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Marine Life & Fish Management an Effective Tool of Blue Economy of Pakistan

Prof. Dr. Sajid Mehmood Shahzad

Abstract

Currently, all fishery-related operations in Pakistan are handled by four major fish harbors: Karachi Fish Harbor, Korangi Fish Harbor, Pasni Fish Harbor, and Gwadar Fish Harbor. Pakistan's fishing communities are not only home to generations of people who have relied on the industry to make a living, but also to a wealth of natural beauty. However, with a growing population comes a rise in demand, and as supplies dwindle, so does the world's ability to feed its people. It's a similar story in marine fisheries, where declining interest from local and foreign corporations and the use of antiquated methods of fishing have made it difficult for fishermen to earn a livable wage.



Introduction

Fisheries areas of Pakistan possess scenic charm, attraction, and beauty, as well as a decent living for the fishermen families who have been associated with this profession for centuries. However, as the population is rapidly growing, so as the needs of the people, resources are being depleted fast, inadvertently threatening global food security. The same can be seen in marine fisheries, where scarcity of resources, conventional means of fishing, slow modernizations of this domain, and falling investment interest of domestic and international companies in this sector, are making a decent living for fishermen a tough job. That said, better management can help the communities to rebuild their livelihood by becoming an effective part of the fishery sector. However, before developing plans for the fish harbor to house tourist attractions as well, potential areas should be identified first. The plan to link a fisheries-specific area to direct and indirect stakeholders can be understood from the following figure.

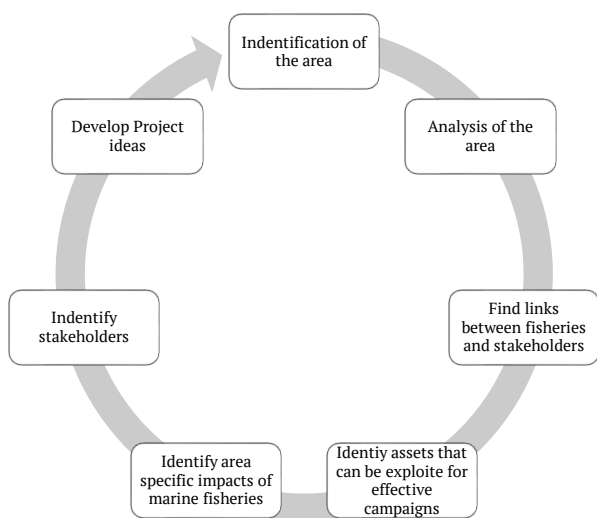


Figure 1: Tasks for effective planning to develop fish harbors

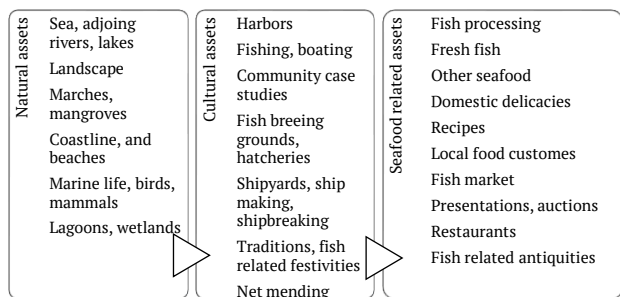


Figure 2: Asset identification

Assets, in the context of domestic marine fisheries, and stakeholders would be mainly of three types.

1. Natural assets
2. Cultural assets
3. Seafood related assets

These assets can be identified from the figure 2.

Insight

Karachi Fish Harbor

Karachi Fisheries Harbor (KFH) is located on the western side of the Karachi Port. It was constructed by the federal government of Pakistan in 1959. Until 1972, the matter of fisheries was under the control and handled by the federal government, which later became a subject of the provincial governments of Sindh and Balochistan in 1973. Under obligation towards the Constitution of Pakistan 1973, the federal government handed over the KFH to the government of Sindh in 1974.

The KFH kept on facilitating fishers as the main harbor of the Sindh Coast until the provincial government felt a need to rehabilitate the harbor. It was 1988 when the renovation and expansion of the harbor began with a cost of 12 million Euro Currency Unit (ECU). The rehabilitation project of the Karachi Fish Harbor took four years and was concluded in 1992.

