



**UNITED NATION INDUSTRIAL DEVELOPMENT
ORGANISATION**

**TRADE RELATED TECHNICAL ASSISTANCE (TRTA II)
PROGRAMME**

Final Report

**Enterprises Based Fisheries Sector Study
and Strategic Plan for Interventions
at
Enterprise's Level to Enhance Quality
production**

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List of abbreviations

- BFD Department of Fisheries, Balochistan
- FAO Food and Agriculture Organization of the United Nation
- FCS Fishermen Cooperative Society
- FDB Fisheries Development Board
- GOP Government of Pakistan
- KFH Karachi Fish Harbour
- KFHA Karachi Fish Harbour Authority
- KoFH Korangi Fish Harbour
- KoFHA Korangi Fish Harbour Authority
- MFD Marine Fisheries Department
- MINFA Ministry of Food and Agriculture
- MoLDD Ministry of Livestock and Dairy Development
- PSEA Pakistan Sea food Exporters Association
- SFD Department of Fisheries, Sindh
- SECP Security Exchange Corporation of Pakistan
- TRTA Trade Related Technical Assistance
- UNIDO United Nation Industrial Development Program

1.0 Executive Summary

The Government of Pakistan is strategically focusing at forging a broad-based alliance with the private sector as an instrument for poverty alleviation. And promotion of export constitutes the integral part of this strategy. Export success and the ability to access market place in a vibrant global economy take more than just planning. A holistic approach is required to analyze the sector performance thread bear. Opportunities in export capable sector need a careful evaluation and subsequently assistance from international donor agencies could be rightly fitted in so as to meet the challenges of that sector. A fishery is one of those potential sectors which has been a source of foreign exchange earnings for Pakistan in the past. Its performance however has been overshadowed by 'so called' self imposed ban to EU markets by the government of Pakistan. The reason being non compliance of hygiene, sanitation and phytosanitaion standards required by the consumers in Europe. It was under these conditions that UNIDO stepped in through Trade Related Technical Assistance (TRTA) *interventions which were aimed at re-listing of processing plants for resumption of export of fisheries products to EU.* Compliance in Fisheries sector and in doing so the institutional capacity of Marine Fisheries Department (MFD) was enhanced for resource management, inspection and certification of exports for compliance with international requirements. The MFD acts as the EU designated Competent Authority (CA) in Pakistan. Private sector also enjoyed share from this program, particularly the fish processing industry. The UNIDO's support, under TRTA I, to fisheries program of Pakistan included;

- A comprehensive Inspection Manual in accordance with international practice for purposes and use of MFD as CA and upgrading and accreditation of their microbiology and chemical testing laboratories by providing technical advisory services and provision of equipment, training and participation in PT schemes.
- Trainings in Standard Operating Procedures (SOPs), Good Manufacturing Practices (GMP), Good Hygienic Practices (GHP) and Hazard Analysis Critical Control Points (HACCP) and Traceability methods to staff of MFD, KFHA, FCS and fish processing plants
- Training of fishermen, boat owners, mole holders and auction hall operators in SOPs (Urdu) and good operational management practices along the entire fisheries chain.
- Technical advice for improvement of fishing boats and landing sites as well as technical advice and designs for up-gradation of

auction halls, K-1 and K-2, operating under Karachi Fisheries Harbor Authority (KFHA)/ Fishermen's Cooperative Society (FCS)

- Expert guidance in application of SOPs and Traceability methods along the fisheries supply chain to ensure good hygiene practices in handling of fisheries products and traceability from fishing at sea to processing for export as well as expert guidance in development of HACCP Plans for fish processing plants and application of HACCP practices by processors. Studies on value chain analysis and SPS mapping in the fisheries sector were also undertaken.
- Provision of hand-held PC compatible traceability instruments to fish processing plants to record traceability of fisheries products processed for export.

After successful completion of TRTA program, the UNIDO has embarked upon TRTA II program aiming at a more focused approach towards addressing stakeholders need based interventions which are envisaged to have a long lasting impact on building capacity to further realize the export potential in various sector particularly fisheries sector of Pakistan .

