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- **World Seaborne Trade and World Port Traffic**

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WORLD OUTPUT GROWTH KEEPS DECREASING

In its 'World Economic Outlook' (October 2016), the IMF estimated that the world economic output would increase by 3.1% in 2016 compared to 3.2% in 2015. All in all, the economic development is rather uneven: While most advanced economies show increasing reference values such as sinking unemployment rates and growing economic activities, the economic situation in emerging markets, such as the BRIC countries is rather grave. Moreover rapidly sinking prices of raw materials, such as crude oil, cause weaker prospects for oil-exporting countries. Increasing political strains in Eastern Europe and the Near East are still accompanying this development. What effect UK's exit from the EU for both sides will have is guesswork, but undoubtedly, there would have been better decisions to support global trade growth.

During 2015, the growth of the United States was nearly the same as during 2015, 2.6% instead of 2.4% one year earlier, but the current IMF projection expects only a 1.6% growth for 2016 and also in this matter, the trade-policy decisions in the near future will have a sustained influence on global trade developments.

Growth in China decelerated from 6.9% in 2015 down to projected 6.6% in 2016 and is foreast to equal 6.2% in 2017. Generally, a robust national consumption and ongoing investments to from the Government to strengthen the secondary and especially the tertiary sector. The same is true for India, the the biggest economy in South Asia.

SLOWEST GROWTH FOR SEABORNE TRADE SINCE 2009

Depending on the source of information, world seaborne trade grew by around 2.1% (UNCTAD; Review of Maritime Transport 2016) or 1.9% (Clarkson Research Services Limited; World Fleet Monitor) in 2015. This is, following both sources, the slowest growth since the economic crisis 2008/2009. Hereafter the records of Clarkson Research will be interpreted.

Word seaborne trade increased to 10.8 billion tonnes in 2015 and is expected to climb 2.4% in 2016. Compared with ten years ago, the seaborne trade has increased by 34.8% corresponding to an average annual growth rate of 3.1% in the period 2006-2015. This steady growth is, after the strongest setback of seaborne trade ever in 2008/2009 and recently weak economic activity in Europe, mostly driven by a healthy intra-Asian and South-to-South trade.

Still, according to estimates from CRSL, seaborne trade grew far slower than shipping tonnage. The latter is showing a year-on-year growth of 3.5% in 2015 and 3.3% in 2016. Focussing exclusively on dry bulk, tanker and container shipping, this imbalance would be much bigger.

Port figures show that on the export side especially the ore, grain and crude oil exporting countries and on the import side emerging market economies are driving seaborne trade growth. Among others especially southeastern and southwestern Asia exhibited the fastest trade growth in 2015 with an increase of 8.4% and 4.7%,

Tab. 1: World output by country/country groups up to 2016

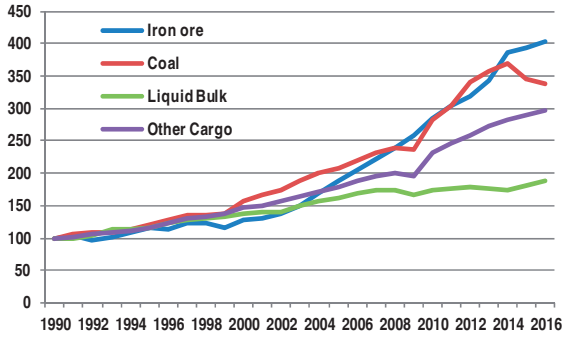
Annual per cent change

			Current projection		Differences from July 2016	
	2014	2015	2016	2017	2016	2017
WORLD OUTPUT	**3.4**	**3.2**	**3.1**	**3.4**	**-0.1**	**-0.1**
Advanced economies	1.8	2.1	1.6	1.8	-0.3	-0.2
of which						
United States	2.4	2.6	1.6	2.2	-0.8	-0.3
Euro area	0.9	2.0	1.7	1.5	0.2	-0.1
Japan	-0.1	0.5	0.5	0.6	-	0.7
Gemany	1.6	1.5	1.7	1.4	0.2	-0.2
Emerging markets and developing	4.6	4.0	4.2	4.6	0.1	-
of which						
Asia	6.8	6.6	6.5	6.3	0.1	-
ASEAN-5*	4.6	4.8	4.8	5.1	-	-
China	7.3	6.9	6.6	6.2	0.1	-
India	7.3	7.6	7.6	7.6	0.1	0.1

* Indonesia, Malaysia, Philippines, Thailand, and Vietnam

Source: ISL, based on IMF: World Economic Outlook, October 2016

Fig. 1: Development of seaborne trade by major cargo aggregates 1990 - 2016 (index 1990=100)

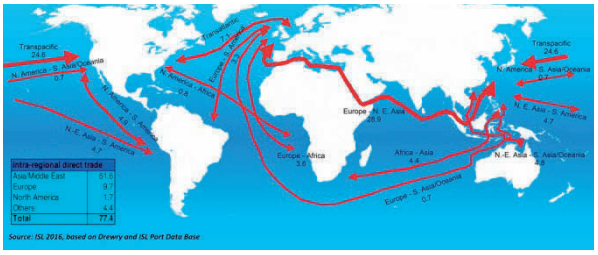


Tab. 2: Average annual growth rates of seaborne trade by commodity 2003 - 2015 and trade volume in 2015 (in% and mill. tonnes)

Commodity group	Total 2015	%share of total	change over	average growth '03-'07	07-'11	11-'15	2016 est.
Crude Oil	1862	17.2	3.1	2.9	-1.7	0.1	*1929*
Oil Products	1023	9.4	6.1	6.8	5.2	2.3	*1063*
Iron ore	1363	12.6	1.8	10.7	8.0	6.7	*1401*
Coal	1135	10.5	-6.5	5.4	6.9	3.2	*1111*
Grain	457	4.2	5.8	3.4	3.3	7.3	*469*
Bauxite & Alumina	126	1.2	20.0	8.8	7.8	2.8	*125*
Other Cargo	4870	44.9	1.9	4.6	6.2	4.0	*5001*
Total Trade	**10836**	**100.0**	**1.9**	**4.9**	**4.5**	**3.5**	*11099*

ISL 2016; Note: Bulk and oil trades as per Clarksons "Dry Bulk Trade Outlook" and "Oil & Tanker Trade Outlook", respectively. LPG trade covers OECD only. Grain includes soybeans.

Fig. 2: Main Container Routes 2015 (million TEU)



respectively. Huge amounts of raw materials are transported to East Asia from Australia, India, and South America.

Bulk commodities still dominate seaborne trade

Out of the total of 10.8 billion tonnes of seaborne trade, about 29.6% are crude oil, mineral oil products and gas. 28.4% are major dry bulks (Iron ore, Coal, Grain Bauxite and Phosphate Rock), 14.9% are minor bulks and the remaining 27.1% are general cargo, break bulk, ro/ro and to container shipments. According to the Review of Maritime Transport and other sources containerised cargo had a share of about 15.6% in total seaborne trade in 2015 in terms of tonnes. The major bulks' growth (except crude oil) was above average compared with other cargo types (*see Table 4*). The mentioned commodity groups show estimated growth rates of 4.0% (liquid bulk), 0.9% (dry bulk) and 4% (container) from 2015 to 2016.

Seaborne trade developments during 2015 can be summarised as follows:

- According to estimated statistics of Clarkson Research Services, world seaborne iron ore trade in 2015 reached 1.365 billion tons, of which the lion's share, 940 million tons, went to China.
- Coal and grain are of particular importance for the world seaborne trade. Without the drop of Chinese coal exports, world seaborne coal trade would have reached roughly the 2014 level. Instead, it ended up shrinking by 7.1 per cent. Clarksons Research suggests that total seaborne dry bulk trade growth came to a full stop in 2015, with little growth expected in 2016.
- Between 2011 and 2015, the seaborne trade volume of crude oil increased by only 0.3 per cent on average per year, whereas shipments of oil products gained around 3.0 per cent on average during the same period. Oil shipments are traditionally mostly affected by demand patterns in OECD countries, but during the last 10 to 15 years the demand growth of oil products in countries like India, China and Vietnam has become increasingly important.

In 2015, the most important export regions for coal shipments were Indonesia and Australia, which together account for two thirds of the global coal exports, followed by South Africa and North America at a distance. Together, these four countries accounted for 85% of the total world seaborne coal exports. As already pointed out, the total trade volume of coal decreased by 6.5% per 2014/2015. The average growth over a period of ten years amounted to only 5.3%. Total seaborne trade consequently reached an estimated 1,135 million tonnes in 2015. On the import side, asian countries held the lion's share, namely three quarters of the total world seaborne coal imports.

Iron ore exports originate mainly from Australia and Brazil, which had an increasing share of 56.4% and 26.6% in 2015, respectively. Similar to the coal trade, iron ore is to a large extent destined for Asia. 1,211 million tons of the global iron ore imports end up in Asian furnaces, around 940 million tons alone in China.

