



Outlook on Container Activities in the Southern Asia Region and the Impact on Ports Activities

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Outlook for Container Shipping in South Asia

SOUTH ASIA'S ECONOMIC AND TRADE OVERVIEW

South Asia - The Region

Map of South Asian Countries

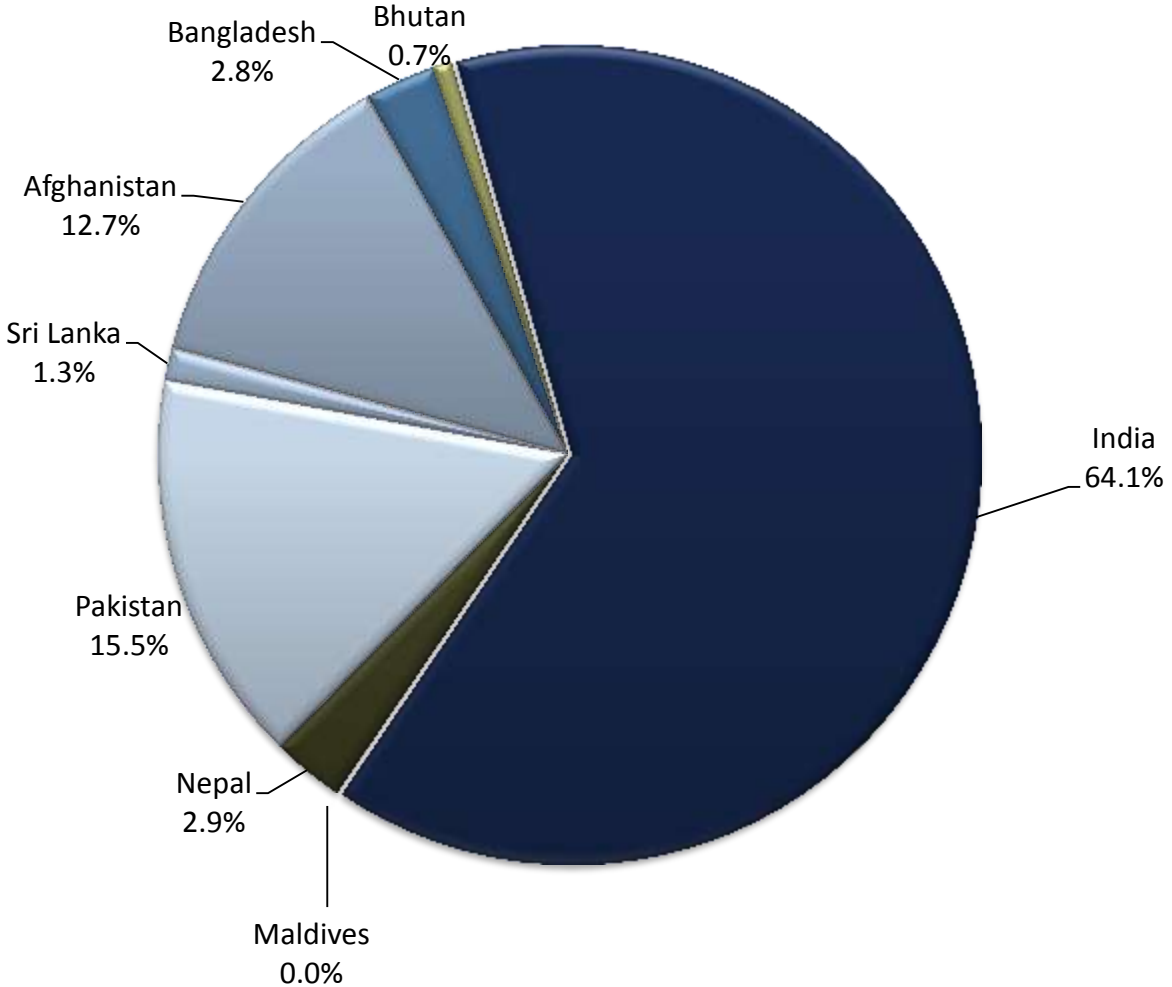


Source: SAARC Secretariat

- South Asia comprises of 8 countries which are all part of erstwhile Indian sub-continent