Karachi Fisheries Harbor Authority

The KFH is under the managerial control of the Karachi Fisheries Harbor Authority (KFHA). The KFHA was constituted in 1984 under the KFHA Ordinance 1984 as a precondition of the European Community to receive funds and grants. However, a need to constitute the authority had already been felt by the provincial government as they intended to manage the harbor and its components in a better way. For the KFHA, there were several tasks ahead as the scale of its operations and managerial authority was vast. From controlling the preexisting land and acquiring further space for the harbor, the KFHA is responsible to undertake/ for undertaking operational decisions. Planning, rehabilitation, renovation, new facilities construction, provision of fishery-related facilities such as navigation and jetties, standardization of fish and related items, maintaining standards of safety, and handling the matters of fishers, all come under the functional authority of KFHA. "Focusing on the latest development in / at the global, regional and local level in the fishing industries/ industry, KFHA has revitalized its working strategy with a professional approach based on fisheries management, quality development, and safe food" [1].

Korangi Fish Harbor

During the late 1970s, it was felt that the Karachi Fish Harbor (KFH) was growing congested, and to divert traffic, accommodate more fishermen, large vessels, and increase deep-sea fishing, a supporting system should be given to KFH. Consequently, the work started from conducting a feasibility study by M/s nor consult with

the help of the Asian Development Bank, which approved the very project in August 1978. It was the second project for the development of fisheries in the Islamic Republic of Pakistan. Within a year, a complete feasibility report was made ready by nor consult which was tabled in late 1979, and a loan of US \$ 25.338 to construct Korangi Fish Harbor (KoFH) was released by ADB in December of the following year.

Main objectives behind the KoFH construction	
I.	Remove congestion at KFH
II.	Accommodate large-sized vessels for deep-sea fishing
III.	Increase foreign exchange earnings
IV.	Exploit untapped and untouched resources of fisheries at sea

Table 1: Main objectives behind the KoFH construction

Korangi Fisheries Harbor Authority

The Korangi Fish Harbor Authority (KoFHA), to invigilate and manage the KoFH activities and operations, was constituted in 1982, under section 4 of the 'Korangi Fisheries Harbor Ordinance 1982'. The KoFHA became functional in 1983. It is an autonomous body functioning under the administrative control of the Ministry of Maritime Affairs, GOP, while the managerial control of KoFHA is vested in a Board that may exercise its powers under section 6 of the KoFHA 1982. The Board is comprised of 11 members, headed by a chairman appointed by the Federal Government of Pakistan. The Board has recently been reconstituted after a long delay of almost five years as the term of the previous board was ended on February 28, 2015.

Achievements

Revenge generation and port operations: The Authority has so far earned a revenue of USD 3.825 million as on 30 June 2011, since the commencement of the operation in November 1996. The income from various sources has significantly increased during the past three years. Under a recent campaign, 75 boats from the nearby vicinity have been shifted and these boats are landing catch at Korangi Harbor.

The Deep-Sea Fishing Policy of 1995, as amended in 2001, has been rationalized and made investment friendly with a mandatory requirement to offload fish catch at Korangi Fish Harbor. Recently, based on the recommendations of the inter-Ministerial Scrutiny committee, 24 Nos. provisional licenses have been granted. It is expected that soon the deep-sea vessels will start operation, thereby giving significant rise to the income of the Authority.

Establishment of fisheries allied industries: An area of 100,000 sq. miles has been developed for the private sector for the establishment of fisheries allied industries viz; fish/shrimp processing plants, cold storages, ice factories, fish de-hydration/oil extraction plants, fish canning plants, boat building/repair facilities at the harbor. Since the development of industrial area and commencement of operational activities, the Authority

is actively persuading private entrepreneurs for the establishment of fish processing and allied industries at the harbor. The first advertisement in the press inviting the private entrepreneurs for the establishment of fisheries allied industries at the harbor was released in December 1993. Due to lack of response from private sector, the invitation was published in press time and again with softer terms & conditions. Unfortunately, the response of the private entrepreneurs remained poor.