Fig. 3: World Seaborne Trade 2015 by Main Importing and Exporting Regions (Volume %-share)

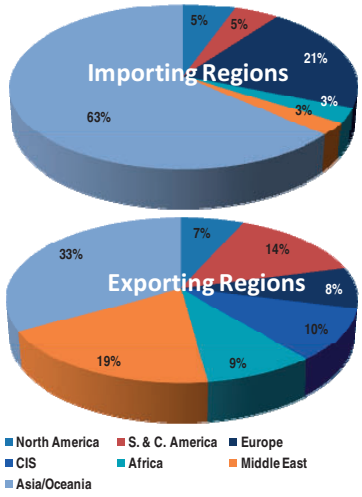
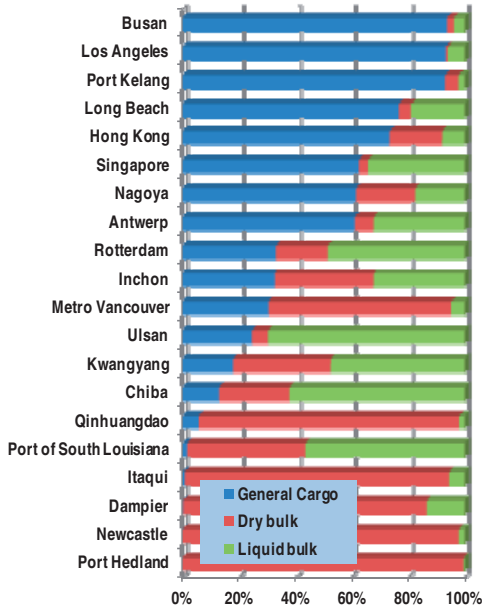


Fig. 4: Distribution of Cargo Types for Selected Ports (per cent of total cargo traffic 2015)



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Tab. 3: Total cargo traffic and container traffic by port regions 2006 – 2015

	Total cargo traffic			Container traffic in TEU				
	No of	average yearly growth		No of	% share of total TEU		Mill TEU	average yearly growth
Port regions (a)	Port	'06-'15	'14-'15	Port	2006	2015	2015	'06-'15	'14-'15
America	**112**	**0.9**	**-1.4**	**82**	**18.1**	**15.0**	**88.8**	**2.2**	**1.0**
N. America Atlantic	43	-0.5	-0.7	26	5.4	4.7	27.8	2.7	5.5
N. America Pacific	11	-0.6	-7.1	9	7.4	4.4	26.3	-1.4	1.7
Central America	21	5.0	5.3	18	2.1	2.7	15.9	7.2	-6.3
S. America Atlantic	22	3.2	-1.0	17	2.2	2.2	12.9	4.0	2.1
S. America Pacific	15	5.4	1.9	12	1.0	1.0	5.9	4.8	-3.3
Asia	**106**	**3.4**	**-1.1**	**90**	**56.7**	**62.5**	**370.0**	**5.4**	**0.2**
North East Asia	32	2.9	-3.1	27	34.6	37.9	224.5	5.4	-0.1
South East Asia	40	3.8	1.7	36	16.0	17.5	103.6	5.3	0.0
Western Asia	34	5.4	4.7	27	6.1	7.1	42.0	6.1	2.2
Europe	**135**	**0.4**	**1.4**	**114**	**19.3**	**16.1**	**95.3**	**2.2**	**-4.6**
North Europe	38	0.5	1.3	33	11.0	9.0	53.2	1.9	-0.7
Baltic Sea	52	-0.5	-2.0	38	1.8	1.5	9.2	2.6	-12.7
South Europe	45	0.6	3.5	43	6.4	5.6	33.0	2.6	-8.2
Other Regions	**83**	**5.4**	**0.5**	**61**	**5.9**	**6.4**	**38.2**	**5.3**	**0.0**
Oceania	32	6.7	-0.9	16	1.9	1.7	10.2	3.1	-3.7
Africa	51	3.6	2.9	45	4.0	4.7	28.0	6.2	1.5
World	**436**	**2.5**	**-0.5**	**347**	**100.0**	**100.0**	**592.3**	**4.3**	**-0.5**

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The country's imports increased on average by 11.3% p.a. between 2011 and 2015 but only 2.8% from 2014 to 2015, while all other Asian imports climbed by only 3.4% on average during the same period.

WORLD PORT TRAFFIC GROWTH LAGGING BEHIND

The first four years of the new decade show shrinking growth rates, both in total cargo traffic and in container traffic, but more apparent in the latter. Total cargo throughput of the top 100 world ports grew by 0.5% in 2015 after 3.5% in 2014. Next to a slowdown of seaborne trade growth, decreasing transhipment shares seem to limit growth.

World container port traffic developed in line with economic progress: generally unsatisfactory. Figures of our ISL Port Data Base show a marginal growth of 0.4% (reaching 614.3 Million TEU), the smallest growth since the global economic crisis in 2008. The ISL port data base covers more than 95 per cent of the world container port traffic.

As in last year, this development is mainly driven by volume increases above average at ports in emerging economies. Brazil (represented by 9 ports in our data base) is the only emerging country within the top twenty list, that shows a negative year on year change. Although the transport volumes increased above average, the 0.9% growth of all Chinese Ports together should be noticed with particular attention, as the People's Republic represents nearly one third of the world container throughput (see *table 4.3.1 on page 28)*. A relatively pleasant development was observed in the US. On average box traffic of 28 ports climbed by 4.6%, reaching 45 million TEU in 2015.

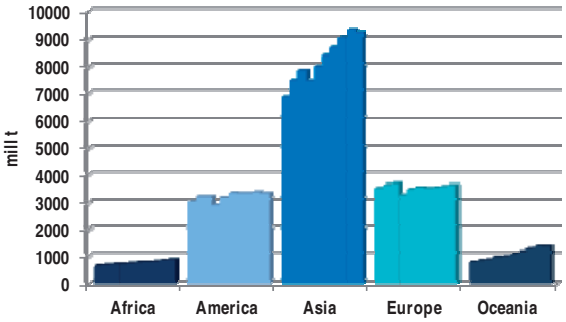
As already pointed out, the year-on-year comparison of port traffic between 2014 and 2015 looks quite inhomogeneous.

Most ports in the list of fastest growing ports, showing growth rates above 10% or more, are bulk orientated, as the ports of Botas/Turkey (+37%, increasing oil exports), Primorsk (+11.1%) and Saldanha Bay/South Africa (+8.9%) illustrate, but a combined traffic growth of 21% up to 119.9 million tons put Santos/Brazil second in the list of fastest-growing ports. Next to Santos, are Chittagong/Bangladesh and Karachi/Pakistan, showing growth rates of 15.8% and 15.3%, respectively. Chittagong has not been a candidate for the top list last year as its cargo traffic did not meet the 50 million criterion back then.

The list of ports with the strongest setback of cargo traffic includes for the first time since many years, 4 Chinese ports, namely Dalian (-5.0%), Guangzhou (-5.1%), Qinhuangdao (-5.8%) and Hong Kong (-13.9%). Moreover, only three of the ten biggest Chinese ports, namely Ningbo/Zoushan, Qingdao and Xiamen recorded (moderate) traffic gains

All in all the development of the ports at the end of *Table 6* seems to be the result of national or macroeconomic tendencies. Also, Asian ports are increasingly shaping world port traffic. Among the ports covered in the ISL

Fig. 5: **Development of cargo traffic of major seaports grouped according to continents 2006-2015**



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Tab. 4: **Total cargo traffic - the ten fastest growing and declining ports 2014 and 2015**

Port	Country	Total traffic in mill t 2014	2015	% change over prev. year
Ports with highest growth				
Botas	Turkey	56.8	78.1	37.4
Santos	Brazil	99.1	119.9	21.0
Chittagong	Bangladesh	47.3	54.8	15.8
Karachi	India	43.4	50.0	15.3
Manila	Philippines	51.0	57.4	12.4
Primorsk	Russia	53.7	59.6	11.1
Visakhapatnam	India	58.0	64.2	10.7
Daesan	Korea, Rep. of	63.2	69.3	9.6
Izmit	Turkey	59.0	64.6	9.6
Saldanha Bay	South Africa	66.1	72.0	8.9
Ports with strongest setback				
Dalian	China, PR of	337.4	320.7	-5.0
Guangzhou	China, PR of	501.0	475.5	-5.1
Hamburg	Germany	145.7	137.8	-5.4
Qinhuangdao	China, PR of	261.7	246.6	-5.8
Bremen/Bremerhaven	Germany	78.3	73.4	-6.2
Osaka	Japan	86.5	80.0	-7.5
Kaohsiung	Taiwan	123.0	110.9	-9.8
Bandar Abbas	Iran	76.3	67.7	-11.3
Hong Kong	China, PR of	297.7	256.5	-13.9
St. Petersburg	Russia	61.2	51.5	-15.8

Note: Including ports with at least 50 million tonnes of cargo traffic
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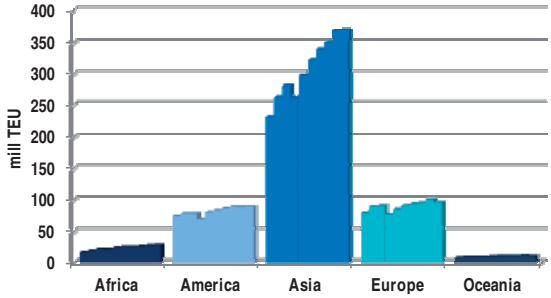
Fig. 6: **Development of container traffic of major seaports grouped according to continents 2006-2015**



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ISL Port Data Base

The ISL Port Data Base contains structured, comparable data from 1980 onwards for approximately 400 leading world ports.