South Asian Countries Comparison with World - Area

South Asia's Area Composition by Country, 2013



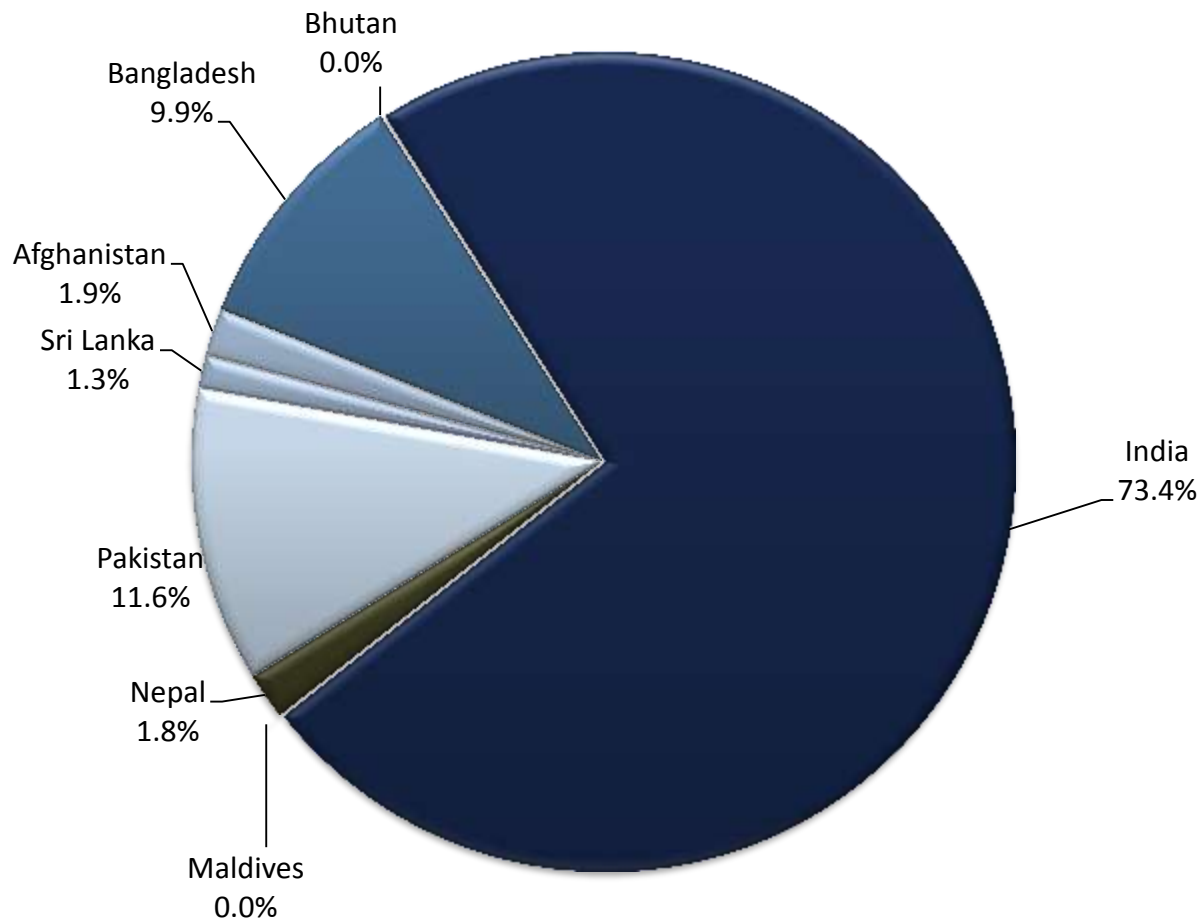
▪ South Asia Total Area:
5.13 million Sq. Kms

▪ South Asia Share in
Total World Area : 1%

Source: World Bank Data, Frost & Sullivan analysis

South Asian Countries Comparison with World - Population

South Asia's Population Composition by Country, 2013



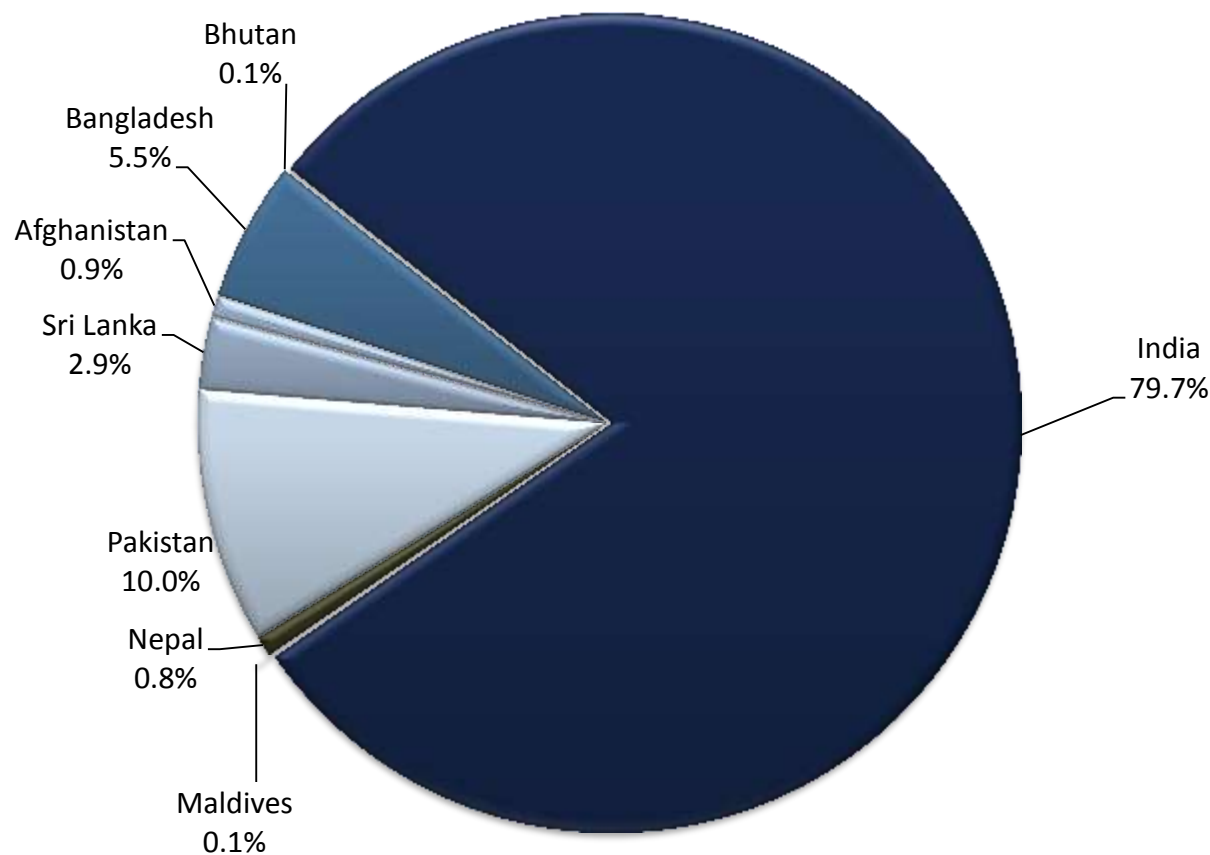
▪ South Asia Population in 2013 : 1.68 billion