One of the industrial units at the Harbor has been finally connected with 3.0 MW power system on 14 June 2012. Considering the sensitive nature of the fish processing industries at the harbor dealing in the highly perishable commodity, the KESC has been requested that the electric supply to Korangi Fish Harbor may be kept outside the ambit of load shedding. The first meeting of the KoFHA Board of Director recently re-contoured as per Notification No. 2 (15)/2002-Fish P & S-KoFHA, dated 17 March 2012, was held on 14 June 2012 at Korangi Fish Harbor.

EU Fish Export Ban

EU lifted six-year ban on export: On 12 March 2013, EU ended its six years' ban on export of fish and shrimp items. Initially, two companies – M/s A G Fisheries (PVT.) Ltd. And M/s Akhlak Enterprises (Pvt.) Ltd. Have been approved to EU standards. A further seven companies are expected to be approved soon.

Issues

Only few fishery harbors of the world are commercially viable. In comparison with other investment projects, an investment in a fishery harbor is characterized by:

- Long physical duration and high initial costs
- Annual and seasonal variation in fish catch
- Handling of high perishable
- Many primary beneficiaries (fishermen) who are often economically weak and with low receptivity for changes and innovations
- Large diffusion of secondary beneficiaries

The characteristics mentioned tend to indicate that fishery harbor projects relate to a high degree of risk and uncertainty. The characteristics also explain why fishery harbor projects in general difficulties have in attracting private funds and why there are few fishery harbors along the 1100 Kms. Long coast, and those built are yet to gain the design capacity. Korangi Harbor, with exception to Pasni and Gwadar harbors that were constructed in the same period, has reached take off position due to recent establishment of fish processing plants. Nonetheless, the full-scale operation of Korangi Fish Harbor is subject to the following:

- Operation of deep-sea fishing vessels

- Adequate seafood processing plants
- EU corridor for export through Vendor Assurance system (VAS)
- Additional and improved harbor facilities
- State-of-the-art auction hall/chill room
- Repair jetty/slipway
- Fish/port handling equipment
- Peeling sheds, sewerage system
- Provision of business support services

The way forward

Under the present circumstances, it is considered necessary that Korangi Fish Harbor May be developed/improved exclusively for export of value-added fish products to EU and other countries and promoted as Business Park for the establishment of a cluster of modern fish processing plant of value-added products. This would allow the country to fill the gaps in the supply chain and thus enhance direly needed foreign exchange earnings.

Strategies for a Viable Operation

The United National Industrial Development Organization (UNIDO) is providing technical assistance under TRTA-II for developing business plant to promote Korangi Fish Harbor as a landing facility for the operation of local boast and Business Park for the establishment of Fish processing Factories for value added products.

Pasni Fish Harbor

In 1981, a feasibility study for the construction of Pasni Fish Harbor was carried out by a Swedish Firm M/s Scandia consultant. After Two years, the government of Balochistan signed a loan agreement with the Asian Development Bank. In 1984, the project to design the harbor was initiated, and a London-based firm, M/s PRC Engineering Incorporated, with M/s Engineering Consultants, Karachi was appointed for the task. In 1986, 14 firms offered international bids. However, a year after / later in 1987, M/s Bilfinger and Berger were awarded the task that would cost RS 445 M. In 1989, Pasni Fisheries Harbor was finally inaugurated by the then Prime Minister Benazir Bhutto. The Harbor covers an area of about 100,000 m², which includes an approach channel, harbor basin, and berthing area with the following facilities.

Pasni Fish Harbor Authority

Pasni Fish Harbor Authority (PFHA) looks after all affairs at Pasni Fish Harbor. The primary functions of PFHA are mentioned in table 4.

Siltation and Beach Growth at PFH

Siltation and Beach Growth remains a problem at all harbors and beaches around the world which sometimes

reaches a certain level that affects the harbor operations. A 25-year analysis of Siltation and beach Growth is recorded in the table 5.