Container traffic (55 items)

- TEU (laden/empty)
- Containerised cargo (tons)
- Degree of containerisation
- Container traffic by continent

Port Data Base, their share increased from 39% in 1996 to 45% in 2009 and 49.5% in 2015. In container traffic, the predominance of Asia is even higher: 64% in 2015.

UNEVEN DEVELOPMENTS IN THE MAJOR PORT RANGES

The ISL port traffic analysis allows a detailed appraisal of regional trends by grouping ports according to continents and sub-regions as equivalents for trading areas. Also, regional splits of cargo traffic for these ports show their interrelation with other world regions.

Asia

Total cargo traffic

As mentioned above, Asian port traffic developed all in all disappointing in 2015, with positive signs of activity only in India and South Korea (see *Figure 6*).

Even Malaysia, represented by 7 ports in ISL's records, only showed an increase of 1.6% yoy. Much better were the results with respect to container traffic, which climbed by 6.8% to 23.6 million TEU over all seven ports. Concurrent, the Malaysian Government gave the go-ahead for a port industrial city planned for Malaysia's Carey Island worth RM 200 billion (€ 42 bilion) including a new port capable of handling 30 million TEU when fully built and huge investments in landlocked infrastructure as well as large industrial complexes. As the port of the terminals of port Klang will run out of capacity in 2025 at the latest. Moreover, the Malaysian Government plans to increase total infrastructure investments by 9% per year up to EUR 42 billion.

Just on the other side of the strait of Malakka, the port of Singapore is building a big terminal at Tuas which is designed for 65 million TEUs. As it is placed in a distance to the main city of Singapore, this area is also decided to be the location for heavy industries.

Port investments in Indonesia are mostly focussed on easing congestion, as for example dwell times for ships at the port of Tanjung Priok was roughly a week or more in the past. The investments done so far have already brought this down to 3.7 and 4.2 days last year.

In India several port development projects took place during the last year and brought capacity gains of 94 million tons, allowing for the total throughput of Indias ports to grow by 4.5% and the container throughput by 6%. Moreover, the modernization of infrastructure led to a reduction of turn-around times by 5% and a decrease of preberthing detention by 13%.

While Japanese ports show a mixed picture, the South Korean and Taiwanese competitors mainly developed well, showing growth rates above 5%. Best performer with regard to total cargo throughput were the Philippines, showing an increase of 9%.

In Australian ports, cargo traffic increased again in the fiscal year 2013/2014 and also 2014/2015 after the surge caused by increased Chinese demand for raw materials in 2010/2011. Twelve of the biggest Australian ports are more or less pure dry bulk ports with a share of bulk traffic of more than 80%. Most impressing is the development of the port of Port Hedland, which more

Fig. 7: RWI/ISL Container Throughput Index (2010=100)

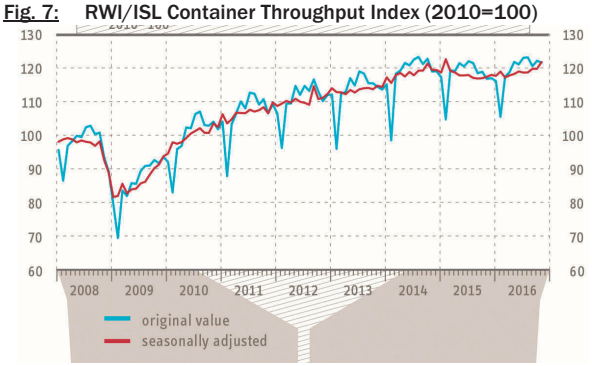

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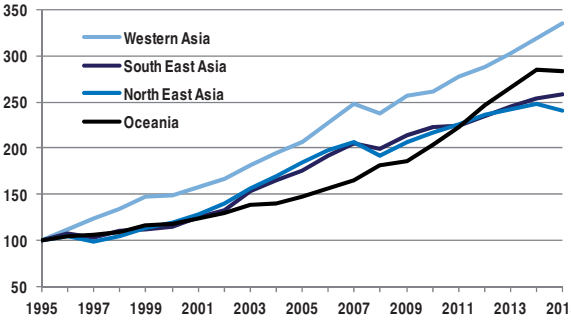
Fig. 8: Asian ports - cargo traffic of ports according to sub-regions 1995 - 2015 (Index 1995 = 100)



Note: Based on 91 Asian ports for which full data is available
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Tab. 5: Cargo traffic of Asian ports by countries 2011 - 2015 (in mill. tons)

Region	Unit	2011	2012	2013	2014	2015	%-change '14/'15	av. annual growth 11-15
North East Asia								
China	MT	3304	3502	3718	3794	3703	-2.4	2.9
South Korea	RT	935	966	977	1027	1069	4.1	3.4
Japan	FT	864	879	890	902	887	-1.6	0.7
Taiwan	MT	210	207	207	217	204	-6.0	-0.7
South East Asia								
Singapore	FT	531	538	561	581	576	-0.9	2.0
Indian subcontinent	MT	645	608	633	661	689	4.3	1.7
Malaysia	MT	443	445	456	489	497	1.6	2.9
Western Asia	MT	800	854	893	938	981	4.7	5.2

Units: MT - metric tons, FT - freight tons; RT - revenue tons
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Tab. 6: Cargo traffic of Top 10 Asian ports 1996 - 2015 (in mill. tons)

		mill tons					average yearly growth			
	Unit	1996	2001	2006	2011	2015	96-01	01-06	06-11	11-15
Shanghai	MT	171	221	470	590	647	5.2	16.3	4.7	2.3
Singapore	FT	314	313	449	531	576	0.0	7.4	3.4	2.0
Qingdao	MT	60	104	224	372	476	11.6	16.6	10.7	6.4
Guangzhou	MT	74	128	303	448	475	11.7	18.8	8.1	1.5
Ningbo	MT	64	129	310	349	449	14.9	19.2	2.4	6.5
Tianjin	MT	60	114	258	460	440	13.5	17.8	12.3	-1.1
Busan	RT	98	151	230	282	348	9.1	8.8	4.1	5.4
Dalian	MT	68	100	200	211	321	8.3	14.8	1.0	11.0
Kwangyang	RT	51	69	195	220	272	6.4	23.0	2.4	5.5
Hong Kong	MT	84	97	167	276	262	3.1	11.4	10.5	-1.3

Unit: MT - metric tons; FT - freight tons
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than doubled its throughput during the past five years up to 447 million tons, mostly iron ore, making it the fifth biggest port in the world.

The league of major Asian ports is impressive: each of the top ten Asian ports handled more than 250 million tonnes in 2015. Combined, their cargo traffic amounted to 4.27 billion tonnes - 8.4% less than 2014 but still a quarter more than all of Europe's ports taken together.

In a long-term perspective, it seems that the times of moving from one record growth rate to another are over. There is a noticeable slowdown of average yearly growth between 2007 and 2015 compared with the early 2000s.

Container traffic

After an increase of 3.3% in 2014, container traffic in Asian ports increased at a very low level (0.4%) to 374.7 million TEU in 2015 (see *Table 10*). As for total cargo traffic, there are noticeable differences between and within the sub-regions. The Indian subcontinent and western Asia performend below average, while China, Japan and South Korea performed remarkably better.

Based on country information from our Port Data Base, 30.2 per cent of the world's full container shipments originate in China, and another 33.6 per cent in the total rest of Asia.

A look at the top 15 Asian container ports reveals that the major transhipment hubs, namely Singapore, Hong Kong, Shenzhen, Dubai and Kaohsiung grew at rates below average during the past years or showed negative results.

Most recent data suggests that even for the success-spoiled Chinese ports, the development of container traffic in 2016 is quite unedifying.

The performance of the top 5 Asian ports during the first nine months of 2016 was as follows:

- Shanghai: +0.9%
- Singapore: -2.0 per
- Hong Kong: -7.1%
- Shenzhen: -0.8%
- Busan: -1.0%

Backbones of the Chinese industrial production are imports of huge volumes of raw materials such as coal and iron ore, whose predominant origin is Australia. Consequently and similar to the mean developments of Chinese container ports, the Australian bulk ports like Port Hedland and Gladstone only showed marginal cargo increases of 4% during the first three quarters of 2016, compared with an average growth of more than 16% on average during the past five years.

Europe

Total cargo traffic

The European ports throughput flatlined overall during 2014/2015. The 135 European ports covered in the ISL Port Data Base showed a traffic increase of 1.4% in 2015. All in all 3.50 billion tons of cargo were shipped to and from these ports (see *Table 11*). The stagnation of the overall volume is the result of positive export results and a decline of imports.

