialization without competition does not work. The crisis of 1991 forced it to revisit its preconceptions, and it opened the economy to internal and international forces of competition in the next two decades. The resulting surge in growth is now exhausted, and India needs to find a new engine of growth. I will suggest that India should look for it in marine transport, which is much cheaper than land transport. It should develop the technologies of building small ports and ships, and use it to develop a large number of ports on its coast as well as in other countries in the Indian Ocean; it should then expand economic activity on the basis of trade between those ports.*

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After Indians took over governance of India from the British, India had a payments crisis roughly once every decade. It was not written in India's destiny; it was related to policy. Those who ruled newly independent India believed that its long political dependence had made it a primitive land dependent on imports for industrial products, and that independence required it to reindustrialize. Their remedy was to stimulate the growth of industry by protecting it from imports. This line of thinking was attributed to Jawaharlal Nehru, who has been unjustly reviled for it. He did think so, but he was not the only one; there was hardly anyone in his time who disagreed. Before World War II, rich countries were also industrialized countries, so everyone assumed that the correlation implied causation.

The socialists went wrong because they removed competition from abroad in goods and technology; competition is essential to growth of efficiency in the long run. Also, protection of particular industries is essentially arbitrary; if industry is to be protected, it is better to do so with neutral policy instruments like devaluation. I learnt this in passing, while I did many things unrelated to policy in the course of my career.

I have been something of an odd bird in the aviary of economics. Economists usually enter one of three streams early in life, namely teaching and research, government service and corporate employment. I did all these, and mixed them up indiscriminately. In the last two decades I have left these behind and turned to journalism. It was not a deliberate or thought-out strategy. But over my life I was offered unexpected opportunities, and I could never resist the lure and challenge of the unfamiliar. It also happened that I was out of tune with the ruling ideology before the reforms, and had limited opportunities in a socialist India. So in the mid-1980s, I went to Canada and coordinated a commission on energy.

When I returned in 1986, I landed a study on trade policy. In it, I illustrated the error in establishment thinking, which ignored competition as an efficiency tool. Amongst the ideas in that study, I put forward the proposal that instead of laboriously issuing a million import licences a year, with all the attendant corruption and red tape, the government should print them like currency notes and give them to

exporters in proportion to exports, and let them sell them in the market. The government did that in 1991. It worked, too well. After three months, people started forging import licences. But by then, P Chidambaram, the commerce minister, had gained self-confidence; he abolished import licences altogether on capital goods and industrial inputs.[1]

I had been a consistent critic of the government in the previous two decades, so I had never expected to be asked to join it. When I received the first overture, I thought it was a joke; I threw away the letter, and went off to South Korea for a conference. I returned to frantic phone calls asking me to send my curriculum vitae; I was told the finance minister had recommended me. So I joined him. My luck lasted two years before his favourite made my life impossible and I resigned. In those two years we reduced taxes and thus brought down the cost of honesty for businessmen; we reduced import duties and allowed some competition from abroad. In the meanwhile, Prime Minister Narasimha Rao abolished industrial licensing and forced industrialists to compete.

## The Novice Superpower

The two decades that followed those reforms have seen India grow into the world's fourth largest economy, and given our Prime Minister a seat in forums of the world's wise and powerful. As it has grown, India has attracted greater attention – one might say respect – across the world. It was chosen member of the Group of 20 in 1999 and of BRIC in 2000.[2] In 2011, India was fifth in world league tables of GDP by purchasing power parity, behind the European Union, US, China, and Japan, and was about to overtake Japan to become fourth. It is far behind the others, and is unlikely to overtake any of them in the next decade or two. Still, India is seen as a major regional power and

[1] Import licensing on consumer goods was removed by the BJP government in 2001, to keep a promise the previous Congress government had made in the Uruguay Round, which ended in 1994.

