

Pakistan's 'Blue Economy' Potential and Prospects

Asaf Humayun & Naghmana Zafar*

Abstract

[The idea of 'Blue Economy' recognizes the seas and oceans as main drivers for the economic development with great potential for innovation and growth. Pakistan is an important maritime state in the Indian Ocean blessed with approximately 1,050 km long coastline and the Exclusive Economic Zone covering about 240,000 sq. km. The maritime sector acts as the bedrock of the national economy. To optimally benefit from this natural endowment, there is a need for an integrated National Maritime Policy. Increasing the awareness and knowledge among the decision-makers as well as the general public and capacity building through public-private partnerships are required. Development of effective national compliance mechanism and stimulating renewal of potential maritime sectors through regional and international collaboration can usher the country into an era of significant growth. The efficiency of Pakistani ports should be enhanced by improving the network of rail and road infrastructure. The role of National Co-ordination bodies should be augmented. Impediments are there but efforts can surmount them. – Eds.]

The Blue Economy (Factors of Maritime Powers)

The world is facing major challenges to sustainable economic development. These include the issues of sovereignty and security, sustaining national development, access to food and energy, management of natural resources, effects of climate change, and resilience in the face of natural disasters. With a growing population, set to rise from seven billion today to over nine billion by 2050,¹ these pressures and impacts are likely to intensify unless the world becomes more intelligent about managing these essential resources. States are moving towards seas and oceans to sustain their economic development and national power and the phenomenon is known as "*Blue Economy*". The idea of Blue Economy recognizes the "*seas and oceans*" as main drivers for the economic development with great potential for innovation and growth. How these Blue waters can help Pakistan to speed up economic growth? What are the challenges we are facing to develop as a maritime nation? What are the opportunities available? And, how can these opportunities work for us?

The trend of "*Getting Blue*" might be new for the developing states but history reveals that all "*Great Powers*" of the world were

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¹ UNEP, Annual Report, 2012.

truly Maritime states. Nations such as Greeks, Portuguese, Dutch, British, American and many others learnt to safeguard their maritime interests at sea, and ruled the world. The point is what factors helped them to emerge as sea power and maintain their supremacy? Maritime Historians have defined certain pre-requisites for a nation to emerge as a sea power. These elements include:²

- a. Geography.
- b. Resources, which can be devoted to maritime tasks and forces.
- c. A strong maritime tradition & community.
- d. A maritime mind-set and governance borne out of dependence on sea.

Pakistan's Maritime Sector

Geography is the fulcrum of Maritime strategy and nations having access to open seas are the blessed ones. Pakistan's proximity to oil rich Gulf region has made us an important maritime state in the Indian Ocean. The country's geographic position gives it a strategic advantage in handling transit trade for landlocked Afghanistan and Central Asian countries. However, there is a need to implement smart and intelligent options to exploit this geographical edge. We already find Iran ahead of Pakistan in creating infrastructure to facilitate transit trade to the Central Asian region.³

Pakistan is blessed with approximately 1,050 Km long coastline. In terms of "coastline length" Pakistan is ranked 74th among the 142 coastal states. On the positive side, the sea boundaries of Pakistan are settled, other than Sir Creek. The land to coast ratio of Pakistan is 1.36.⁴ The *Exclusive Economic Zone (EEZ)* covers an area of about 240,000 sq. km. The case of maritime zone extension of the continental shelf up to 350 nautical miles (approximately 50,000 Sq. Km) from the coastline was presented before UN in 2009.⁵ Recently, it has been handed over to the sub-commission for technical scrutiny and subsequent approval without any objections.⁶ However, there is a misperception that after approval of Pakistan's claim, our EEZ will become the largest territorial unit of Pakistan in terms of area. In fact our total EEZ will still be smaller in size as compared to Balochistan and our EEZ will be the second largest province of Pakistan.

² Till, *Maritime Strategy and The Nuclear Age*, 13.

³Iran launched the Chabahar Port project supported by Indian investment to facilitate trade to Afghanistan and Central Asia. Source: *Tehran Times* 11721, June 2, 2013, <http://www.tehrantimes.com/economy-and-business/108214-india-aims-to-invest-100m-in-irans-chabahar-port> (accessed January 15, 2014).

⁴ CIA Fact book -The "coast/area ratio" measures how many meters of coastline correspond to every square kilometer of land area. The ratio illustrates the ease of accessibility to the country's coast from every point in its interior.

⁵"Pakistan's Sea Limit set to be Extended," *Dawn*, May 7, 2009.

⁶Ansar Abbasi, "UN takes key step to confirm Pak claim over 50,000 sq kms in Arabian Sea," *The News*, September 01, 2013.

Pakistan also has mangrove forests of about 160,000 hectares.⁷ It is positioned at 24th number in the world in terms of mangroves area.⁸

Allah Ta'ala created Pakistan as a maritime nation. Pakistan is blessed with extended coastline, natural harbours, abundant marine resources, unhindered sea trade and committed maritime professionals. However, it appears that sea is entirely absent from the national priorities as reading of this paper will reveal. Indeed a large portion of our population will pass their entire life without ever setting their eyes on the blue waters washing Pakistan's shores.