Tab. 7: TEU traffic of top 10 Asian ports 1996- 2015

	mill. TEU					average yearly growth			
Port	1996	2001	2006	2011	2015	96-01	01-06	06-11	11-15
Shanghai	4.2	14.0	24.9	35.3	35.3	27.2	12.2	7.2	0.0
Singapore	15.9	21.3	25.9	33.9	33.9	6.0	3.9	5.5	0.0
Shenzhen	3.0	13.7	18.3	24.0	23.8	35.5	6.0	5.7	-0.2
Ningbo	0.6	4.0	10.3	19.5	22.4	46.1	20.8	13.5	3.6
Hong	16.2	22.0	21.0	22.2	19.5	6.3	-0.9	1.1	-3.3
Busan	5.5	11.4	11.9	18.7	18.4	15.6	0.9	9.4	-0.3
Qingdao	1.5	5.1	10.3	16.6	16.6	27.2	14.8	10.2	0.0
Guangzho	1.2	3.3	11.2	16.4	16.2	22.9	27.6	7.9	-0.3
Dubai	2.8	6.4	11.1	15.2	14.8	17.7	11.6	6.5	-0.8
Tianjin	1.3	3.8	8.6	14.1	14.1	24.0	17.7	10.3	0.0

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Tab. 8: Container traffic of Asian ports 2011 - 2015 by countries (in mill. TEU)

Region	Unit	2011	2012	2013	2014	2015	%- change '14/'15	av. annual growth 11-15
North East Asia	**TEU**	**195.6**	**205.0**	**213.9**	**224.6**	**224.5**	**-0.1**	**3.5**
of which								
China, PR of	TEU	144.0	152.5	159.2	168.1	169.0	**0.5**	**4.1**
Korea, Rep. of	TEU	20.6	21.6	23.2	23.8	24.7	**3.4**	**4.5**
Japan	TEU	17.1	16.5	17.0	17.1	16.1	**-5.6**	**-1.4**
Taiwan	TEU	13.4	13.9	14.0	15.1	14.4	**-4.5**	**1.7**
South East Asia	TEU	**90.4**	**95.6**	**97.3**	**103.6**	**104.1**	**0.5**	**3.6**
of which								
Singapore	TEU	29.9	31.6	32.6	33.9	30.9	**-8.7**	**0.8**
Malasyia	TEU	19.6	20.3	20.6	22.1	23.6	**6.8**	**4.8**
Indian subcontiner	TEU	13.3	13.2	13.2	14.0	14.8	**5.9**	**2.8**
Viet Nam	TEU	8.5	9.4	9.9	12.1	12.6	**4.2**	**10.3**
Western Asia	TEU	**39.4**	**42.5**	**43.3**	**45.1**	**46.1**	**2.3**	**4.0**
of which								
UAE	TEU	15.8	17.0	17.6	19.5	20.0	**2.6**	**6.0**
Saudi Arabia	TEU	5.7	6.6	6.6	6.3	7.8	**23.6**	**8.2**
Turkey	TEU	2.7	2.9	3.3	3.6	3.6	**1.4**	**8.0**
Total	**TEU**	**325.4**	**343.1**	**354.4**	**373.3**	**374.7**	**0.4**	**3.6**

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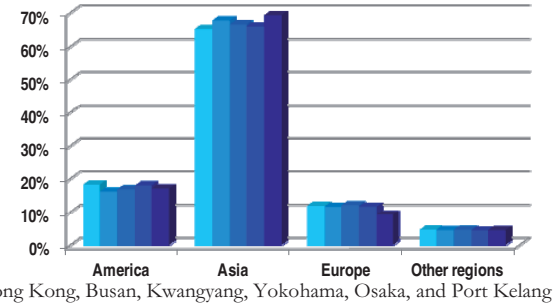
Fig. 9: Regional spreading of container traffic of selected Far Eastern ports by continent 2011 - 2015 (in mill. TEU)



Hong Kong, Busan, Kwangyang, Yokohama, Osaka, and Port Kelang
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Statistical details "Monthly Container Port Monitor"
- Monthly container traffic by major ports p. 51-58

Statistical details " World port development"
- Port traffic league by total cargo traffic p. 30
- Port traffic league by total container traffic p. 31
- Asian ports - port traffic growth by major countries p. 32
- Comparison of the most and least dynamic ports p. 32
- Cargo traffic by major Asian ports by sub region p. 33

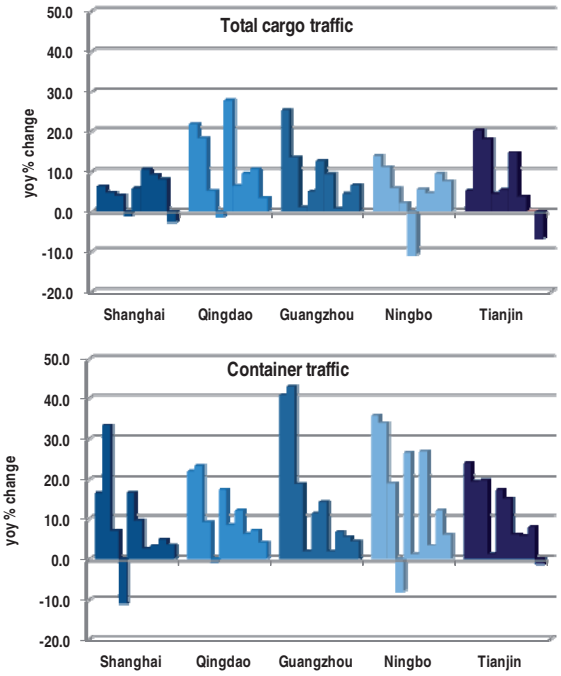
General cargo traffic decreased by 0.5%. Dry bulk traffic slumped 2.8%. Liquid bulk traffic figures were the only increasing ones, as throughput of liquids in European ports climbed by 5.3% to 1.3 billion tonnes.

About 38.2% of the mentioned 3.4 billion tons crossed the quays of the ports in the North range, i.e. ports between Le Havre and Hamburg, 13% alone are shipped over the quay walls of Rotterdam. A further 19.3% are attributable to the Baltic Sea ports and another 14 percent are shipped through ports in Italy, Greece and Croatia and the French ports at the Mediterranean Sea region. The remaining 24 percent are attributable to UK/Irish ports, ports on the Iberian Peninsula, French Atlantic coast ports and Black Sea ports.

Five of the top ten European ports are located in the continental North Range stretching from Le Havre to Hamburg. Together, they handled almost 965 million tonnes of cargo. An ever-increasing portion of this traffic is container traffic, which is subject to competition between the ports – especially the transhipment traffic. The impact of market share losses can be severe. During the 2008 economic crisis, Hamburg lost market shares to the other North Range ports and in 2009, the port lagged some 0.6 million TEU behind Antwerp. Subsequently, the port won back especially Baltic Sea transhipment volumes. During the first nine months of 2016, the port of Hamburg handled 6.7 million TEU, equal to a decrease of 0.1%. The port of Hamburg could thus be headed to reach a total throughput close to 9 million TEU in 2016, while the Port of Antwerp will likely meet the 10 million TEU mark again and show a year-on-year growth of around 4%. Bremen/Bremerhaven, on the other hand, is estimated to reach the previous year's volume and show a 0.4% decrease of container traffic during 2016. The Port of Rotterdam will have estimated container traffic of 12.0 million TEU, equal to a 0.4% decrease compared with 2015.

Regarding the first three quarters of 2016, the winner in the rivalry of the top (North-) European container ports is the Port of Antwerp, as it is the only of the top five ports showing a noticeable traffic growth (+4%). Its competitors meanwhile stagnated or showed a small decrease. In contrast to the top ports, the ports in the second tier now reap the rewards of their efforts and lure traffic from the market leaders. Looking on the ISL's Monthly Containerport Monitor shows the success of eg Wilhelmshaven and Gdansk in Northern Europe, and Pireaus and Barcelona in the Mediterranean. After opening a new deep water berth, the port of Gdansk recorded a 23.3% growth over the first month of 2016 up to nearly one million TEU in that time. Also the four year old port of Wilhelmshaven eventually attracted volumes, showing a traffic increase of 26.4% to around 411,000 TEU – nonetheless it is a long way to go to reach its annual capacity of 2.7 million TEU.

Fig. 10: Year on year growth rates of the top five Chinese ports 2006 - 2015

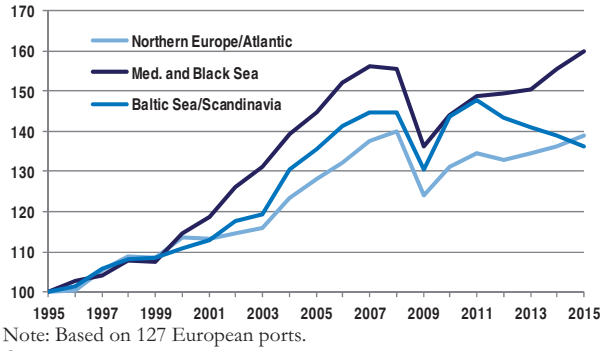


Tab. 9: Cargo traffic of European ports by loading categories 2011 – 2015 (in mill. tonnes)

	2011	2012	2013	2014	2015	Av. an. growth 11-15
General cargo	1402	1394	1400	1466	1459	1.0
% growth	9.1	-0.6	0.5	4.7	-0.5	
Dry bulk	700	702	743	770	751	2.8
% growth	1.6	0.2	5.9	3.6	-2.5	
Liquid bulk	1339	1313	1277	1253	1319	-0.2
% growth	6.2	-2.0	-2.7	-1.9	5.3	
Total sample	3441	3408	3420	3488	3529	1.9
% growth	6.4	-1.0	0.4	2.0	1.2	

Note: Based on 126 European ports for which full data is available, representing 95 % of total registered European cargo traffic.