▪ South Asia Share in Total World Population in 2013 : 24%

Source: World Bank Data, Frost & Sullivan analysis

South Asian Countries Comparison with World - GDP

South Asia's Gross Domestic Product Composition by Country, 2013



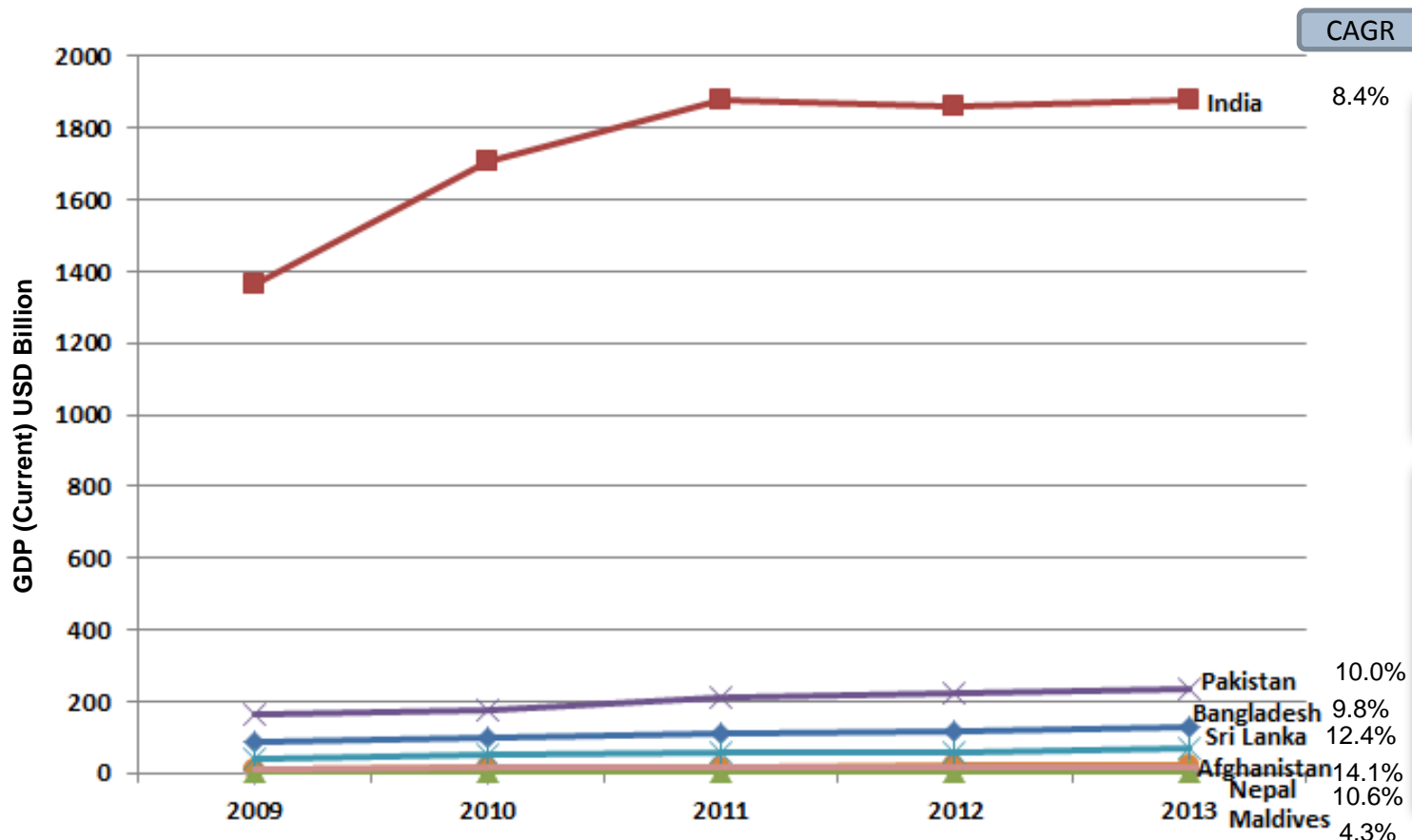
▪ South Asia GDP in 2013 at Current Price: US\$ 2,354.66 billion