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The maritime sector acts as the bedrock of our national economy as 95 per cent of trade and 100 per cent of our oil/coal imports are transported via the sea route.⁹ Our daily life depends upon the smooth function of our link to the sea. The electricity that lights and powers our factories, businesses, offices, homes, and streets, needs the oil brought to our ports in increasing quantities by huge oil tankers. The usual daily diet in Pakistan of tea and the food cooked in oil requires free flow of maritime trade. However, most people in Pakistan are unaware of our maritime lifeline. We suffer a case of sea blindness.

In 2012-13 our exports were about 24.5 billion dollars and imports nearly 45 billion dollars. According to the World Bank, the external trade (total import and export) as a share of GDP was 32.9 percent in 2012.¹⁰ *Pakistan's* 95 percent trade (nearly 31% percent of GDP) takes place through sea¹¹ i.e. nearly 66.5 billion dollars of Pakistan's trade is sea borne. Our exports had nearly doubled in volume at about 17% rise every year till 2007. However, the downward trend is quite evident after 2008 (Figure: 1). The imports rose at about 7% every year. Thus, it can be presumed that Pakistan is capable of achieving good growth in sea-borne trade if the environment is right. In this perspective, reports suggest that in the year 2013-14, total trade is anticipated to see a real growth at the rate of 11.3%.¹²

⁷ Food and Agriculture Organization, "World Mangroves Forest."

⁸ Ibid.

⁹ S M Hall, "Pakistan's Maritime Compulsions," *The Nation*, November 21, 2012.

¹⁰ The World Bank, "Merchandise Trade."

¹¹ Adeela Khan, "Gwadar Port: Growing beyond," *Pakistan Observer*, August 01, 2013.

¹² Business Monitor International, Pakistan Shipping Report.

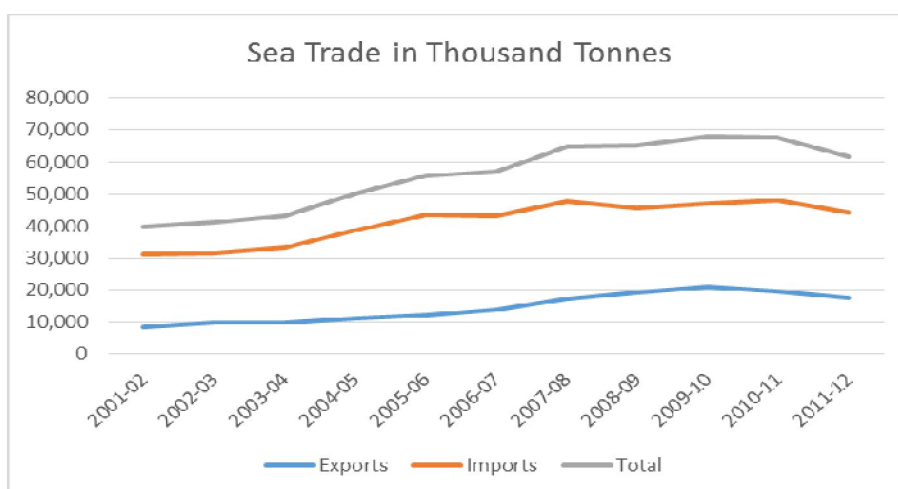


Figure 1: Imports and Exports of Pakistan

Impediments and Opportunities

The maritime economic domain of Pakistan comprises of a number of sectors, and the résumé of these sectors with particular focus on the impediments and hurdles in achieving excellence can highlight the potential for future growth.

a. Shipping

The state-owned National Shipping Corporation (NSC) had been formed in 1963. 1971 was the golden era for merchant shipping and Pakistan's flag flew from 71 national and privately owned vessels.¹³ The fleet strength declined to 57 vessels after the separation of Bangladesh. In 1974, the Government nationalized 10 shipping companies. They were merged into PSC (Pakistan Shipping Corporation) and NSC— a total of 51 ships.¹⁴ In 1979, the 2 shipping companies were merged into PNSC, which remains today the largest and the only national shipping company.

At present, PNSC fleet comprises of nine vessels of various types and sizes (Six Bulk carriers & Three Aframax tankers) with a total deadweight capacity (cargo carrying capacity) of 642,207 tonnes.¹⁵ According to the statistics released by the government almost 99% of crude oil imports are undertaken by PNSC.¹⁶ PNSC is planning for acquisition of four tankers – two Aframax tankers for transportation of fuel oil and two product tankers for transportation of white oils. With

¹³ UN ESCAP, Country Report from Pakistan.

¹⁴ Ibid.

¹⁵ Highlights Survey of Pakistan 2012-13.