[2] The Group of 20 was created in September 1999 when the finance ministers of the Group of 7 industrial countries invited their counterparts from another 12 developing countries to discuss the East Asian crisis of 1997-99. BRIC was conceived of soon after in a paper of Goldman Sachs (2000). The four BRIC countries admitted South Africa in December 2011 and made themselves BRICS.

sees itself as one. Some see it, rather wishfully, as competing and eventually overtaking China. India has had great-power status thrust upon it, and does not mind it; in fact, most Indians are rather flattered and proud.

But India does not know what to do with this new status; its economic policy continues to be inward looking, and its foreign policy continues to be disarticulated and unfocused. When India did not matter economically in the world, it did not have to think of economic strategy. It created a so-called non-aligned policy which in effect involved an alliance with the Soviet Union. The alliance served India well until the Soviet Union collapsed. Since then, India has been looking for a new strategy, but is yet to find one. It vacillates between the standpoint of the West, which is disturbed by the economic rise of China and would like India to compete with it, and the old-style non-aligned view that seeks a global role unconnected with economic relationships.

India has lost the economic race with China for now; not only is the Chinese economy more than twice the size of the Indian economy, but it is technologically more advanced and capable. The ambition of competing with China and becoming like China is unrealistic. At the same time, the idea that India has to model itself on the US or China is naive. It is true that in recent history, world powers have demonstrated military power across the globe and used it to their economic advantage. But it is a historical accident, arising out of the industrial revolution, that there was only one global hegemon at a time for more than two centuries. This will not hold, at least for the next few decades. Nuclear weapons have distorted world power balance so much that even such an insignificant power like Israel can throw its weight around as long as it knows the limits of impunity. If even Israel can find an international role, India certainly can; the question it should ask itself is, what role?

It will almost certainly not be a global role; neighbouring China is so dominant and so sensitive about its dominance that it will prevent India from developing into even a semi-global power. But India can play a regional, and an economic role. This role has two dimensions, a domestic and an international one.

## Domestic Strategy

The domestic policies should strengthen and build upon India's revealed comparative advantage, especially in information technology, health care, and education. These services can be delivered abroad, and there is no reason why they should not; but India is good at delivering them at home, and its services are cheap precisely because they are delivered in India where labour and capital costs are lower. So they should also be sold to foreigners coming to India. Medication and education have to be fitted into persons. To sell them at home, India must liberalize its policies on the entry and residence of foreigners; it must reverse its restrictive visa policies. And it must manage its exchange rate so as to maintain the cost advantage.

Although the Indian navy has been venturing into the Pacific on friendly visits, India cannot afford to compete with China in both the Pacific and the Indian Oceans; it would stand a better chance if it confined itself to the Indian Ocean. However, defence expenditure devoid of economic interests is waste of resources. Hence India should concentrate on developing closer economic relations with its neighbours in the Indian Ocean. It should use services to do so. Besides exporting services to them, it must liberalize imports of every kind from them, to bring them closer to India and enable them to pay for its services. The opening up must not be confined to them; in respect of goods, India should follow a policy of unilateral free trade. In 2011, the total exports of all East African countries together (other than South Africa) were about $20 billion; even if India took all their exports, its imports would rise by less than seven per cent. It can provide them with substantial markets at low foreign exchange costs to itself; if, at the same time, it creates markets for its own goods and services in those countries, the net impact on its balance of payments would be even smaller. So it must make a special effort to import goods from them, and aim to increase its share of their exports; in other words, achieve higher economic interdependence with countries in the Indian Ocean. This should not be done at the expense of relationships with other countries, but as a part of a policy of further opening up. Closer trade relations with South Africa are also desirable. But it is a much larger and more developed country than the rest of Africa. Its trade is about a third of India's, and its exports of gold, platinum, diamonds and rare

minerals have a global market. Hence closer relations with India can have less significance for the South African economy.

Apart from commodity trade, there is scope for trade in services. India has developed a good reputation for medical services, not because of government action, but because of the presence of a large number of medical colleges and a small number of high-quality private hospitals. Especially important amongst them are a few branded hospital chains. Most of them are non-teaching hospitals. Medical teaching is under the dual control of the government and the Medical Council of India, which is an overstretched and inefficient body. India needs to import medical regulation from countries that do it well, generally European countries; their institutions should be encouraged to set up hospitals in India. If they want to set up teaching hospitals, they should be allowed to do so; but non-teaching hospitals are also desirable, both because they would raise service standards and because they would increase local demand for doctors, nurses and other staff.