Fig. 11: Total cargo traffic of European ports by region 1995 – 2015 (Index 1995 = 100)



Note: Based on 127 European ports.

America

Cargo traffic

Weal and woe of North American ports actually depends on the type of cargo a port is specialised in, and on the geographic trade relations each port is connected with. In anticipating the modernization of the Panama Canal, which enables 87% of the world merchant fleet including container vessels up to 14,000 TEU to pass the Isthmus, especially the North American West coast ports try to tread a new path and step up cooperations in Port Regions. The previous dispute cost manufacturers hundreds of millions of dollars in lost business due to a slowdown in cargo handling that began in November 2014. In addition, it appears that the Port of Miami and Port Everglades are now considering further advantages of increased cooperation.

The more bulk-related ports in the United States and Canada are mostly located in the Gulf region (liquid bulk) or in the Great Lakes region (iron ore, coal and grain). In case of liquid bulk handling, these ports mostly show positive results with regard to the years 2014 and 2015. Worth mentioning are for example the huge traffic increases of the ports of Beaumont and New Orleans. Traffic increases of these two ports were 13.2% and 8.1%, respectively (*see table 2.3.2.3 on page 24*). They benefited from a restructuring of US oil trade as the US is now a crude oil exporting country.

The Atlantic coast container ports benefit from the economic pickup situation in some European countries and show containertraffic increases between 6% (Charleston) and 11.7% (Savannah). The port of New York/New Jersey as number one container port on America's Atlantic coast showed a container throughput of 6.37 million TEU, equal to an increase of 10.4%.

The pacific coast ports are with the exception of Metro Vancouver and Prince Rupert predominantly general cargo/container ports. They are now mostly benefiting from the stable economic growth in Asia and good export conditions in North America. The twin ports of Los Angeles and Long Beach together showed a container traffic of 15.35 million TEU in 2015, this is equal to a step of only 1.3% compared with one year before. The two ports' TEU traffic climbed 2.3% on average during the last five years.

Central American ports add another 22.4% to the total container port traffic in the Americas. Next to the hubs on both sides of the Panama Canal, fruit exports in reefer containers are of great importance. Similar to ports at the isthmus of the Americas, the share of container throughput of South American ports is around 22%, equal to 17.1 million TEU. It is worth noting the 10% decrease in Brazils second largest container port, the Port of Itajai (984,000 TEU in 2015).

Total cargo traffic measured in tons however is four times higher in South America than in Central America. The biggest three Brazilian dry bulk ports, namely Tubarao, Itaqui and Sepetiba, shipped a 390 million tons of cargo in total, some 50 million tons more than all ports

Tab. 10: Cargo traffic of major European ports 1996 - 2015 (in mill. tonnes)

	mill tonnes						% Change	average yearly	
Ports	1996	2001	2006	2011	2014	2015	14/15	01-06	06-15
Rotterdam	284.4	313.7	378.4	434.6	444.7	466.4	4.9	3.8	2.3
Antwerp	106.5	130.1	167.4	187.2	199.0	208.4	4.7	5.2	2.5
Hamburg	70.9	92.7	135.3	132.2	145.7	137.8	-5.4	7.8	0.2
Amsterdam	54.8	68.3	84.3	93.0	97.8	98.8	1.0	4.3	1.8
Algeciras	34.2	49.0	66.3	76.9	88.1	92.0	4.4	6.2	3.7
Bremen/Bhv	90.7	92.4	100.1	88.1	78.5	81.9	4.3	1.6	-2.2
Marseilles	31.5	46.0	64.6	80.6	78.3	73.4	-6.2	7.0	1.4
Novorossisk	44.2	57.1	80.9	81.1	70.0	73.3	4.8	7.2	-1.1
Le Havre	15.8	28.4	47.3	65.5	71.9	69.6	-3.1	10.7	4.4
Valencia	56.2	69.0	73.9	67.6	66.9	68.3	2.1	1.4	-0.9
Total Top 10	**789.2**	**946.8**	**1198.5**	**1306.5**	**1340.8**	**1369.9**	**2.2**	**4.8**	**1.5**

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Tab. 11: Top 10 European container ports 1996 - 2015 (in 1000 TEU)

	Mill. TEU						% Change	average yearly	
Ports	1996	2001	2006	2011	2014	2015	14/15	01-06	06-15
Rotterdam	4.91	6.08	9.69	11.88	12.30	12.23	-0.5	9.8	2.6
Hamburg	2.65	4.22	7.02	8.66	8.98	9.65	7.5	10.7	3.6
Antwerp	3.06	4.68	8.88	9.01	9.78	8.82	-9.8	13.6	-0.1
Bremen/Bhv	1.53	2.97	4.44	5.92	5.78	5.55	-4.0	8.4	2.5
Algeciras	0.71	1.51	2.61	4.33	4.44	4.62	3.9	11.6	6.5
Valencia	1.31	2.15	3.26	3.60	4.55	4.52	-0.9	8.6	3.7
Felixstowe	2.06	2.84	3.03	3.25	4.07	3.68	-9.7	1.3	2.2
Gioia Tauro	0.57	2.49	2.94	3.31	3.71	3.51	-5.3	3.4	2.0
Marsaxlokk	0.58	1.17	1.40	1.68	3.49	3.36	-3.8	3.8	10.2
Le Havre	1.02	1.52	2.14	2.22	2.55	2.56	0.2	7.0	2.0
Total top 10	**18.40**	**29.63**	**45.41**	**53.85**	**59.66**	**58.49**	**-2.0**	**8.9**	**2.9**

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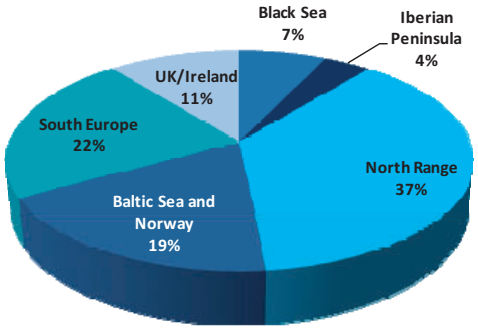
Fig. 12: Cargo traffic of European ports by region 2015 (% share of total throughput)



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North Range: Netherlands, Belgium, France/Atlantic, Germany/North Sea ports; Black Sea: Bulgaria, Romania, Urkraine, Russia; South Europe: Italy, Croatia, Greece, Slovenia.

Tab. 12: Container traffic of major North European ports with Asia 2011 - 2015 (in 1000 TEU)

Port	2011	2014	2015	%-change over prev. Year	av. an. % growth 11-15	% share of ports total TEU
Hamburg	5201	5244	4874	-7.1	-1.6	39.0
Rotterdam	5763	5815	5460	-6.1	-1.3	41.3
Antwerp	2548	3423	3163	-7.6	5.6	35.9
Felixstowe	1987	2341	2828	20.8	9.2	63.3
Bremen/Bhv	1752	1629	1543	-5.3	-3.1	29.3
Southampton	1287	1369	1311	-4.2	0.4	60.7
Total	**18539**	**19820**	**19179**	**-3.2**	**0.9**	**40.6**

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between Colombia and Mexico. Export of raw materials is especially depending on the economic situation in the import countries, consequently most ports show positive growth tendencies during 2014. Recently the conditions especially for Brazilian ports are depressive, as the country suffers from a slackening demand as well in South America as in Asia, main importers of Brazil's exports of raw materials.

Africa

Developments in Sub Sahara Africa

The ISL port Data Base covers 50 ports around Africa, of which 45 with time series of more than twenty years.

The economic crisis in 2008 caused a dent in the overall port development as adjacent graph impressively shows. Worth mentioning is the fact, that not only the number of importing containers is raising, as a sign of growing demand for industrial goods, but the export side is also growing. This leads to the conclusion that especially the general cargo/container ports are operating near their capacity's limit. Consequently a number of port projects to expand capacities are in the phase of planning. In some cases, construction is already in progress.

Cargo traffic

Based on a large number of already working ports, expansion projects in West African trade lanes are mostly directed at modernising the available infrastructure either on the port side or the hinterland.