¹⁶ The Economic Survey of Pakistan, "Transportation and Communication."

the present capacity (Fleet size) PNSC cannot fulfil the trade requirement of the country. Most of solid cargo to Pakistan is transported in containers but PNSC does not possess a single container vessel due to its business strategy. PNSC has remained profitable for more than 10 years. (Figure 2)

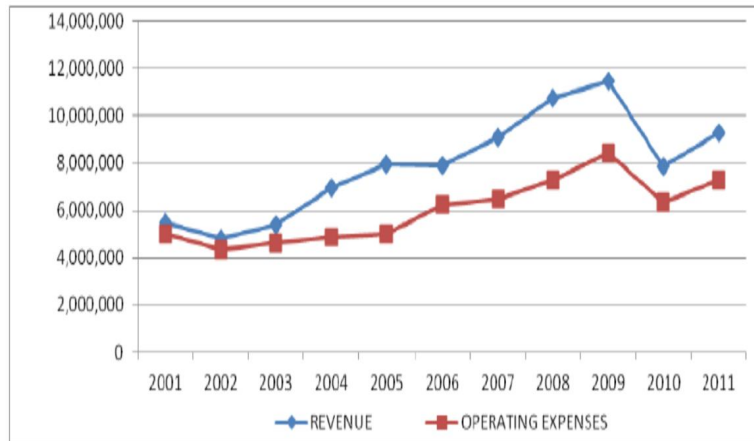


Figure 2: A comparison of revenue vs. operating expenditure of PNSC

Despite a depressed shipping scenario worldwide, PNSC has improved its profitability and earned a profit of Rs. 2,558.2 million during 2011 against Rs 1,466.0 million in the same period last year. Similarly total cargo lifted during Jul 12 – Mar 13 was 8,730 thousand tonnes against 6009.7 thousand tonnes last year.¹⁷

Pakistani flagged vessels are only handling about 7% of external dry cargo trade, resulting a substantial economic lose. As 92 percent of global trade is conducted through ocean vessels, there is huge opportunity for investors in Pakistan to invest in the shipping industry. The shipping industry received severe setback due to nationalization policy in 70s and couldn't recover. Thus, the private ownership and public-private competition in this sector diminished forever.

The Government has tried to lure private parties into shipping sector. In July 2001, a very liberal Shipping Policy was announced. As a result, two companies invested in this sector.¹⁸ However, their business plan did not succeed because of slump in shipping industry, wrong selection of vessels, inability to get guarantee for assured cargo from the government etc. After 9/11 the scenario has changed and several Pakistanis have ships registered under Flag of Convenience

¹⁷Ibid.

¹⁸MEGA & Forbes, and Dewan Shipping Lines Ltd had registered their vessels in Pakistan.

(FoC). This is not a bad thing as long as they employ Pakistani crews and bring their earnings to Pakistan.

Shipping industry, around the globe is not only a source of foreign exchange for the country but also acts as a catalyst for setting up of allied industries such as ship management, ship building, ship repairs and ship breaking, marine surveying, insurance etc. The IMO reported that world fleet has grown 37 per cent in the last four year. Pakistan can be part of this trend through private financing and economic incentives for this industry.

b. Ports and Maritime Infrastructure

Karachi Port Trust was created in 1882 and it was the only port in West Pakistan. The port of Karachi is Pakistan's largest and busiest seaport, handling about 60 percent of the nation's cargo.¹⁹ It has two container terminals KICT and PICT, operated by private sector. Karachi Port has a 11.5 kms long approach channel with the depth of 12 meters (being deepened progressively) and a turning basin of 600 meters. It has 30 dry cargo berths, (13 berths on West Wharves, 17 berths on East Wharves) and 3 liquid cargo berths.²⁰ Statistics showed that in 2011-12, KPT managed nearly 38 million tons of dry and wet cargo. It handled 1.5 million TEUs and more than 1700 ships visited the port. The Karachi Port provides safe navigation for vessels up to 75,000 metric tonnes deadweight (DWT). About 5000 person are employed in KPT.²¹

At the moment Karachi Port Trust is undertaking the biggest project in its history i.e. Pakistan Deep Water Containers Port (PDWCP). This project located to the east of oil piers comprises in Phase I, four berths with 1500 m quay wall. The channel and the basin depth has been kept as 16 meters, which will be eventually increased to 18 meters (Figure 3). Project is scheduled for completion in 2014. Once completed, it will be able to handle 3.2 million TEUs per year. The phase 1 of project was estimated to cost less than 37 billion rupees. In the 2nd phase of the project a Port bridge and cargo village in the west of existing harbour will be constructed (yet to start) and the cargo capacity will be increased to 12 million TEUs per annum. KPT is also rehabilitating 6 berths on East Wharf. To have maritime cluster of shipping, multinational companies, stevedoring, banks etc near Karachi port, KPT has planned to launch Port District Project and KPT -77 Maritime enclave in near future.²² To realize the full benefit of these projects the rail and road connectivity of Karachi Port need major up-gradation.

¹⁹International Finance Corporation, "An Assessment of Opportunities and Constraints in the Logistics Industry in Pakistan."

²⁰ Ministry of Ports and Shipping, GoP, "Gateway to Pakistan and Beyond."

²¹ Ibid.

²² Ibid.