This point applies to education as well. Regulation of education is shared between the centre and the states, and has resulted in extremely poor standards. The solution is to invite renowned universities abroad to set up teaching facilities in India, and to let them apply their own standards. This will have the dual advantage of extending the benefits of foreign education to a much larger number of students, and to poorer students. Luckily for India, regulation of education is equally politicized and ineffective in its neighbouring countries. If Indian education improves with foreign inputs, it will make India more attractive to foreign students. So importing educational standards is also an export strategy.

Amongst goods, India's most successful exports are engineering goods, pharmaceuticals and chemicals; it should build upon them. In particular, it should advance its engineering technology to build better and more comprehensive equipment. In pharmaceuticals, it should progress from simple genetic drugs to more custom-made pharmaceuticals; it should use its own health care sector to develop them. Its Ayurvedic products occupy a small niche today; mass manufacture of proven remedies amongst them could lead to significant volumes. Amongst chemical products, India is a significant producer of plastics and fertilizers, but does not lead in either. It has a large

market for fertilizers and could become their competitive producer; but for that, the government would have to dismantle its price and distribution controls. The three major services – information technology, health care, and education – and the three product groups – engineering goods, pharmaceuticals, and chemicals – should form the vanguard of Indian exports. The products mentioned above are already in the forefront of India's exports. India has achieved what it can out of product specialization (except in agriculture, of which more later).

However, although stringent bureaucratic controls were relaxed, the new arrangements are cautious and conservative. In four areas – exchange control, customs, financial regulation and port development – they can be improved. The first three lie in the area of conventional economics. Economic policy has considerable inertia. It does not normally change except when crises force the government to abandon convention. It seems unlikely that India will face a crisis soon, so a discussion of what changes are worth making in the three areas is pointless. Hence in the rest of this talk, I shall confine myself to the last topic, namely redirection of trade and building of ports to facilitate it.

These issues have received little attention. Direction of trade is a detail that tends to get buried in doctoral theses and receives little exposure in print. The government has an implicit policy on trade direction, but it does not articulate it, and is probably unaware of it. Its recent strategy document makes no mention of it, except to say that there should be diversification into non-traditional markets (meaning less developed countries), which makes no sense on its own, unless selling to 'traditional' markets is becoming difficult.[3] Nor does direction of trade find a mention in the Commerce Department's Foreign Trade Policy.[4] Department of Commerce spends much energy working on and negotiating trade agreements. It has concluded nineteen trade agreements, and many other agreements which have a trade component. But they are all agreements with individual countries; the ministry has no overall priorities on trade direction.

[3] *Strategy for Doubling Exports in Next Three Years - 2011-12 to 2013-14* (New Delhi: Department of Commerce, 2010).
[4] *Foreign Trade Policy 27th August 2009- 31st March 2014* ((New Delhi: Department of Commerce, 2010).

Direction of India's trade has changed considerably over the years. Before the discovery of the Cape route by Vasco Da Gama, India's direct trade was largely confined to the Indian Ocean. Chinese ships are known to have come to the Indian Ocean, and Indian trade with what is Indonesia now was significant. But Indian ships are not known to have traded in the Pacific Ocean. Indian spices and textiles were exported to Europe through intermediaries. Turks - that is, subjects of the then Turkish Sultan – took Indian goods to Egypt and then across the Gaza strip to Alexandria, whence Venetian and Genoan traders carried them into Europe. Indians were not involved in this indirect trade. But Indian Ocean trade, in which they were involved, was substantial, and brought wealth and prosperity to coastal regions. It was this trade that lured European traders and nations into Asia.