Trade Related Technical Assistance (TRTA II) is a follow up program Programme which is financed by European Commission at a cost of € 9,545,000 this program will be implemented in a joint management mode with UNIDO under the overall guidance of the EC Delegation to Pakistan. Monitoring, evaluation and audits will be implemented in centralized management mode by the EC Delegation to Pakistan.

The three components of TRTA II programme are:

- Component 1: Trade policy capacity building
- Component 2: Export development through improvement of quality infrastructure
- Component 3: Strengthening of intellectual property rights

Implementation of all these three components would require strong inter-agency relationships with government owned or managed counterpart entities and it will also need full cooperation from the enterprise .

1.0 Introduction

2.1 Scope & Objectives

The scope of the present study is to benchmark the progress made by the fishery industry in Pakistan, and particularly to elucidate the strengths and weak areas of fish processing industry which is the major player in exporting fish to global markets. The intent was also to assess the current performance of fishery industry in selected areas such as technological advancements it has made, compliance at industry level, industrial competitiveness and prospects of value addition. Based on these assessments the objective of the study is to prioritize the needs of the industry for subsequent support and rational technical assistance through interventions in value chain. The supply chain is also important as there are indications of overharvesting and resulting possible short supply of raw material. So the study attempts to take a holistic analytical approach yet in a way that the core issues such as gaps in technology, compliance, infrastructure and competitiveness are covered so that it is logically possible to prioritize the perceived needs of the enterprises which could be fulfilled through inputs from TRTA II in a rational but visible manner. The TRTA II envisages indicating micro-economic “drivers” for success which are necessary for competitiveness, job and wealth creation resulting in poverty alleviation through job creation, particularly for youth.

This report also attempts to outline a framework of cooperation between TRTA II and counterpart stakeholders in fish enterprises after carefully conducting a detailed stakeholder analysis and their capacity survey. Based on two way dialogue a list of possible TRTA interventions has been given to support the industry so as to provide an enabling environment for the fish enterprises for fair play

2.2 Methodology

Pakistan fishery sector consists of an array of multiple stakeholders with different and diverse interests with bare minimum integration in between which has created an environment where dearth of cooperation prevails among institutions responsible for research, management, policy devising and enforcement bodies and the private sector stakeholders to the extent that departmental barriers have been created that not only besets an effective information exchange within these groups of organizations and the key players in the industry itself but also sometimes lead to mistrust and creation of non

conducive conditions , which at times has proven harmful for the industrial development as such. Nevertheless, one common element among all these stakeholders is that all most all of these have inadequate capacity building and financial, technical and skilled human resources to effectively administer their individual functions, particularly, so that market opportunities for export as well as domestic markets could have been realized to its potentials. Further there is no much dialogue between the policy makers, law regulators, and developers in public sector, market intermediaries, and the representatives of the enterprise such as fish processors. May be, this is also one of the reasons for overlaps in the functions the market forces perform.

Given this situation, persuasion of any rational developmental program which aims at targeting activities involving different stakeholders needs careful assessment of current enterprise profile, evaluation of opportunities, existing capacities to administer various functions/tasks of the institutions as well as those of the private sector entrepreneurs. And if at all a sustainable sectoral development in the sector has to be achieved the key role of these stakeholders will have to be realized. Recognising the importance of institutions as well as enterprises itself , one of the intent under TRTA II Program is to categorically assess the functions and state of affair of the fish processing particularly in the perspective of fish exports and based on which various intervention options could be weighted for rational technical assistance . Given this context, the TRTA II is a support programme developed in coordination with the government of Pakistan, so several Stakeholders have been identified as key counterparts for the successful implementation of the TRTA II programme. In developing the stakeholder analysis, studies were designed to analyze various types of stakeholders depending on their identified levels of interest and impact on the programme. Two separate reports will be emerging out of these studies, one pertaining to fisheries institutions and the other pertaining to fish export oriented enterprises. This particular report addresses the fishery enterprises. The method adopted for assessing the needs and writing this analytical report was though a developed set of pre tested questionnaire for which a detailed response was obtained using interview /meeting method both at head of the organization(solitary) level or group discussion with their designates assisted through their follow through . Besides this primary data collected through questionnaire/interview, some secondary data was also used in compiling this report.