Figure 3: Pakistan Deep Water Containers Port (PDWCP)

Port Qasim is Pakistan's second busiest port, handling about 40 percent of the nation's cargo. It is located in a channel of the Indus River called Phitti Creek, 35 km east of Karachi.²³ The approach to the port is through a long 45 km navigation channel. One of its major advantages is its proximity to different national transport facilities. It is 15 km away from the national highway, directly linked to the railway network through six tracks and 22 km away from the international airport. Port Qasim has mostly privately owned jetties and terminals for both liquid and solid cargoes. It also has 2 private container terminals. Pakistan's only private petroleum terminal FOTCO is also located at Port Qasim and second private oil terminal is under construction. More than 1100 Ships visit Port Qasim annually. Port Qasim handled more than 26 million tons of cargo during the financial year 2010-11.²⁴ PQA handled 538,000 TEUs (Twenty Equal Units) in 2012-13. The growth in container traffic during the nine months of 2012-13 is 6% over July-March 2011-12.²⁵ In year 2013- 14 tonnage through put at Port Qasim is forecast to grow to 26.6 mn tonnes and the container traffic will grow to more than 800,000 TEUs. To meet the future requirements, the present capacity of PQA is to be increased for ships of more than 75,000 tonnes. Moreover, Government is planning to build 3 privately owned LNG terminals at PQA.²⁶ Moreover, to enhance the production and export of textile products a "Textile City" is also being established in the eastern industrial zone of PQA. The project is expected to be operational in near future.²⁷

²³ Ibid.

²⁴ Pakistan Economic Survey, 2010-2011.

²⁵ Highlights from the Survey of Pakistan 2012-13.

²⁶ Hina Mahgul Rind, "LNG Developers Eying Terminals at Port Qasim" *The News*, March 23, 2012.

²⁷ "Textile City Concept to Develop Industrial Estate," *The Nation*, September 25, 2013.

The port of Gwadar is a new development located at the entrance of the Persian Gulf on the Arabian Sea and about 460 km west of Karachi, in the Balochistan province. It became operational in 2008. It is a deep water port, being constructed in two phases with heavy investment from China. The government of Pakistan has projected this port as the first link in the development of an energy and trade corridor to China and Central Asian Republics, by providing them with short access route to the markets in the Middle East and Europe. The Government has sanctioned 330 million dollars recently to create the Gwadar Kashgar trade and economy corridor, connecting Gwadar to south-western China.

The total cargo handled at the port up till now is 5.0 million tonnes. Only 145 Ships have called at Gwadar Port since 2008.²⁸ Why Gwadar port has been unable to match other ports of Pakistan? The issues of port connectivity and unstable socio-political situation are the

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main reasons that this mega project could not attract required private investments. The road and rail connectivity of this port has not received the high priority it deserved in the last 6-8 years and these links remain incomplete. The government's premature announcement to develop another port on Makran coast in 2007, in Sonmiani closer to trade-industry hub in Karachi

had also hampered the foreign investment and strategically affected the competitive image of Gwadar.²⁹

In 1947 Karachi Port could handle only 1.5 million tons of solid and 1 million ton of liquid cargo. Today Pakistani ports have grown from 2.6 million tons per annum to nearly 65 million tonnes per annum³⁰ (Figure 1). Still a huge potential for growth exists. The links to all our Ports need up-gradation. Both ports in Karachi have railway link, which now-a-days is dormant. Gwadar lacks direct road link to up-country and to Quetta. Without the routes to rest of the country, ports shrivel.

To facilitate the trade near ports, 2 major export zones (EPZs) established under the administration of Ministry of Industries and Production are; Karachi Export Processing Zone (KEPZ) and Gwadar Export Processing Zone (GEPZ). Moreover, one privately owned EPZ in

²⁸ Ibid.

²⁹ Then President of Pakistan stated in the inauguration ceremony of Gwadar port, "I want to announce that this year Insha Allah Pakistan's fourth and Balochistan's second seaport would be developed in the area of Sonmiani and its ground-work would start this year." referred to Documents (January - June 2007), published by Institute of Policy Studies, Islamabad.

³⁰ Ministry of Ports and Shipping, GoP, op.cit.

Port Qsim was also established in 2005. Around the globe, export processing zones are known to be an effective tool for economic growth and development. Both, KEPZ and GEPZ are static in this role so far. They are nothing more than a depository or a platform used for distribution of cargo. To transform our ports into a maritime cluster of regional competence, an integrated and dynamic EPZ structure is paramount.

c. Seafaring

According to International Maritime Organization (IMO) the estimated shortfall in seafaring is 84,000 personnel.³¹ Pakistan can contribute a large number of trained seafarers to fill this gap and gain good revenue. Nevertheless, it is sad to know that Pakistani seafarers are gradually losing their share in the international employment market. Pakistan has around 20,000 registered seafarers. At present approximately 5,000 seafarers are employed in international fleet, while in 2001 this number was 7,300.³² Their estimated revenue contribution in national economy is roughly US \$25 million annually. The share of Philippines and India currently stands at around 300,000 and 60,000 seafarers respectively and rising rapidly. Indian seafarers remit US \$ 1 billion annually whilst Philippine seafarers are earning US\$ 4 to 5 billion for their country. Analysis reveals that

Pakistan's declining supply of seafarers is actually indicative of country's inability to benefit from the shortage of seafarers at international level.

Pakistani seafarers are hardworking, competent and competitive as compared to other nationalities.³³ Pakistan Marine Academy was established in 1962. Pakistan has always been listed in the International Maritime Organisation's (IMO) 'White List' i.e. fulfilling the criteria of International Convention on Standards of Training, Certification and Watch-keeping for Seafarers, (commonly known as STCW).³⁴ Our seafarers also face difficulty in obtaining visa and in clearance procedures after 9/11. Pakistan's declining supply of seafarers actually indicates country's inability to benefit from the shortage of seafarers at international level. To exploit the employment potential in seafaring it is important that Ministry of Ports and Shipping should proactively pursue the employment of Pakistani seafarers within

³¹Pervaiz Asghar, "Pakistan Needs to Recognizes Services of its it Sea Farers," *Pakistan Today*, October 2 , 2011.