With the coming of the British and the excavation of Suez Canal, the picture changed considerably. British textiles made considerable inroads into the Indian market, and Indian tea and jute goods made their way to Europe and America in the late nineteenth century. At the time of independence, a large proportion of India's trade was with industrial countries, and much of it was mediated by British traders. After the oil crisis of the 1970s, the share of oil producers, and especially of United Arab Emirates, in India's trade went up; but for the rest, the close relations with industrial countries continued. India's policy of import substitution increased the proportion of capital goods in imports; that also accentuated India's ties with industrial countries.

In my view, however, this pattern of trade owes much to official passivity, absence of thought and inaction in two spheres: the economic implications of India's geopolitical situation, and availability of ports. As I have argued above, China has outpaced India in economic size and technological capacity, and it would be unrealistic of India to compete with China across the world. It must choose where it can compete most advantageously; the region where it can do so is the Indian Ocean region. To do so, it needs more marine transport between it and the countries of East Africa and Southeast Asia. This infrastructure will not develop on its own; it needs government stimulus. On ports, India's policy has been passive and has inadvertently favoured trade with industrial countries. India must actively invest in smaller ports and smaller ships. If it does so, it will improve its capacity to trade with developing countries in the Indian Ocean area.

## Port Configuration

Ports act as a shelter for ships where they can take refuge from rough seas; they are also the interface where goods and people are transferred between land and water. Typically, a harbour is a part which is insulated from the tides by a natural barrier or a constructed breakwater. It will have piers where ships can be docked for loading and unloading; the water in the approach channels from the sea to the piers must be deep enough for ships to approach them without any danger of running aground. The piers must be spacious enough for operation of cranes and for loading and unloading of goods, and they must have good train or road connections with the mainland.

The length of the piers and the depth adjoining them depend on the size of the ships that are to dock. Madras port, which was built in 1877-95 and 1906-12, is a good example of an engineered port. It was constructed just before World War I, and is basically a rectangular basin with land on one side and piers along the other three sides; ships enter and leave through a gap in the northern pier.[5] The coastline forms its western edge; the other three walls were built in the sea.

The rise of the offshore oil industry has since then led to considerable advances in underwater construction techniques. But port construction still remains difficult and expensive; investors as well as governments prefer to expand the capacity of existing ports to creating new ones. Most of the world's ports have been located so as to use natural indentation in the coastline. Bombay is a good example; Bombay island shields the harbor from the force of the open sea, and the docks have been built on the eastern edge away from the sea. Often the natural coastline has the right shape for a port, but the enclosure is not deep enough; in that case, it is deepened by dredging. Some ports are sited at the mouth of a river, which keeps depositing silt; the silt is then frequently dredged to provide a channel deep enough for the entry of ships.

[5] F. J. A. Broeze, K. I. Mcpherson, and P. D. Reeves, 'Engineering and empire: The making of the modern Indian Ocean ports', in Satish Chandra (ed.), *The Indian Ocean: Explorations in History, Commerce, and Politics* (New Delhi: Sage Publications, 1987), pp. 254-301.

Ports are large engineering structures built in a difficult environment. They are connected with road and rail networks, and often have extensive storage facilities. Considerable investment goes into a port and the accompanying infrastructure. So investors, especially governments, try to economize by expanding existing ports rather than building new ones. This tendency towards concentration has been reinforced by a rise in the size of ships. Table 1 gives the size of the largest ships sailing today.

**Table 1**
**Size of Largest Ships**

| | | Tonnage 1000GT | Length Meters | Beam Meters | Draught Meters | Speed Knots | Capacity |
|---|---|---|---|---|---|---|---|
| Tanker | TI Asia | 234 | 380 | 68 | 24.5 | 16.5 | 441585 DWT |
| Container ship | Marco Polo | 175 | 396 | 53.6 | 16 | 25.1 | 16020 TEU |
| Bulk carrier | Vale Brasil | 199 | 362 | 65 | 23 | 15.4 | 402,347 DWT |
| Cruiser | Oasis of the Seas | 225 | 360 | 47* | 9.3 | 22.6 | 5400+2394# |
| LNG carrier | Mozah | 162 | 345 | 53.8 | 12 | 19.5 | 266000 $m^3$ |
| Liner | Queen Mary 2 | 148 | 345 | 41 | 10.1 | 30 | 2620+1253# |
| Warship | Enterprise | 95 | 342 | 40.5* | 12 | 33.6 | |
| Sailship | Club Med 2 | 15 | 194 | 20 | 5.1 | 15 | 386+214# |
| Sailship@ | Great Eastern | 18.9 | 211 | 25 | | 14 | 4000# |