3.0 Sustainable Economic Growth And Export Competitiveness

3.1 Present Situation of the relevant sector industry

According to an estimate, Pakistan has a fish and seafood industry worth \$1.2 billion. Exports alone are worth nearly \$213 million per annum. More than 0.8 million people rely directly or indirectly on the industry for their livelihood. The seafood industry is under threat from two sides, one is over-fishing, 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 much is going to waste. The sources further said poor quality was injurious to Pakistan's competitiveness in the world markets, since the standards demanded by the importing countries (notably EU and US) were not being maintained on vessels, at landing sites and auctions and in the processing units.

Expanded national jurisdiction for resource management Pakistan is one of the beneficiary coastal states of the most important international initiative contributing to the transition of the fisheries sector worldwide by adoption in 1982 of the United Nations Convention on the Law of the Sea (UNCLOS) granting the legal rights to regulate and manage fish resources up to 200 nautical miles from the coast. This extension of jurisdiction has redistributed fisheries resources away from distant industrialized fishing states to the coastal states, enabling them to extract benefits from developed nations through license fees and joint ventures and it also encouraged the development of the coastal states' own industrial fishing fleets, thereby increasing the contribution to the country's economic, social, and nutritional objectives. Second, it allowed coastal states to exercise greater management control over their fishery resources. Ironically Pakistan is one of those few countries which have yet to develop the capacity and knowledge to manage the fishery resources sustainability. If we would have realized this potential, a clear outcome would have been that structural changes in the fishing particularly in the processing industry would have taken place which potentially could have changed the complexion of the fisheries in Pakistan altogether not only by transfer of boat titles; investments in new boats; but above all it would have tremendously increased the supply chain. A crash plan is needed consisting of changes in the overall management structure of the KFHA; physical activities including funding for infrastructure and equipment to improve the quality and value of fish in the cold chain, and value adding by processors; rationally bringing the KoFH in operation; investing in constructing new landing jetties and allied infrastructure along with strict compliance; steps towards lifting of EU ban on fish export. Purpose of all such steps should be focused towards

increasing the value of the existing fishing from the marine fishery of Pakistan and improving the overall quality of life of the poor fishermen and his dependents.

3.2 Important Areas of Compliance

The focus of this section of the report is on Pakistani sanitary and phytosanitary (SPS) issues that limit exports and the identification of technical assistance actions which would help remove these constraints, taking into account ongoing or planned assistance where appropriate. The analysis contained in this report was obtained through interviews and questionnaires submitted to government officials, as well as discussions with private sector representatives, donors and nongovernmental organizations. A compilation of responses received from the Government officials and from private sector representatives, was organized in such a way to differentiate clearly between priority export markets and barriers restricting trade. This situation however represents the post development scenario after receiving technical assistance provided to both private as well as government sector under TRTA I and other governmental support from its own financial resources.

Coping with SPS issues will have a significant and measurable impact on fish export from Pakistan and precisely there are three broad categories which need to be redressed and these areas are; organizational challenges, institutional capacity, and particular needs to improve access for specific products. These issues are briefly discussed below in the perspective of required corrective actions;

3.2.1 Challenges to the Seafood Exporting Enterprises

Pakistan has enjoyed strong export performance in fish products over the past couple of decades. This performance has been aided by natural advantages for production resulting directly from the high fish production capabilities of Arabian Sea , existing void for the fishery products in the international markets , the private sector investment and to some extent their vigorous export-management skills , and government provision and technical support of other international developing agencies . However, further rational organizational changes can help to continue export expansion for products which are currently competing mainly on the basis of low prices they are offering in the international markets and by taking advantage of trade barriers of concerned importing countries which other competing nations are unable to fulfill so far . The new international fish markets have largely been explored by the industry at

their own /individual level. As alternate export markets are continuously being explored particularly after the self imposed export ban to EU countries imposed by the government of Pakistan, now there is an immense need that the competent government department in conjunction with the Pakistan Seafood Exporters Association Exporters Association should officially initiate contact with the importing government to discuss establishing terms of access. However in this process it is essential to know that the list of markets and countries is much longer than the resources available for export. Prioritization, which currently occurs on an ad hoc basis, should be systematized and resources focused on markets that will generate the largest returns to the country. The essential ingredient of sustainable future supplies in the international market, (new or EU) will be that how much the private and public sector is conscious about compliance.