³² Waqar Humza, "*Pak Seafarers' Jobs Share Reduced* ," *The Nation*, April 26, 2010.

³³ Waqar Humza, "Worldwide Seafarers Shortage to Double by '11'," *The Nation*, August 25, 2009.

³⁴ Detail of IMO White List is available on the official link appended below: http://www.imo.org/blast/mainframe.asp?topic_id=68&doc_id=513 (accessed January 21, 2014).

the major seafaring hubs such as Greece, Cyprus, Singapore and other countries. It is imperative that the issue of difficulties and delays in the issuance of visas to Pakistani seafarers should be taken up by the Ministry of Foreign Affairs with foreign missions in Pakistan and a viable solution like pre-screening and pre-scrutinizing of our seafarers should be worked out as soon as possible. It is expected through concerted efforts, this sector can earn remittances of up to US \$0.5 billion per annum.³⁵

c. Ship breaking and Recycling

Ninety two per cent of ship recycling in 2011 took place in India, China, Bangladesh and Pakistan³⁶ (Table 1). The table shows that the top recycling states, India, China, and Bangladesh, have a larger share of the world's ship-recycling industry.

	India	China	Bangladesh	Pakistan	Turkey	Rest of the World	Total
Tankers	1811	610	830	1485	98	157	4992
Bulk carriers	3215	4367	4527	1240	205	114	13668
Container and other passenger	3370	1318	464	176	830	353	6511
Offshore and other work vessels	366	59	136	548	18	260	1388
Total	8762	6354	5957	3449	1152	884	26558

Table 1: Top countries handling the types and number of demolished ships (IHS 2011)

Pakistan, despite its capacity, has a smaller share of just 11%.³⁷ The only shipbreaking yard of Pakistan is located in Gadani on Balochistan coast. There are 127 shipbreaking plots in Gadani from where the scrap metal and other materials are trucked to Karachi for recycling. This sector provides employment opportunities to about 15,000 workers.³⁸ This industry indirectly facilitates the livelihood of more than 400,000 individuals. In the 1980s, the Gadani ship breaking yard was known to be the world's largest, with more than 30,000 direct employees.³⁹ However, in 2011, the ship recycling industry provided only 27 percent of the melting steel scrap⁴⁰ (Figure 4). High sales tax,

³⁵ Ibid.

³⁶ UNCTAD, "Review of Maritime Transport."

³⁷ Mikelis, "Ship Recycling Markets and the Impact of the Hong Kong Convention."

³⁸ "Two Laborers Die at Gadani Ship-breaking yard," *The News*, July 2, 2013.

³⁹ Ramapati, "Ship Dismantling - A Status Report on South Asia."

⁴⁰ Mikelis, *op.cit.*

income tax etc. and competition from ship breaking yards in India and Bangladesh have reduced Gadani's output.

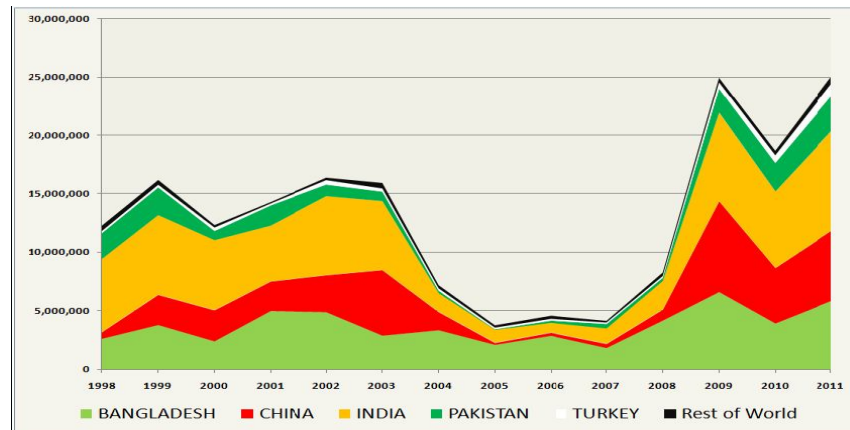


Figure 4: Annual volume of recycled tonnage by country of recycling (IHS Fairply)

Looking at global shipping scenario, this industry can enjoy good growth for at least next 5 years. The government needs to make long term taxation policies so that this sector can contribute in employment as well as revenue generation in the province of Balochistan. If the sustenance of this industry can be assured, Pakistan can turn attention to improvement of facilities such as water supply, electricity for the industry, workers training, better living conditions, environmental protection etc.

d. Fishing and sea food industry

According to an estimate, Pakistan has fish and seafood industry worth \$1.2 billion. Exports alone fetch about US\$ 240 million per annum.⁴¹ The industry's contribution in GDP is about 1 per cent.⁴² The fishing sector provides employment to an estimated 1.5 million persons with more than half the workforce in the coastal areas of Sindh and Baluchistan.⁴³ Fishing fleet of the country comprises of 14,000 large and small boats.⁴⁴ In terms of fish production Pakistan is ranked 28th in the world.⁴⁵ Total fish catch in Pakistan is about 600,000 tonnes, out of which 400,000 tonnes is contributed by marine fisheries. Nevertheless; only 10 per cent of the total catch is

⁴¹According to Dr. Nasim's Report on Fisheries Sector of Pakistan- 2011, the export of sea food products increased from US\$ 213 in year 2007-08 to US\$ 240 in year 2008-09.