▪ South Asia Share in Global GDP in 2013 at Current Price: 3%

Source: World Bank Data, Frost & Sullivan analysis

South Asian Countries GDP Growth Comparison

GDP (Current) Growth of South Asian Countries, 2009 to 2013



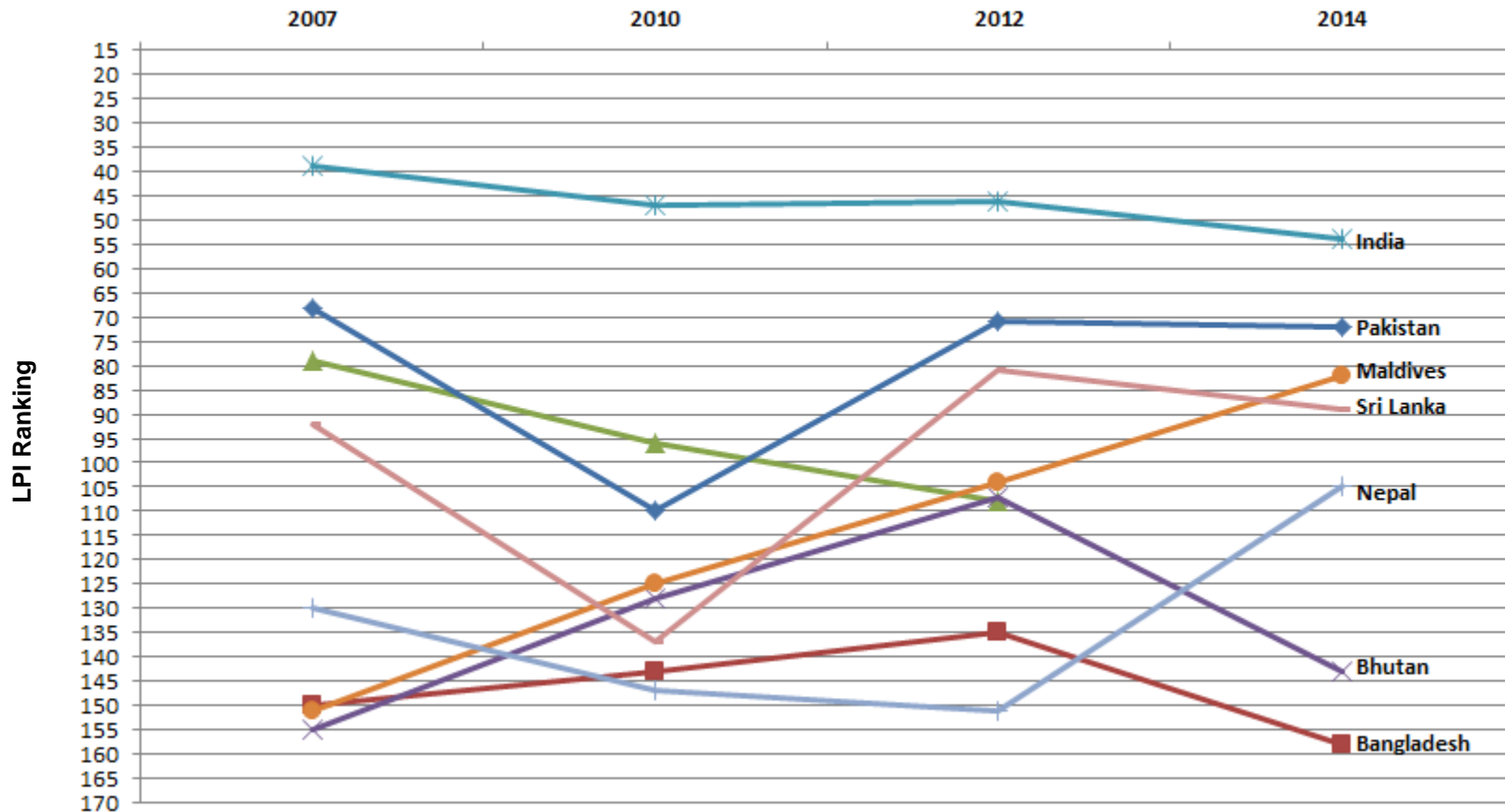
- India 2nd lowest growing economy after Maldives the lowest growing within region.