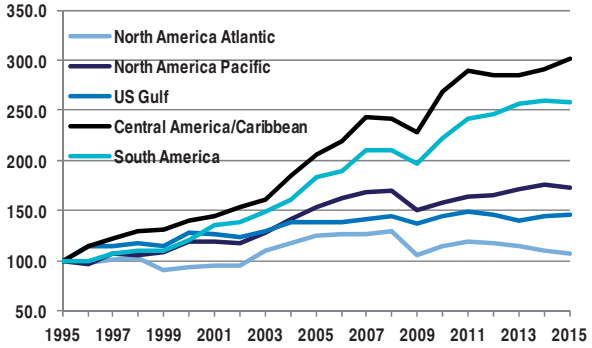
When analysing the development of the East African port situation, it is striking, that the number of bigger ports is much smaller than at the other side of the continent. Consequently developing projects are more or less centered on building new ports (eg Lamu, Kribi, Bagamayo, see below) and their hinterland connections especially to develop a transit connection to landlocked countries, aside from a few exeptions.

From 2011 to 2015, the total cargo throughput of East African ports rose from 61.2 million tons to 76.9 million. This equates to a growth of 5.9 % on average and a year on year growth of also 5.9 % in 2014/2105. In 2015 Kenia (the port of Mombasa) represented the lion's share with almost 33 % of total cargo handling followed by Tanzania (the port of Dar Es Salaam) which accounted for 17.4 per cent of the total turnover.

Container traffic

Container throughput of the 14 observed West African ports registered an accretion from 5.0 million TEU to 7.2 million from 2010 to 2015. This increase corresponds to a growth rate of 7.5% on average. Seven out of the mentioned 14 ports showed a container throughput of more than half a million TEU in 2015, with Luanda in the lead with nearly 1 million TEU followed by Apapa/Nigeria and Lome/Togo with 0.92 million TEU and 0.91 million TEU respectively. The port of Lome tripled the container throughput from 2014 to 2015. This is equal to the highest growth rate of all container ports covered in the ISL data base in the size segment of more than 500,000 TEU/year throughput.

Fig. 13: Cargo traffic of major American ports by regions 1995 - 2015 (Index 1995=100)



Note: Based on 107 American ports.

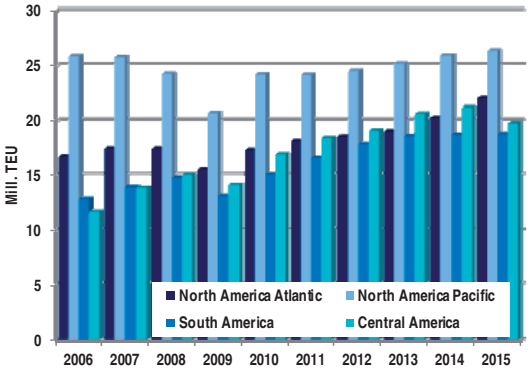
Tab. 13: Cargo traffic of top five South and North American ports 2011 - 2015 (in mill. tons)

North America	2011	2012	2013	2014	2015	%-change over prev. year	av. an. growth 11/15
Port of South	248.8	253.0	241.6	264.8	265.6	0.3	1.6
Houston	261.7	246.9	236.5	229.2	230.5	0.5	-3.1
Los Angeles	158.2	175.2	165.1	176.5	176.7	0.1	2.8
Long Beach	154.4	144.2	162.8	164.7	162.8	-1.1	1.3
Metro Vancouver	122.5	123.9	135.0	139.6	138.2	-1.0	3.1
South America							
Itaqui	128.9	133.5	135.4	144.2	146.6	1.7	3.3
Tubarao	136.6	133.6	131.2	134.5	137.3	2.1	0.1
Santos	97.2	101.1	109.3	99.1	119.9	21.0	5.4
Itaguai	97.7	103.8	104.8	111.6	110.4	-1.1	3.1
Sao Sebastiao	51.9	51.4	53.5	53.8	49.5	-7.9	-1.2

Tab. 14: Container traffic of top five South and North American ports 2011 - 2015 (in mill. TEU)

North America	2011	2012	2013	2014	2015	%-change over prev. year	av. an. growth 11/15
Los Angeles	7.94	8.08	7.87	8.34	8.16	-2.2	0.7
Long Beach	6.06	5.86	6.73	6.82	7.19	5.4	4.4
New York / NJ	5.50	5.53	5.47	5.77	6.37	10.4	3.7
Savannah	2.98	2.95	3.03	3.35	3.74	11.7	5.8
Seaport Alliance	3.53	3.58	3.49	3.43	3.53	3.0	0.0
SouthAmerica							
Santos	2.99	3.17	3.45	3.68	3.78	2.6	6.1
Balboa	3.23	3.25	3.06	3.24	3.08	-4.9	-1.2
Manzanillo, MX	1.76	1.93	2.12	2.37	2.46	3.8	8.7
Cartagena	1.69	2.02	1.87	2.21	2.44	10.3	9.6
Callao	1.62	1.82	1.86	1.99	1.90	-4.6	4.1

Fig. 14: Container traffic development of North, Central and South America 2006 - 2015 (mill. TEU)



Source: ISL Port Database 2016

As mentioned before, the number of larger ports at the Indian Ocean coast is smaller than on the Atlantic coast. Only 7 ports including Sudan and Djibouti are covered. Mombasa and Dar Es Salaam are the leading ports in this concern, showing a container throughput of 1.08 million TEU and 0.61 million TEU, respectively. This reflects the backlog of the East Africa, especially when the economic development of the landlocked countries like Simbabwe, Malawi, Sambia, Uganda and last but not least Ethiopia is considered.

Port Expansion

As already pointed out, there are numerous plans to expand the transport capacities in East and West Africa. Expansion projects in West Africa mostly concentrate on expanding existing ports. First to name are Tema port expanding and Takoradi new container terminal, both in Ghana, and Badagry deep sea project and Lekki Deep Seaport in Lagos Nigeria.

West Africa

Dakar

The Port of Dakar has the shortest hinterland distance to several West African landlocked countries such as Mali, Mauritania and Gambia to America. In consideration of this, the port modernized its Ro/Ro terminals for the import of new cars, as well as its container infrastructure and other general cargo facilities. Since 2014, the French containeroperator CMA/CGM opened its second containerterminal including a 15,000 m2 storage area.

Tema

A public-private partnership between the Ghana Ports and Harbours Authority and Meridian Ports Services (MPS), which is a joint venture between APM Terminals and Bolloré Transport & Logistics, involves a significant expansion of Ghana's main seaport.

The expanded port will have a 1.4 km quay with four deep berths, equipped with sophisticated container handling gantry cranes and terminal operating systems. Its capacity to accommodate cargo ships will consequently be four times greater than its current capacity. Tema Port will then be able to handle some of the world's biggest container ships, carrying up to 18,000 containers.

Takoradi

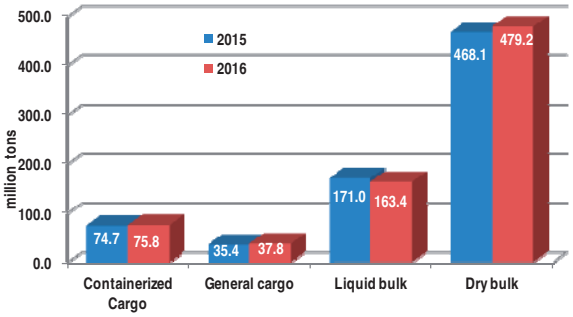
The Ghana Ports and Harbours Authority (GPHA) has entered into a joint venture agreement with Ibistek Crowley for the construction of a 7500 TEU off-dock container terminal at the Takoradi Port.

After the ongoing expansion works, the port will be able to handle a single large vessel to load 120,000 metric tonnes of cargo at a go, against the 40,000 handled by a vessel now.

Lome

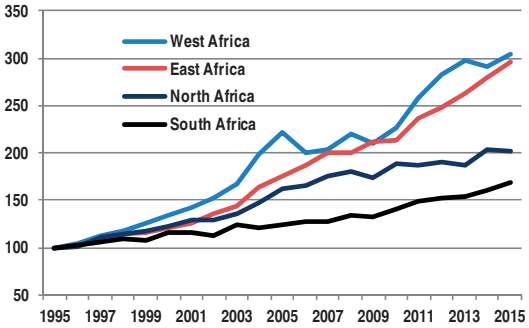
Expansion works in the port of Lome are already finished and made Lome the third biggest Container port in West Africa. The new third quay is a public-private partnership between the Togolese Government and the BOLLORE GROUP which is responsible for port operations, and

Fig. 15: Cargo traffic of Brazilian ports first nine month of 2015 and 2016 (in million tons)



Source: ISL Port Data Base, based on ANTAQ

Fig. 16: African ports - cargo traffic of ports according to sub-regions 1995 - 2015 (Index 1995 = 100)



Tab. 15: Cargo traffic of West and East African ports 2011 - 2015 (in mill. tons)

Region	Number of ports	Container traffic (in 1000 TEU) 1995	2000	2005	2010	2014	2015
East Africa	7	659	915	1653	2580	3610	3842
South Africa	6	1398	1961	3014	4012	4602	4550
West Africa	14	770	1430	3060	5036	6583	7246
Total	27	2826	4307	7727	11629	14795	15638