⁴² Alam, "Fisheries Sector of Pakistan."

⁴³Khan, "Impact of Somali Piracy on the Fisheries of Pakistan."

⁴⁴ Ibid.

⁴⁵ Ministry of Food, Agriculture and Live Stock, "National Policy and Strategy for Fisheries and Aqua Culture Development in Pakistan," 2007.

exported. While 60 per cent is used to produce fish meal and remaining 30 percent is consumed locally.⁴⁶

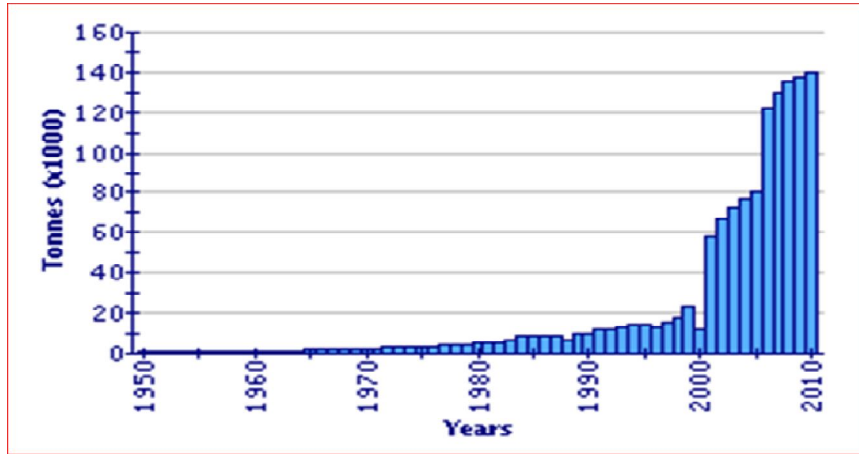


Figure 5: Total Fish Production in Pakistan (FAO)

The seafood industry is under threat from two sides, one is from indiscriminate & unsound fishing practices, which may reduce the resource base and hence the yields. The other is from poor quality control, which means that the value of the catch is not being maximized and a lot is wasted.⁴⁷ The post harvest handling and trash fish is one of the main issues hampering the quality control.

Use of banned nets and fishing in the closed season are the illegal and unauthorised activities that cause devastating loss to fish breeding. Moreover, bycatch⁴⁸ produced due to deleterious fishing practices is simply pillage of marine resources. It is a critical issue threatening the ecosystem and survival of endangered species. These wrongful fishing practices are attributed to lack of awareness among fishermen community, ineffective regulatory framework and poor enforcement mechanism. Furthermore, unreported fishing and smuggling of catch is causing substantial drain of our marine resources. Nearly 200 tonnes of prime fish species are smuggled from Pakistan daily. Only through strict control, monitoring, and implementation of laws all these issues can be curbed. Lack of co-ordination among the various stakeholders is the main hurdle that affects the administrative control of fisheries.

⁴⁶Alam, op.cit., 13.

⁴⁷UNIDO, "Enterprises Based Fisheries Sector Study and Strategic Plan for Interventions."

⁴⁸ Bycatch refers to unintentional catch while fishing. It includes wrong size species or specie that are not eaten or have less/no market, banned or endangered species such as certain birds, turtles and marine mammals.

Pakistan has enjoyed strong export performance in fish products for about 20 years. This performance has been aided by natural advantages resulting directly from the high fish production capabilities of the Arabian Sea. However, an in-depth comparison shows that, Pakistan is not a low cost producer compared to countries like Thailand and Indonesia which rely on aquaculture and can undercut Pakistani price by more than 20%.⁴⁹ The high cost is attributable to high cost of fishing (fuel) plus an absence of a comprehensive current survey and knowledge of fish stocks.

Every year poaching by Indian fishermen causes a loss of Rs 8.1 billion.⁵⁰ The availability of high-priced catch forces these intruders to take this risk. According to sources of Pakistan Maritime Security Agency, from January 2012 to March 2013, 184 boats with 606 Indian fishermen were apprehended. However, only 12 Pakistani boats were caught by the Indian authorities across maritime boundary during the same period.⁵¹

Aquaculture is the fastest growing food production sector around the globe. United Nation's Food and Agriculture Organization (FAO) reported the growing share (around 35%) of aquaculture in fish production. However, aquaculture is relatively a recent activity in Pakistan. Only 15 % of the fish is produced through aquaculture and out of which the share of salt-water fish is almost negligible.⁵² The provinces of Sindh and Baluchistan have only 32 and 100 farms respectively. The aquaculture production of Pakistan is negligible when compared with regional states including India and Bangladesh. However, development prospects of this sector appear promising. It is estimated that an export potential of US \$1.00 billion per annum can be realised.⁵³ There is a strong need to enhance fisheries and aquaculture development to increase its contribution to national economic growth, poverty alleviation and food security. Awareness, training and appropriate support are essential for this progress.

e. Ship Building

Karachi Shipyard & Engineering Works Limited (KSEW) is the only shipyard in Pakistan that is catering for country's ship building, ship repairing and heavy / general engineering requirements. KSEW has two dry docks of 18,000 tons dead weight (DWT) and 26,000 DWT capacity respectively. There are three Ship Building berths, each equipped with heavy machinery and allied facilities where construction of vessels can be undertaken simultaneously.