- Sri Lanka & Afghanistan are the highest growing economies.

Source: World Bank Data, Frost & Sullivan analysis

South Asian Countries Logistics Performance Index Ranking Comparison

LPI Ranking of South Asian Countries, 2007 to 2014



- Only Maldives and Nepal have Obtained Significant Improvement in their Rankings

Source: World Bank LPI Study, Frost & Sullivan analysis

South Asian Countries – Maritime Transportation Infrastructure Comparison

Maritime Transportation Infrastructure Comparison of South Asian Countries, 2013

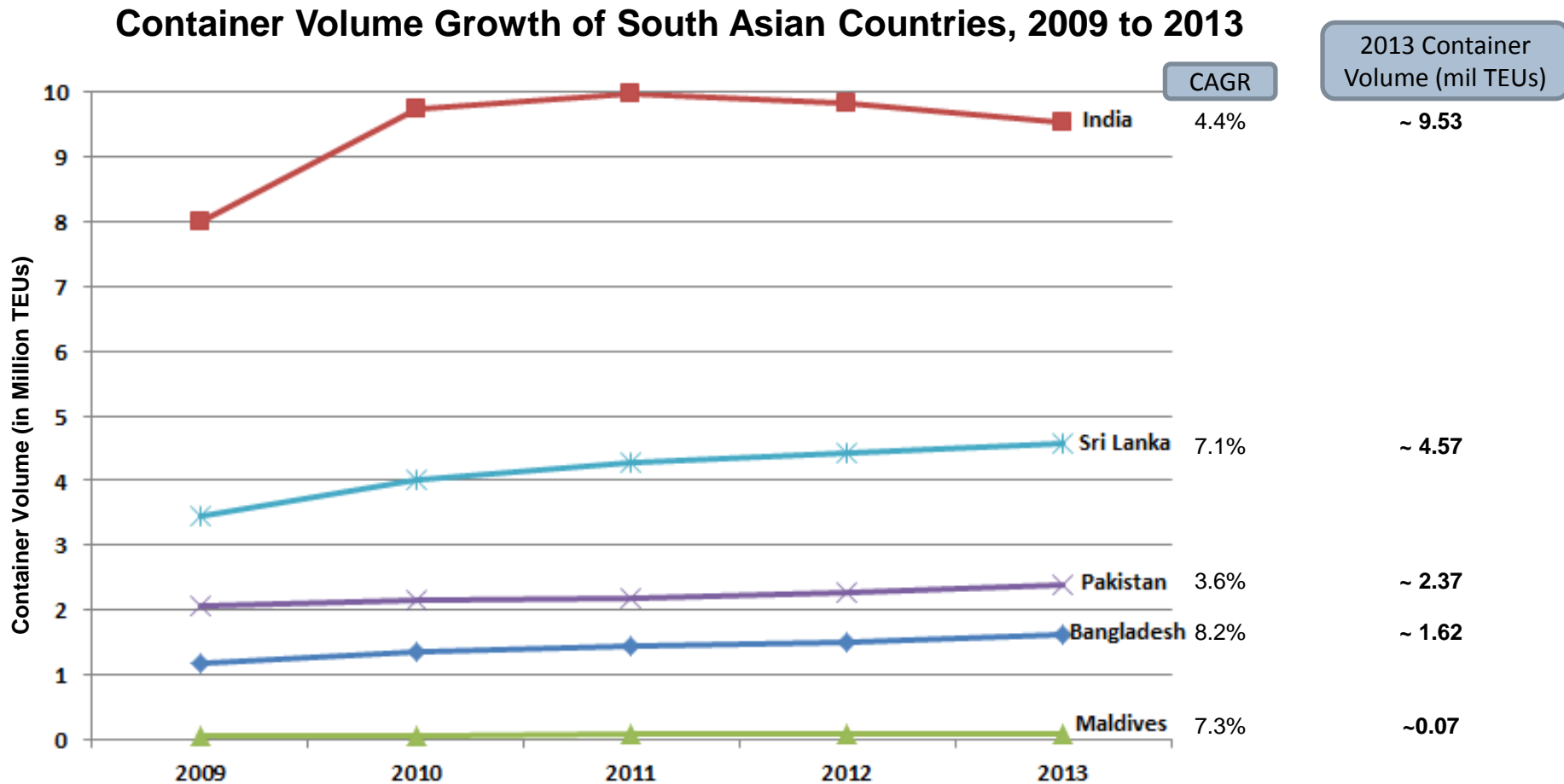
Country Name	No of Sea Ports	Major Ports Names	No of Container Ports	Major Container Ports Names	No of Merchant Marine Vessels	No of Container Vessels
Afghanistan	NA	NA	NA	NA	NA	NA
Bangladesh	1	Chittagong	1	Chittagong	62	5
Bhutan	NA	NA	NA	NA	NA	NA
India	200	Chennai, Jawaharlal Nehru Port, Kandla, Kolkata, Mumbai, Sikka, Vishakhapatnam	20	Chennai, Jawaharlal Nehru Port	340	14
Maldives	1	Male	1	Male	18	2
Nepal	NA	NA	NA	NA	NA	NA
Pakistan	2	Karachi	1	Karachi	11	1
Sri Lanka	2	Colombo	1	Colombo	21	1