Adoption of a rational strategy considering following lie of action can help improve the compliance issues in Pakistan's fishery export sector.

3.2.1.1 Rational Investment

Pakistan has substantially upgraded its SPS capacity over the past few years , in particular for facilities. However, further investment in facilities, training and operating expenditures would help the Government of Pakistan maintain and improve the SPS status in Pakistan and address the SPS requests of its trading partners.

3.2.1.2 Organizational Challenges due to Structure

SPS related authorities are divided across several government agencies, including the Ministry of Agriculture, the Ministry of Livestock and Dairy Development at the Federal level and provincial fisheries departments of Sindh and Balochistan at provincial level. Other agencies are involved with trade-related aspects of SPS issues as well. In order to manage the complexities of addressing import requirements of trading partners, the present organizational structure of the government, particularly within and in between various ministries need to be evaluated and may be back mergence of the two federal ministries of MINFA and MoLDD , would help to improve efficiency in expanding market access opportunities. Likewise the efficiency of Fisheries departments in Sindh and Balochistan can be bifurcated into two ministries each with a clear mandate fore focused approach in fisheries development.

3.2.1.3 Institutional Capacity

Pakistan needs more assistance to strengthen SPS regulatory systems, in particular to provide or strengthen the institutional capacity to support exports. These needs include quarantine, eradication, surveillance, diagnostics (including laboratory infrastructure and training), and risk analysis. Another particular area of concern is the national ability to stay up to date with the

import requirements of importing countries. These capacities are needed to help reduce the threat of pest and disease establishment in the country and to provide the government with the capacity to manage pests and diseases to address requirements of importing countries, and to enable CA /other authorities to engage with their counterparts in negotiations over market access issues.

3.2.1.4 Quarantine

Quarantine inspection and remediation is necessary to protect producing areas from pest and disease establishment. While there is a quarantine system in place, but it is poorly functioning; additional human resources clear vision and SOP's are needed so that they can be effectively functional. This includes training of current personnel and financing for additional employees.

3.2.1.5 Surveillance

Monitoring and control of production , particularly if the wild shrimp exports are to be supplemented from aquaculture outputs , to guard against pests and diseases is needed to protect production and to qualify for export, by maintaining pest- or disease-free status or by reducing pests of concern in traded products. In addition, plant inspection and product testing are needed to ensure sanitary standards are met. Currently country lacks resources to adequately maintain surveillance in many cases. More /advanced and updated training of processing plants in HACCP; assistance with achieving equivalence in standards and; assisting particular plants with pre-audit training can help raise performance of the food safety system. All these trainings can be an integral part of TRTA II.

3.2.1.6 Analytical Capabilities

In a number of areas additional training is needed to allow officials to perform inspection (particularly in Balochistan) and quality related services, specially related to residue testing and basic analytical work. . In long term, training, and funds for staff retention should have a priority of the government policy over additional equipment. In addition, assistance in establishing a branch laboratory of MFD in Balochistan should be provided under TRTA II and this laboratory should also be certified under ISO standards. MFD , the CA , may consider delegating powers to the Balochistan Fisheries Department for the operation of this laboratory as a sub branch of Karachi main Laboratory but still reaming under the overall supervision of CA.