⁴⁹ Ibid.

⁵⁰ Akram, "Sustainable Management of Marine Fisheries and Roles of PMSA."

⁵¹ Khalid Khokhar, "Facts About Illegal Indian Fishing Activity Inside Pakistan EEZ," *The News*, April 15, 2013.

⁵² Iftikhar, "Aquaculture Development in Pakistan."

⁵³ Ibid.

KSEW was designed to build and repair ships for the local and foreign customers in early 1950s. The yard commenced its commercial production in 1957. SS AL-ABBAS of about 13,000 DWT was the first major ship to be built at the Karachi Shipyard in 1967. So far, it has

In view of the potential, there is a strong need to focus on fisheries and aquaculture development.

built over 430 vessels of different types, repaired 5000 vessels of all nationalities and built over 2000 heavy engineering units.⁵⁴ It is a government owned entity and has the capability for building mid-sized vessels including submarines, Cargo Ships, Oil Tankers, Bulk Carriers and Warships, and other small or large craft. KSEW is now mainly engaged in

warship construction. The facilities at KSEW are being upgraded. However, due to physical limitations KSEW cannot handle construction or repair of most ships calling at Karachi Port.

The world has witnessed a steep rise in sea borne trade with the growth in population and economic activity. Following the trend, some of the global states have set their eyes on shipbuilding industry such as China, South Korea, Japan and others. Pakistan can only exploit the economic potential of ship building by creating investment opportunities for private sector and proper marketing strategy. Recently, the government has decided to build a new ship construction and repair yard at Gwadar, which will initially be able to service ships of up to 100,000 tonnes. The plans are being finalised.⁵⁵ Although we can operate with a comparative cost advantage, but shipbuilding also requires advance training and education in ship designing and technologically sound manpower. The capacity building in this field needs attention.

f. Offshore Resources

Offshore area of Pakistan comprises of two basins; Indus and Makran. The Indus basin is the second largest offshore basin in the world⁵⁶ and exploration in this region was first carried out in 1961 by Sun Oil Company. At present about 17 companies are operating in the offshore area of Pakistan to exploit the potential reservoir of hydrocarbon resources⁵⁷ without visible results. The cover area of offshore sedimentary region is about 300,000 sq kms, which is highly under-explored. Recorded drilling density for oil and gas finding in this area is a meagre 0.4 per 10,000 sq kms when compared with exploration in

⁵⁴ "On the Voyage of Sinking," *Dawn*, September 17, 2006.

⁵⁵ "PN Fleet Tanker Project Launched," *Dawn*, November 27, 2013.

⁵⁶ "Pakistan Offshore Hydrocarbon Prospective," *Business Recorder*, November 13, 2012.

⁵⁷ Official statistics available at the website of Ministry of Petroleum & Natural Resources Government of Pakistan.

other parts of the world.⁵⁸ Other than that, Oil and Gas Company limited (OGDCL) carried out intensive surveys to undertake Pakistan Basin Study Project.⁵⁹ The study revealed that Pakistan's offshore area holds promising potential for hydrocarbon discoveries. The survey conducted by National Institute of Oceanography for the assessment of gas reserves in deep sea revealed that Pakistan is among the top 7 countries of the world in terms of methane gas reserves.⁶⁰ Nevertheless, improved policy incentives and globally competitive investment regulations by the government can unlock the offshore petroleum prospects of Pakistan.

Pakistan's coastal area is also rich in living and mineral resources. Coastal seaweeds (marine vegetation) are available in great abundance in the Arabian Sea, particularly in the sedimentary region of the Makran coast. The expected value is as high as 112 ton/hectare (UN ESCAP Report 1996). The seabed plants are termed as high export value item not only for their universal use as food but also for medicines.⁶¹ The exploration and exploitation of offshore resources require heavy investment and expertise. At present, Pakistan may not be able to probe these options but with proper environmental management we can sustain these resources without harm for the future generations.

Policy incentives and globally competitive investment regulations can unlock the off-shore petroleum prospects.

g. Coastal Tourism

Globally, tourism is the largest market segment and is growing rapidly. The tourism economy represents 5 per cent of the world GDP and provides 6-7 per cent of the global employment. In almost 150 countries of the world, it is one of the five top earning industries. It is the main source of foreign exchange for one-half of developing nations.⁶² The global trends suggest rapid growth of this industry over the next 20 years. However, in Pakistan no comprehensive assessment of the potential of coastal and marine tourism exists. It is limited to local populace only and has never been considered as a potential source of revenue by public or private sector. Coastal tourism development can support local economy and reduce poverty. The private sector must be mobilised to support sustainable tourism along our coast as well as sea cruise industry.

⁵⁸ Ibid.

⁵⁹ "OGDCL Releases Pakistan Basin Study Report," *The News*, July 21, 2011.