- Only 5 out of 8 South Asian countries have maritime transportation infrastructure, with India having the highest and Maldives having the lowest scale of infrastructure.

- Sri Lanka despite having just 1 container port,

Source: World Bank Data, Frost & Sullivan analysis

South Asian Countries - Container Volume Growth Comparison



Container volumes of large countries - India and Pakistan growing slowly, while smaller countries like Bangladesh, Sri Lanka and Maldives growing fast.

Source: World Bank Data, Frost & Sullivan analysis

***KEY DEVELOPMENTS IN SOUTH ASIA'S CONTAINER SHIPPING AND
PORTS ACTIVITIES***

Largest Container Port by Country in South Asia

Largest Container Port by Country with Maritime Border in South Asia



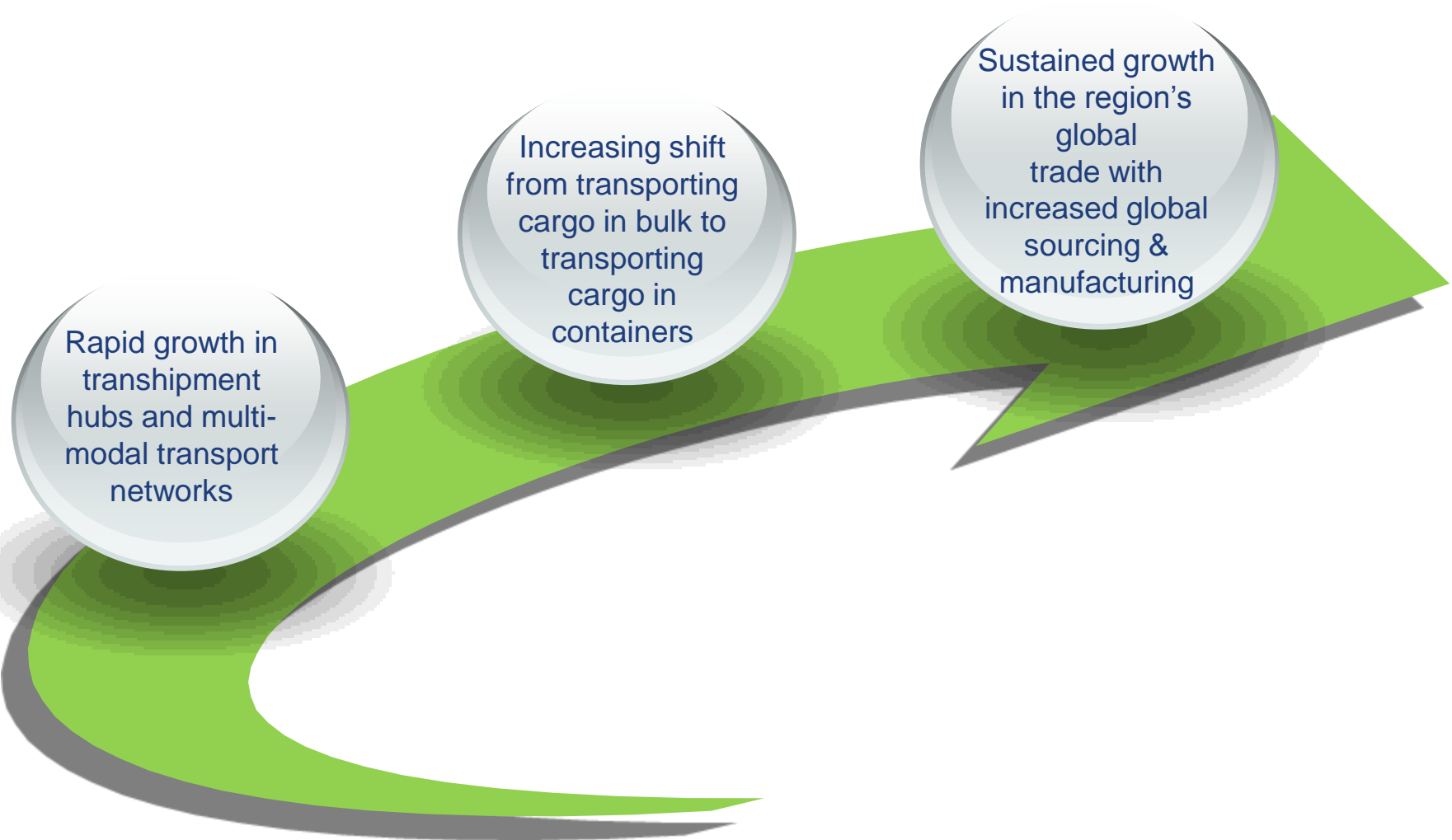
- India's largest port - JNPT handled ~ 4.2 million TEUs of containers in 2013.