*Waterline; the extreme length is 60.5m for Oasis of the Seas and 78.4m for Enterprise.
#Passengers+crew; in the case of Great Eastern, passengers
@Largest sailship built before the steam age.
*Source: http://maritime-connector.com/worlds-largest-ships/*

Table 1 shows the largest ships of different classes. For comparison, the last line shows the size of the largest sailing ship ever built, a liner commissioned in 1858, just before steamships began to ply the oceans. Just above it is the largest existing sailing ship. It has engines as well, but it is essentially a sailing ship used for cruising in the Mediterranean. It is remarkable how similar its parameters are to those of the giant sailing ship of a century and a half ago. Its draft is just 5.1 meters; it

is unlikely that it was exceeded in the age of sailing ships. The draft of the heaviest ships today can be almost five times as great; that shows how much deeper harbours for them have to be today. The longest ships are almost 400 meters. If the space required for manouevring a ship is included, a pier would have to be at least 600 meters. Ships are much wider today; the maximum beam reaches almost 70 meters. This is not relevant to docking, but it would affect the width of the approach channels if they have to be dredged. Warships and passenger liners are built for speed, and can steam faster than 30 knots; but speed wastes energy, so freighters – whether they are tankers, bulk carriers or container ships – do not exceed 25 knots.

**Table 2**
**Major Indian Ports**

| | Minimum depth (m) | Minimum width (m) | Distance from sea (km) | Berths | Type |
|---|---|---|---|---|---|
| Vadinar SBMs | 23.5 | 1500 | 8 | 2 | Single buoy moorings |
| Madras | | | | 20 | Artificial |
| Outer harbour | | 19.2 | 244 | 6.7 | |
| Inner harbour | | 18.6 | 244 | 6.7 | |
| Vizagapatam | | | | 21 | Natural |
| Outer harbour | | 17.5 | 200 | 0.4 | |
| Inner harbour | | 10.7 | 94 | 2.2 | |
| Ennore | 16 | 250 | 3.8 | 2 | Artificial |
| Mangalore | 15.4 | 250 | 5 | 10 | Artificial lagoon |
| Mormugao[1] | 13.1 | 250 | 5 | 8 | Open protected |
| Paradeep | 12.8 | 160 | 2 | 13 | Artificial lagoon |
| Cochin | 11.8 | 185 | 10.5 | 15 | Lagoon |
| J Nehru | 11 | 320 | 17 | 8 | All weather tidal |
| Bombay | 10.9 | 320 | 9.6 | 46 | Natural |
| Tuticorin | 10.4 | 162 | 4 | 13 | Artificial |
| Haldia | 6.7 | 467 | 115 | 16 | Riverine |
| Calcutta | 3.5 | 200 | 232 | 33 | Riverine |

[1]Four berths and four transshipment quays
*Source:* i-maritime (2003): *India Port Report. Ten years of reforms and the challenges ahead,* Belapur, p 40.

Table 2 shows the dimensions of India's major ports. As will be seen, the width of approach channels does not pose a problem. The entrance to Vizag port is only 94 meters wide, but if that does not allow two ships to pass each other, ships can take turns, as they do in Suez and Panama canals. The sea is far from Calcutta and Haldia ports. The draft in Calcutta is a mere 3.5 meters; it is extinct as a port for oceanic trade. Haldia primarily exports iron ore from Orissa. If we exclude these ports, draft in Indian ports can go up to 15-20 meters, but is generally closer to 10-12 meters. There are new ports not included in Table 2; Gangavaram has draft of 21 meters, Mundra of 18 meters, and Dhamra of 17.5 meters. As Table 1 shows, these ports can handle the largest container ships, but India does not have ports to handle the largest tankers and cargo ships.