Description	Available Facility	Remarks
Berthing Facilities	A Cargo Jetty, Four Landing Berths	Total length 500 Meters
Buildings	Market hall Harbor Authority Building	1300 m ² 800 m ²
Water Supply	Tube well Underground Tank Overhead Tank	16 K.M from Shadi Kaur 120,000 gallons 40,000 gallons
Power Supply	320 kv A Generator Set 100 kv A Generator Set	For round the clock operations
Cargo Handling	A Mobile Crane A Truck Crane	25 tones 4 tones

Table 2: Facilities at Pasni Fish Harbor

Description	Available Facility
Fish Processing Unites	7 Nos
Cold Storages	5 Nos
Ice Plants	13 Nos
Transportation Facilities	All kinds
Boat Building Yards	8 Nos
Work Shops	5 Nos

Table 3: Private Sector Facilities at Pasni Fish Harbor

To look after the overall administration of Harbor
To undertake Harbor operations efficiently
To carryout maintenance of Harbor structures, buildings, installations, and machinery
To ensure that essential facilities are provided to the fishermen
To maintain the desired depth of the Harbor
To ensure safe berthing of vessels

Table 4: Functions of Pasni Fish Harbor Authority

Time (Years)	Beach-Growth at South-Side
5	+107 m
10	+241 m
15	+326 m
20	+403 m
25	+ 474 m

Table 5: Siltation and Beach Growth Analysis

Keeping in view the analysis shown in the table above and to keep the entrance to PFH open, a lengthening of the south Breakwater of 100 to 150 m in an easterly direction was considered.

Gwadar Fish Harbor

Gwadar Fish Harbor (GFH) was constructed in 1992 by BESIX, a Belgian construction, and civil works company. BESIX started its work in 1988 and over 4 years, fish harbor got ready to facilitate thousands of fishers in the area and their families. “For this project, Indus Resources & its associated company Zukas International provided services to BESIX as their major local support & also represented them for their one-year warranty period in Pakistan” [2]. Although the Gwadar district has three other fish harbors, i.e., Peshukan, Surbandar, and Gunz, GFH has a significantly larger potential to harness the untapped wealth of the Arabian Sea which is ten times more productive than the rest of the world and four times than the rest of the Indian Ocean [3]. Popular fish species of the district are cod, tuna, and salmon.

However, shrimps, lobsters, and prawns are also in abundance.

The linkages between fish harbors and coastal societies reflect that both domains can be developed simultaneously. Better fish harbors will give increased possibilities to secure bread and butter to the local community, whereas better management will enhance the capacity of their area as well as add to their yearly income [4]. Besides taking steps to secure better prospects of / for infrastructure development at all fish harbor along Pakistan's coast, it is strongly recommended that tourist facilitation centers must be developed close to these vicinities. Moreover, pontoons and floating restaurants will add value to these sites and catch/attract more tourists who intend to spend time at sea closer to harbors and ports. All fish harbors may also be connected through a dedicated ferry service. It is advisable to test the prospects of launching a modern small cruise ship along Pakistan's coastline. This cruiser can preferably stop by all potential fish harbors and beaches.

Conclusion

Fishing is a vital component of the blue economy. Therefore, to enhance fishing in Pakistan, With the support of relevant stakeholders, it is necessary to form a working committee to prepare recommendations for the government regarding the modernization of existing maritime infrastructure. The committee may also specify, if required, alterations and modifications that must be made to fishing jetties in specific harbors along the Pakistani coastline. Based on the committee's recommendations, the re-designing of obsolete infrastructure or non-operational fishing jetties may be prioritized to make them operational again. In addition to this committee, technical help could be asked for from NIO and HPN to create a future road map for effective management, make business plans, and make suggestions for changing the deep-sea fishing policy from 1995 and Pakistan's maritime policy from 2002. Due to new developments at the port of Gwadar, special attention must be paid to the development of fisheries along the coast of Balochistan.

With the assistance of Chinese authorities, it will be necessary to develop a comprehensive master plan for the reorganization of the current fishery setup and for the development of landing sites, jetties, and ports along the coast of Balochistan. The societies of Karachi Fish Harbour, Korangi Fish Harbour, and Keti Bandar Baba Island are marginally superior to those of Balochistan. On these sites, there are numerous opportunities for the development of fisheries, fishermen's communities, boat construction, training institutions, and research centers. Subsequently, highly trained labor can be supplied to both of Pakistan's coastal provinces, from Sir Creek in Sindh to Gwadar in Balochistan. A grand fishing strategy must be developed with the assistance of relevant stakeholders. The strategy in question must include suggestions for improving maritime infrastructure and the well-being of fishermen.

Competing Interest

The author declare that there is no conflict of interest.

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