- Colombo port handled ~ 4.3 million TEUs of containers in 2013.

- Colombo port has the largest container volume in the South Asian region though not being from largest market within the region, because it is the primary transshipment hub port for South Asia.

Source: SAARC Secretariat, Frost & Sullivan analysis

Major Drivers of Container Shipping Volumes in South Asia



Source : Frost & Sullivan analysis

Development of Transshipment Purpose New Ports in the Region

Transshipment Purpose New Ports Developed in South Asian Countries



- India plans to build 2 mega container ports by 2020 as a part of its Maritime Agenda.

Source: SAARC Secretariat, Frost & Sullivan analysis

Growth of SEZ Integrated Ports

Notable SEZ Integrated Ports Driving Similar Projects in South Asian Countries



- Few other ports in India also are developing or have plans to develop SEZs

Source: SAARC Secretariat, Frost & Sullivan analysis

Dedicated Rail Freight Corridors in India

Dedicated Freight Corridors being Developed by Indian Railways

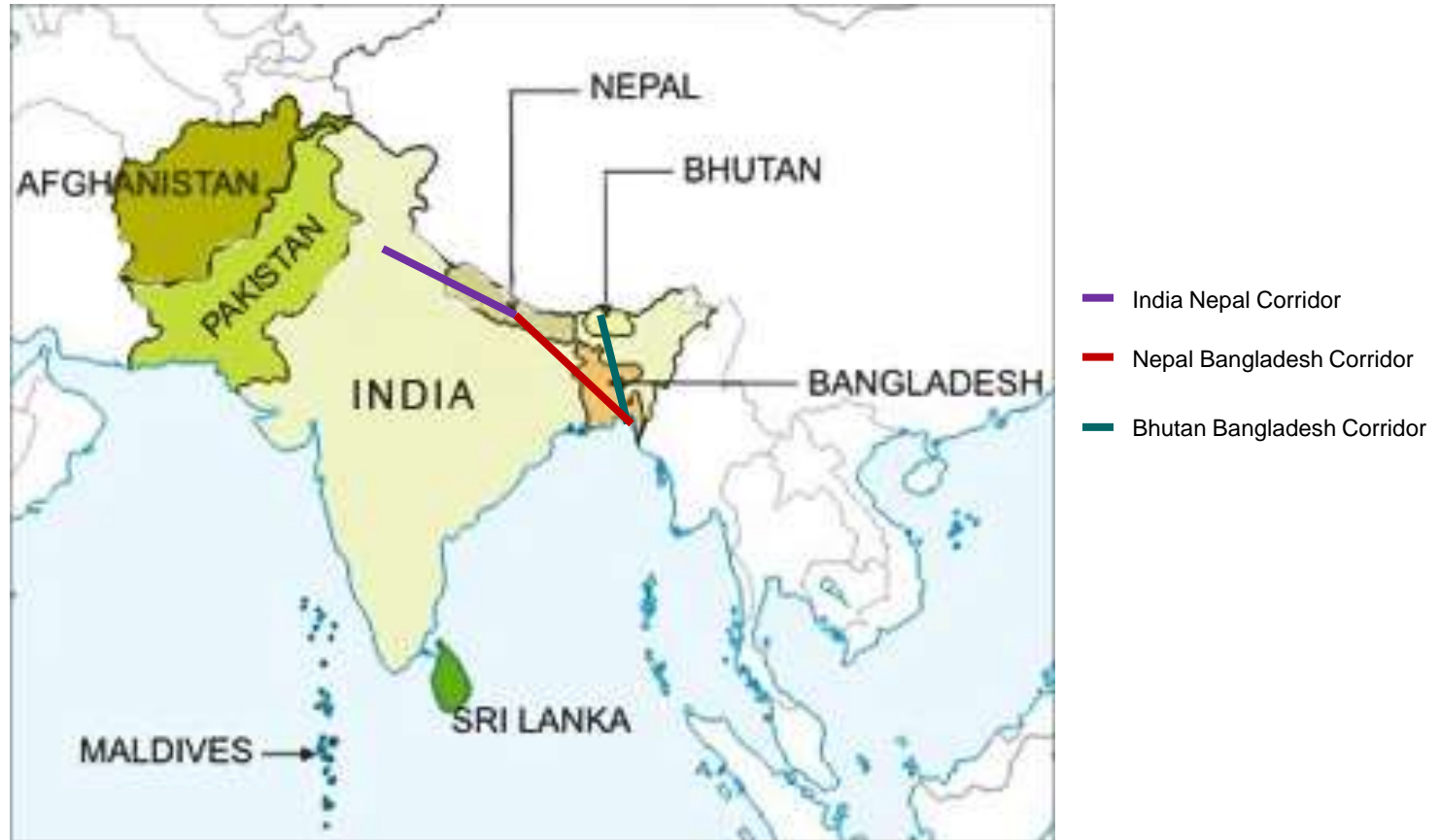


- The Dedicated Freight Corridors of Indian Railways, likely to be completed by 2020 are expected to drive at least 10 percent of road cargo into rail mode.