Region	% share of total TEU 1995	2015	Average yearly growth 1995 - 2015	2000 - 2015	2005 - 2015	2010 - 2015	% change over prev. year
East Africa	23.3	24.6	9.2	10.0	8.8	8.3	6.4
South Africa	49.5	29.1	6.1	5.8	4.2	2.5	-1.1
West Africa	27.2	46.3	11.9	11.4	9.0	7.5	10.1
Total	100.0	100.0	8.9	9.0	7.3	6.1	5.7

Tab. 16: Cargo traffic of top five West and East African ports 2011 - 2015 (in mill. tons)

West Africa	2011	2012	2013	2014	2015	%-change over prev. year	av. an. growth 11/15
Apapa/Nigeria	23.4	25.4	27.2	29.2	30.9	6.1	7.3
Pointe Noire/Congo	20.0	22.0	25.1	26.4	28.0	6.1	8.8
Abidjan/Ivory Coast	16.6	21.7	21.5	21.8	21.9	0.5	7.1
Lome/Togo	8.2	7.8	8.7	9.3	15.4	66.1	16.9
Dakar/Senegal	11.4	11.9	12.2	13.1	15.2	15.5	7.4
East Africa							
Mombasa/Kenya	20.0	21.9	22.3	24.9	26.7	7.5	7.6
Dar es Salaam/Tanzania	8.6	10.7	12.5	14.2	13.4	-5.8	11.9
Maputo/Mozambique	6.4	6.7	6.8	7.4	8.2	10.9	6.5
Port Louis/Mauritius	6.5	7.1	6.8	6.9	6.8	-0.8	1.4
Beira/Mozambique	4.5	4.8	5.6	5.6	6.1	9.2	8.0

enables the port to handle 7,500 TEU ships. In the past, the port was only served by 3,500 TEU ships at the most. The work was launched in early 2011 and after three years of work, inaugurated on October 14, 2014.

The new quay offers a 450 m long terminal and has a depth of 15 meters deep, with a storage area of around 38 hectares and expands the annual volume of the port to nearly 1.5 million containers.

Abidjan

Since 2014, the Abidjan Port Authority is undertaking major development projects aiming at rehabilitating existing infrastructure and building new ones. These projects include the construction of a second container terminal (TC2) at south quay. In this regard an agreement was signed between the port authority and a consortium of APM, Bolloré Africa Logistics and Bouygues Telecom Group. The future Terminal is planned to have a 1250 m long quay (3 berths) 18 m deep, 37.5 ha open storage and will be able to handle 8,500 TEU capacity ships. TC2 will handle at the end 1.5 million TEU per year, thus doubling container handling capacity of the Port of Abidjan.

The other major projects consist in the widening and deepening of the fairway of a port canal which would enable the port of Abidjan to handle ships with 16 m draught without any limit in length.

Sao Tome

The Government of the Republic of São Tomé e Príncipe and China Harbour Engineering Company Ltd successfully concluded discussions and signed a Memorandum of Understanding (MoU) for design and construction of a Deep Sea Trans-shipment Port in São Tomé e Príncipe. The Deep Sea Trans-shipment Port will be developed in phases and construction for the first phase is set to be completed by 2018. This landmark project will be developed with active private participation under a PPP model. The Port will be operational in 2019.

The total investment for all the phases of the project is estimated to be $800 million. China Harbour Engineering Company Ltd., (CHEC) plans to invest at least $120 million in the project and will also have the responsibility for engineering, design and construction of the project.

East Africa

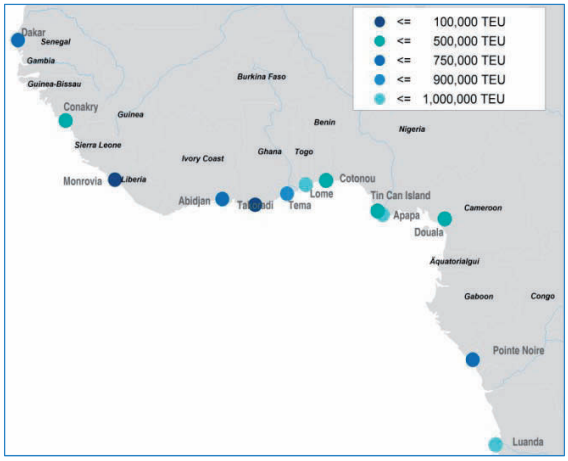
As already mentioned, East African transport volumes are only a third or half of the West African port volumes with respect to total cargo traffic and container traffic, respectively. The small number of bigger ports in this region, a huge hinterland, and capacity shortages in the existing ports, especially Dar Es Salaam and Mombasa makes Governments, private investors and international associations such as the African Development Bank more or less tend to invest in building very large new ports, than in modernizing in existing ports. The two considerable projects are the new Port of Bagamayo in Tanzania, around 60 km north of Dar Es Salaam and the port of Lamu in Kenia close to the border to Somalia.

Once finished, Bagamayo and Lamu are planned to be endpoint of important transport corridors to connect Central Africa's countries with the sea. New railways

Tab. 17: Container traffic of top five West and East African ports 2011 - 2015 (in mill. TEU)

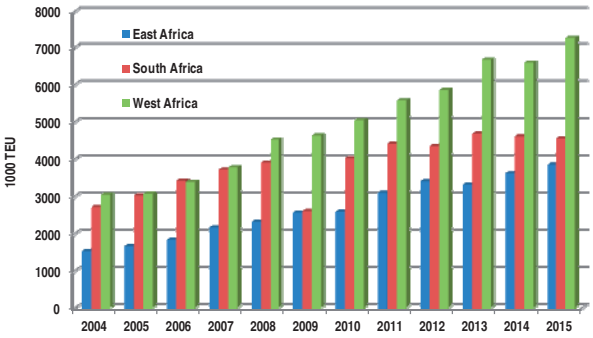
West Africa	2011	2012	2013	2014	2015	%-change over prev. year	av. an. growth 11/15
Luanda/Angola	0.68	0.65	0.91	0.96	0.98	2.3	9.7
Apapa/Nigeria	0.79	0.86	0.99	1.10	0.92	-17.0	3.8
Lome/Togo	0.35	0.29	0.31	0.35	0.91	158.5	26.6
Tema/Ghana	0.75	0.82	0.84	0.73	0.78	6.8	1.2
Pointe Noire/Congo	0.44	0.51	0.58	0.64	0.72	12.7	13.0
East Africa							
Mombasa/Kenya	0.77	0.90	0.89	1.01	1.08	6.3	8.7
Dar es Salaam/Tanzania	0.47	0.50	0.55	0.56	0.61	8.5	6.6
Port Réunion/Réunion	0.22	0.22	0.04	0.11	0.25	128.6	2.7
Beira/Mozambique	0.09	0.17	0.17	0.19	0.17	-9.0	19.1
Maputo/Mozambique	0.06	0.07	0.06	0.07	0.09	14.8	10.5

Fig. 17: West African container ports 2015



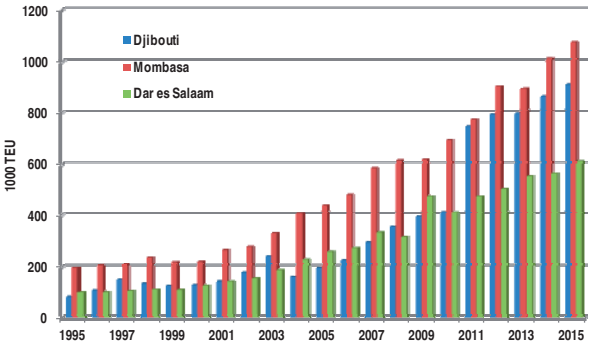
Source: ISL Port Database 2016

Fig. 18: Container traffic development of East, West and South African 2004 - 2015 (mill. TEU)



Source: ISL Port Database 2016

Fig. 19: Container traffic of the leading East African ports 1995 - 2015



from Lamu to South Sudan and Ethiopia are planned, while funding is currently being sought for a new line from Rwanda and Burundi to either Dar es Salaam or Bagamoyo.

Port of Lamu

The port of Lamu is planned to be the centre of a $25 billion infrastructure project—the Lamu Port South Sudan Ethiopia Transport (LAPSSET) Corridor—which will link Kenya with Ethiopia, Uganda and South Sudan. The plans include a railway, a highway, a crude oil pipeline and a fibre-optic cable connecting the four countries. The project will also include several airports, resort cities, an oil refinery, a 32-berth port in Lamu and other supporting infrastructure mini projects.

Once completed, the LAPSSET railway will connect to West Africa's Douala–Lagos–Cotonou–Abidjan Corridor, running through Cameroon, Nigeria, Benin, Togo, Ghana and Côte d'Ivoire respectively.

The Chinese "China Communications Construction Company" will build the Lamu Port off Manda Bay in three phases. The first phase, which began in 2015, involves the development of three berths at an estimated cost of $478.9 million, according to All Africa and will be finished in 2019. The complete port, covering a 10 km shore length will have the capacity to accommodate up to 23 berths and is expected for completion in 2030. Optimistic forecasts see a possible throughput of up to 20 million TEU at this time.