Draft does not prove such a limitation for passenger ships; as Table 1 shows, even the biggest cruisers and liners do not have draft exceeding 13 meters. But the larger the ships, the less is their frequency. Hence there is an argument for encouraging employment of smaller ships on the Indian coast, and also of ro-pax, used to transport large numbers of passengers over short distances.

Official studies of shipping show a certain fascination with large ports and ships.[6] This is partly because of the division of responsibilities. 'Major' ports come under the central government, which has more money to build them. Minor ports come under state governments, most of which have neither the money nor the will to improve their port infrastructure. And the centre gives higher priority to railways and air transport infrastructure. As a result, investment in coastal ports has suffered. Much traffic which could be seaborne has become landborne, or has not materialized. India has got fixated on large ships which use large ports. Portsource.com lists 76 functioning ports for India. Countries with much shorter coastlines in Europe have more ports than India: for example, United Kingdom has 389, France159, Germany 98, Italy 311, Spain 105, Greece 103. The US has 531; little Japan has 292. Clearly, other countries – even developing countries, such as China (172), Indonesia (154) and Brazil (81) – have invested more in ports, and got greater dividends on the investment.

[6] See, for example, *The Working Group Report on Shipping and Inland Water Transport for the Eleventh Five Year Plan; Report of Working Group for the Twelfth Five Year Plan - 2012-2017* (New Delhi: Planning Commission, 2011).

Despite India's poor port infrastructure, coastal trade has been rising faster than international trade. Coastal trade does not necessarily use minor ports, and the driving force behind its growth is the same as behind international trade, namely growth in the movement of bulk commodities – oil, coal, iron ore, and other minerals. But it would grow faster if minor ports were developed. Marine transport is enormously cheaper than land transport, and there is no capacity limit on seaways. But to exploit them, the government has to invest in breakwaters, jetties, roads, warehousing and connectivity with hinterland. There is enormous port capacity that can be developed; investment in local ports can lead to lower transport costs and diversification of traffic flows.

**Table 3**

**Dimensional Statistics for World Fleet in 2003**

| | Draft[1] | Length[1] | Beam[1] | DWT | TEU capacity |
|---|---|---|---|---|---|
| FEEDER | | | | | |
| Definition | 6.5 | 110 | 18 | 6000 | 100-500 |
| Median | 6.2 | 106 | 16.9 | 5183 | 326 |
| Maximum | 8.6 | 148.7 | 24 | 11067 | 495 |
| FEEDERMAX | | | | | |
| Definition | 7.5 | 130 | 20.5 | 10000 | 500-1000 |
| Median | 7.7 | 133.2 | 20.9 | 9678 | 700 |
| Maximum | 11 | 219.6 | 29 | 29213 | 980 |
| HANDYSIZE | | | | | |
| Definition | 9.5 | 170 | 26 | 20000 | 1000-2000 |
| Median | 9.8 | 172.2 | 27 | 21465 | 1388 |
| Maximum | 12.03 | 269 | 35 | 36022 | 1998 |
| SUB-PANAMAX | | | | | |
| Definition | 11.5 | 200 | 30.5 | 35000 | 2000-3000 |
| Median | 11.5 | 208.2 | 32.2 | 34600 | 2480 |
| Maximum | 13 | 272.3 | 32.6 | 53726 | 2987 |
| PANAMAX | | | | | |
| Definition | 12.2 | 280 | <32.27 | <62000 | 3000-4400 |
| Median | 12.5 | 270 | 32.2 | 50792 | 3802 |
| Maximum | 13.7 | 294.1 | 33.3 | 67680 | 4890 |
| POST-PANAMAX | | | | | |
| Definition | 14 | 300 | >32.27 | >62000 | >4400 |
| Median | 14 | 280 | 40 | 69000 | 5652 |
| Maximum | 15 | 352.6 | 43.5 | 105750 | 8063 |

[1] Meters

*Source:* GEC (2004): *Savannah Harbor Expansion Project. Deep-draft Channel Improvements. Economic Analysis: Vessel Fleet Forecasts.* Baton Rouge, La. Tables 11 and 18.