Source: SAARC Secretariat, Frost & Sullivan analysis

Transnational Road and Rail Connectivity Corridors in the Region

Notable Transnational Transport Connectivity Corridors Planned in South Asia



- The transnational road and rail connectivity corridors connecting India, Nepal, Bhutan and Bangladesh are expected to drive container volumes in region.

Source: SAARC Secretariat, Frost & Sullivan analysis

***NEW TRENDS IN GLOBAL CONTAINER SHIPPING DESIRED FOR
ADOPTION IN SOUTH ASIA***

Collapsible Containers to Deal with rising challenge of dealing with empty boxes

- About 20 percent of the total 18 million containers owned by global shipping industry are empty at any given time, and they're not always in the right place to be loaded with goods for the next shipment.
- Moving these empty containers, whether by road on truck, by rail, or by sea requires a lot of cost in terms of labour, handling process, equipment, time and fuel.
- This challenge has driven container industry to develop an innovative container called Collapsible Containers that can be folded when empty.
- Collapsible Containers shrink to as much as one-fifth their normal size. Set side by side or one above other, five containers take the space of one and accordingly require just about 20% cost per unit to move them from unloaded/current location to next loading location.

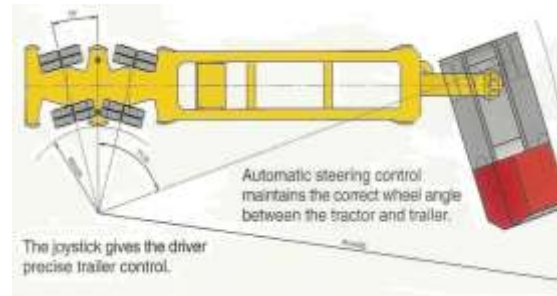


Collapsible Containers

Source : Cargoshell, Staxxon, Frost & Sullivan research

RoRo Container Cassettes and Hydraulic Cassette Trailers Accelerate Rapid Vehicle and Cargo Turnaround

- RoRo Container Cassettes enable dropping/storing of containers similar to Pallets in a warehouse
- Transporting them requires specialized hydraulic cassette trailers that have low wheels and platform for enabling RoRo of container cassettes.
- Combination of these two enables rapid evacuation of container cargo (or even other forms of cargo) from ports.



Collapsible Containers

Source : Transtec Equipment, Frost & Sullivan research

OUTLOOK FOR CONTAINER SHIPPING IN SOUTH ASIA

Outlook for Container Shipping in South Asia

- **South Asia is a Rapidly Growing Zone for Container Shipping and Related Port Activities. The region's container volume is expected to grow at around 8%-10% for the next few years.**
- **The region's container volume growth is expected to be driven by factors such as new transshipment hub ports development and transnational networks among others**
- **Global Trend of Incremental Shift Towards Containerization to Add Significant Additional Volumes of Container Trade for the Region**
- **Container handling practices in the region are still done through older technologies and most ports lack efficiencies of global standards, scenario likely to change slowly in next 5 years**
- **Adoption of emerging trends in container handling along with other port level infrastructure enhancement is necessary to drive full potential growth of container volumes of the region**

Source : Frost & Sullivan analysis

Frost & Sullivan Transportation & Logistics Practice— Middle East North Africa and South Asia

The transportation & logistics consulting practice of Frost & Sullivan in Middle East North Africa and South Asia (MENASA) has been providing growth consulting and research solutions for most of the leading transportation & logistics companies in the region. Our competencies in providing growth solutions cover a broad range of markets for the following types of organizations:

Service Providers	Service Users	Infrastructure Developers
Third Party/ Fourth Party Logistics Sourcing Opportunities and Strategies	Customer Satisfaction of LSP Users	Business Planning and Growth Strategies
Transportation Markets (Surface, Railways, Air, Ocean and Intermodal)	Outsourcing Maturity Index	Growth Opportunities in Transportation Infrastructure
Business Planning and Growth Strategies	Supply Chain Efficiency Enhancements	Growth Opportunities in Warehousing Infrastructure
Warehousing Markets opportunities (Logistics Parks, FTWZs)	Alternate Transportation Modes opportunity	Demand Estimation
Best Practices	Partner Selection	Location Identification

As the countries in MENASA witness a growth in the logistics and transportation industry, we at Frost & Sullivan, transportation & logistics consulting practice, aim to help our clients carve their own niche in these promising industry segments.

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