⁶⁰ Faiza Ilyas, "Report Highlights Gas Hydrate Resource Potential," *Dawn*, October 6, 2013.

⁶¹ Khan, "Marine Resources in Pakistan," 838.

⁶² UNEP, "Green Economy in Blue World," 17.

Policy Framework

Apart from the strengths, weaknesses, potential and impediments discussed in each sphere of maritime economic sector of Pakistan, some emerging challenges tend to effect maritime development and economic policies around the globe.

a. Growing Environmental Concerns

“A worldwide transition to a low-carbon, resource-efficient Green Economy will not be possible unless the seas and oceans are a key part of these urgently needed transformations”⁶³

The environmental threats to the Arabian Sea and coastal ecosystem are increasing as a result of unchecked pollution, climate change, in the form of ocean acidification, frequent and extreme natural disasters, sea level rise etc. These will also impact our coastal and maritime infrastructure. Dumping of waste in sea causes depletion of marine resources and also threatens the fish production in Pakistan. Through international conventions and legislations, the maritime industry is being compelled to follow rules for “Eco-friendly” operations.

b. International Regulatory framework

The global trends show that contribution of maritime sector will increase with expansion in population, economic activity on land,

Global trends show that contribution of maritime sector will increase with expansion in population, economic activity on land, development of new opportunities like renewable energy.

development of new opportunities like renewable energy (wind, waves, tides etc.) and food (aquaculture, under-exploited wild-catch fisheries). To ensure sustainable maritime development and management, the global regulatory framework for the maritime sector is provided by several international organisations but mainly by the International Maritime

Organization (IMO), through nearly 52 International treaties/regulations. The most important of them are concerning the safety of life at sea, the protection of the ocean environment, ship design and recycling etc. As per estimates these regulation are applicable on 99% of the world’s merchant fleet and maritime areas. Pakistan is party to all important codes and conventions pertinent to maritime sector. Details are:

⁶³ Ibid.

S No	International Regulatory Frameworks	Area
1	United Nations Convention on the Law of the Sea (UNCLOS)	Rights and responsibilities of states for utilization of Oceans & Seas
2	International Convention on Standards of Training, Certification and Watch-keeping for Seafarers (STCW), Maritime Labour Convention (MLC) and SOLAS	Training of seafarers, Maritime Labour Rights and Safety of life at sea
3	Basel Convention	Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal
4	MARPOL	International Convention for the Prevention of Pollution From Ships Operation (Deal with discharge of pollution)
5	Biodiversity Convention-1992	Deals with the protection and conservation of marine resources

In Pakistan, formulation of compliance framework for the implementation of these international regulations and national jurisdiction is one of the weak areas that need attention.

c. Need for integrated National Maritime Policy

In Pakistan, we tend to view the maritime sector as sea transport or ports. This mind-set has contributed to a lack of understating of the issues and economically sound maritime policies. In year 2002 the first National Maritime Policy was adopted. However, with the changing global scenario, it requires to be updated. Work has already commenced on revision of the national maritime policy and strategy for the entire maritime sector. The revision sets out guidelines for overarching vision and directs stakeholders towards an integrated approach to maritime affairs at the national level. In line with the 18th amendment, the national maritime strategy will allow provinces to establish their own policies under an integrated structure to promote sustainable maritime development.

The Way Forward

After an overview, description of the various components of maritime sector of Pakistan, and the issues highlighted, some of the recommendations are:

- Implementation of comprehensive maritime policy and strategy
- Increasing the awareness and knowledge among the decision-makers as well as the general public.
- Capacity building through public-private partnerships.
- Rational financial support through the activities and smart banking polices for loans (particularly in Aquaculture and fisheries sector)

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- Development of effective national compliance mechanism for implementation of international regulation/conventions.
- Stimulating renewal of potential maritime sectors through regional and international collaboration.
- **Port Infrastructure:** The efficiency of Pakistani ports should be enhanced by improving the network of rail and road infrastructure.
- **Marine Pollution:** For the protection of fish resources and coastal installations, Provincial Governments should take all necessary steps to address marine pollution on war footing.
- **Fisheries:** The provincial governments must ban all illegal fishing nets and methods. At the same time better preservation techniques onboard fishing vessels as well as inside fisheries can increase the value of the sea food.
- **Seafaring:** Government of Pakistan needs to pursue inter-ministerial and inter- governmental options for the employment opportunities for the seafarer community.
- **Maritime Affairs:** Role of National Co-ordination bodies (National Maritime Affairs Coordination Committee and Joint Maritime Informational Coordination Centre)⁶⁴ should be augmented.

To conclude, it may be asserted that God has created Pakistan as a maritime country. The largest city and economic hub of the state “Karachi” is situated on the coast. Pakistan has a rich but untapped maritime potential. Our population growth and the global trends demand that we turn from a brown economy to “Blue Economy”. This vision demands both expertise and credibility. Impediments are many but our coordinated and concerted efforts can surmount them.

⁶⁴ National Maritime Affairs Coordination Committee (NMACC) was constituted in 1986 for the consideration of maritime related issues, while the Joint Maritime Information & Co-ordination Centre (JMICC) was established by Pakistan Navy, in Feb. 2013, as Interagency Coordination Body. All national and provincial maritime stakeholders are members of JMICC.

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