Bagamayo

Also the new port of Bagamayo will be constructed by a Chinese company, namely "China Merchant Holding International" and the Sultanate of Oman as partners of the government to build this $11 billion East African port. The goal is to serve domestic markets and landlocked countries in wider east Africa (e.g. Uganda, Rwanda, Burundi). Construction of this port will take place in phases, as and when required. The estimated completion date is 2045. Unfortunately the project suffers from insufficiency and corruption so that the whole project is currently under scrutiny.

Maputo

Port of Maputo will be undertaking dredging to increase its channel depth from 11 meters to 14 meters this year, to allow larger vessels entry.

ISL Editorial team

Fig. 20: Container traffic of the leading West African ports 1995 - 2015

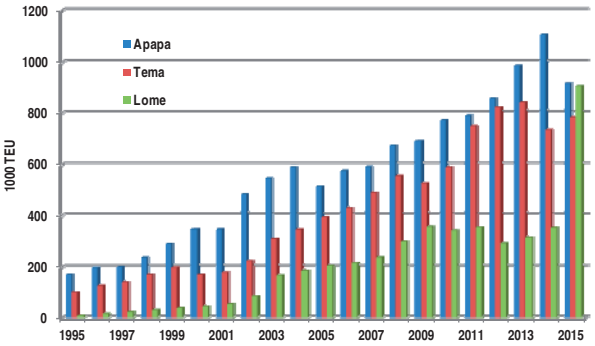


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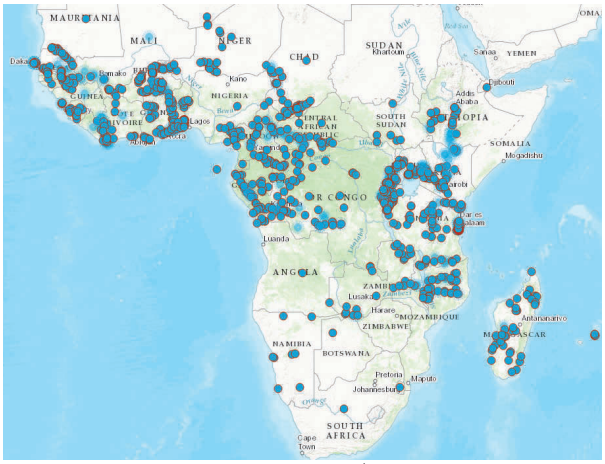
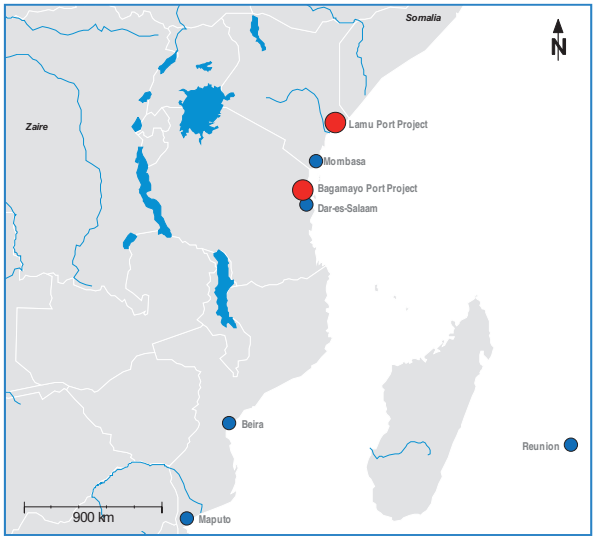
Fig. 21: East/West African transport infrastructure projects during 2009 -2015



Source: African Development Bank Group/Map Africa

Fig. 22: East African container ports and new port expansion plans 2015



Statistical details "Port traffic development by region"

ISL Monthly Container Port Traffic Indices 2014 - 2016 (Table 6.3)

ISL's Monthly Container Port Traffic Index is based on monthly container traffic of the world's top container ports. In total, the ports reflected in the index handled approx. 420 mill TEU in 2015, equalling 70 per cent of world container traffic. The monthly TEU volumes per port are available since 2000. The different regions are represented by the following ports:

Japan, S. Korea,	Busan, Gwangyang, Incheon, Kaohsiung, Keelung, Kobe, Nagoya, Osaka, Taichung, Tokyo, Yokohama
China:	Guangzhou, Hong Kong, Ningbo, Qingdao, Shanghai, Shenzhen, Tianjin, Xiamen
Other Asia:	Bandar Abbas, Bangkok, Chennai, Colombo, Dammam, Jeddah, Laem Chabang, Nhava Sheva, Singapore, Salalah, Nhava Sheva
North-America Pacific:	Long Beach, Los Angeles, Oakland, Seattle, Tacoma, Vancouver
North-America Atlantic:	Charleston, Houston, Montreal, New York/ New Jersey, Port of Virginia, Savannah
North Europe:	Antwerp, Bremen / Bremerhaven, Dublin, Gdansk, Hamburg, Helsinki, Klaipeda, Kotka, Le Havre, Lissabon, Rotterdam, St Petersburg, Tallinn, Zeebrugge
Mediterranean:	Alexandria, Ambarli, Ashdod, Algeciras-La Linea, Barcelona, Beirut, Genoa, Haifa, Marseilles, Mersin, Port Said, Valencia
Other Regions:	Balboa Panama, Brisbane, Buenaventura S.A., Buenos Aires, Callao, Cape Town, Durban, Guayaquil, Itajai, Kingston, Lazardo Cardena, Manzanillo Mx, MIT Panama, Melbourne, Montevideo, Ngqura (South Africa), Paranagua, San Antonio, Santos, Sydney, Valparaiso, Veracruz Mx

(Source: ISL Port Data Base 2016)

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the most comprehensive data base in port traffic

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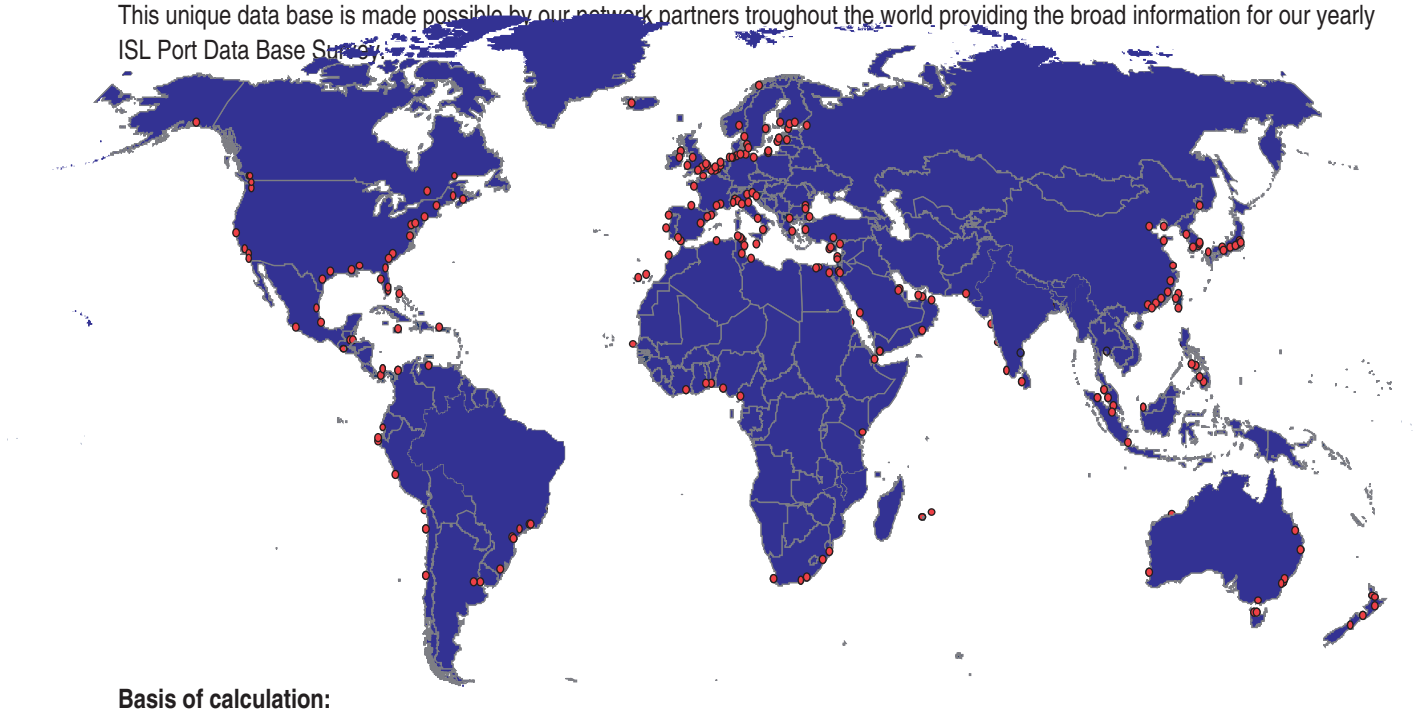

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Dieter Stockmann, Port Data Manager
Phone +49/4 21/2 20 96-33
eMail portbase@isl.org
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