But they cannot be ports to handle the world's biggest ships. Indian ports are not deep enough to receive them, and deepening them enough would be impossibly expensive. There is a strategy that does not require them to be deepened to that extent. Most of the world's ships do not require such deep draft. Table 3 gives the dimensional statistics for the ships which are the world's marine workhorses and form the bulk of its fleet; they account for over 80 per cent of the world's cargo ships and two-thirds of their deadweight capacity. As it shows, Indian ports can cope with the draft required by the five smaller sizes, and most of them can cope with Panamax vessels as well. Developing them to deal with sizes up to Panamax is entirely feasible. Oil refiners and ore exporters will continue to demand deeper ports. But they are big enough to build their own facilities; the only reason why the Indian government has been so obsessed with their requirements is that it owns them. Instead of spending unreasonable amounts to cater to them, the government should build many well distributed ports for Panamax and sub-Panamax vessels. Multiplication of ports will create new routes for coastal trade, more traffic and more demand for small vessels. The demand will be large enough to justify large-scale production, and economies of scale will bring down costs.

How many ports should be built depends on the kind of traffic envisaged between them. Modern ships are designed to cruise at 25-30 knots, that is, 46-56 kilometers an hour. But they seldom do so. Their fuel consumption goes up almost geometrically with speed, and since they have to carry their fuel, it runs out over a shorter distance if they go faster. So their average speed is much lower. Their cruising speed would normally be in the range of 15-20 knots, or 27-37 kilometers an hour. If traffic between adjacent ports is to be encouraged, they should be close enough for people to travel from one port to the other, attend to business and return the same day. They should not be more than six hours' journey, or 200 kilometers apart. The east and the west coasts of India are approximately 1200 kilometers each, so if they were equidistant, there would have to be six ports on each coast. This is the minimum number of required ports; the optimum number could be larger – let us say, a dozen ports on each coast. Some of them can be existing ports; for the rest, sites should be selected. All the selected ports should be developed to serve

sub-Panamax vessels. Portsource.com lists 76 ports for India, of which, nine are major. Those to be developed would be from amongst the 67 minor ones. But there are more of them on the west coast than on the east coast; new sites should be found on the east coast.

While India creates this port capacity, it should also encourage the creation of a fleet that would use those ports. One way would be to subsidize both cargo and passenger ships that can use these ports. But they would not necessarily use Indian ports; they may sail anywhere in the world. Hence a better way is to subsidize the ports, their infrastructure, and traffic into the ports.

If India builds and modernizes a dozen or more ports, it will develop the skills to build such ports. It should then offer those skills to countries in the Indian Ocean. If the number of such ports across the ocean multiplies, it will create potential for trade between those countries and India. That is the way to make India a regional power. The share of ASEAN and Africa in India's trade is roughly ten and seven per cent respectively; petty trade in small ships could raise it considerably.

Trade brings people closer. Larger volumes of trade will make the Indian Ocean familiar to Indians. Lately, Indians who get rich make a beeline for America and Europe in the west and Thailand and Malaysia in the east, whilst Africa still remains is a dark continent for Indian tourists. Once ships begin to ply frequently between India and its southern neighbours, tourists too will venture out.

To sum up, India should make coordinated investments in (a) minor ports, (b) their logistics with the hinterland, (c) small ships suitable for movement in the Indian Ocean, and (d) a navy with a large number of smaller boats capable of protecting a much larger number of small ships. Such a strategy would have the quadruple impact of (a) low-cost development of the coastal regions, (b) stimulus to the development of Indian Ocean countries, (c) greater interdependence between them and India, and (d) greater influence of India in a region where it is less likely to face competition.