3.3 Human Resource Development / Institutional Capacity Building

Human resource is single most critical area of concern in the fisheries sector of Pakistan. This dearth of manpower is evident in at almost all levels of management at institute level and the situation is rather more alarming in the industries, The worst part of the scenario is that there is almost no research system either at the institutional level or at the enterprise level. This deficiency in research system reflects the level of low priority which has been given to the sector in the past. A viable Research system is considered as the back bone of a developing industry which supplies continuous support to the sector by providing information's on new products, marketing strategies, biological profiles / basis for fisheries. Conflict resolutions and research based policy interventions. It is amazing how the whole system could not realize the need for research in this sector and so failed criminally to develop the sector and its outlook on viable scientific lines. The role of academia in this regard is also very poor. None of the universities in the country thought to develop curricula to support the fisheries sector and its allied industrial development. . Due to all this there has never been a rational planning on the today and future needs of manpower in the country to cater to the need of fisheries in the country. There has been a totally inconsistent and irrational approach of availing foreign scholarships at the institutional level in at the GOP level ; Most of the scholarships for short term / long term training offered by friendly countries or international development agencies have either been wasted (as the bureaucratic channel is, impermeable and the time line required for the cases to mature at the Ministry level at devastatingly snail pace with a a number of bottlenecks .) or been offered to irrelevant persons leaving the sector hostage to the system . . Even Departments of Fisheries, themselves have hardly developed any plan for HR development. One recent example of its own kind is that a series of officers (Almost 9 officers) in BFD, refused to go for an intensive scholarly training program abroad, offered specifically by the host country for their professional development, on personal grounds. This also indicates a prevailing lack of motivation and drive in the fisheries professionals in the country. There is need to comprehensively look into the manpower requirements in the country , along with creation of matching opportunities for them and on top adoption of visible measures for providing a congenial working environment to the professional in fisheries where there are opportunities for them to excel in career on merit and merit alone . Unless done on these lines, all measures/ plan and actions related to HR development for both fisheries institutions and industry will prove ad hoc. A dire need, at this point in time is to

immediately intervene and create, functional and purpose-built research institutions and for which a solid visionary strategic planning is required.

3.4 Investment Climate

Micro-level investigations show that improvements in the investment environment matter for firm-level productivity growth and investment activity; and this holds true for fisheries industrial sector as well. Such factor productivity growth would result from more efficient use of resources, technological progress and technology diffusion, learning-by-doing, and improved management of production activities. Improvements in investment environment brought about by structural reforms and sustained macroeconomic stability could induce such positive developments. Dollar et al , (2005) in their findings based on survey data collected from a large number of firms operating in the same sector in Bangladesh, China, India, and Pakistan indicated that improvements in various aspects of the investment climate(Represented by a number of indicators, including: power outages, days required to get a phone line, days required to clear imports and exports through customs, access to financing, unofficial payments, and management time dealing with regulations) would lead to significantly high Textile Firm Productivity (TFP) growth. Thus, if the quality of the investment environment in Pakistan were to match China's (Shanghai's to be specific), then the productivity of Pakistan's textile firms (operating in Karachi) on average would improve by 81 percent; the rate of return to capital, by 36 percent; and wages would rise by 23 percent. Increased profitability in turn would encourage more investment, leading to faster capital accumulation .Though such studies have not been done specifically for fish processing industry but most of the indicators given above implies to the situation in fisheries processing sector prevalent in Pakistan.

Overall, Pakistan has a liberal foreign investment policy in the South Asia region. New incentives and further liberalization measures, particularly, for foreign investment includes Reduction in minimum foreign equity from US\$ 0.5 million to US\$ 0.3 million. The other incentives include ;

- Remittance of royalty, technology and franchise fee allowed to projects in social, service, infrastructure, agriculture (including fisheries) and international chains food franchise.
- Zero import duties on capital goods, plant and machinery (not manufactured locally) and equipment as well as on raw materials used in the production of exports.

- Enhanced FYA from 50% to 75% of PME for infrastructure and agriculture projects.

Some of the other reasons which, if projected/advertised properly, have the potential to provide impetus for foreign investment in Pakistan's fishery sector and these include;

- **Abundant Land and Natural Resources for wild Fish and aquaculture production**
- **Cost** -effective managers and technical/non technical workers
- **Large and Growing Domestic Market comprising of 160 million consumers with growing incomes and a growing middle-class moving to sophisticated consumption habits**
- **Strategic Location as a Regional Hub** (principal gateway to the Central Asia Republics; strong and long-standing links with the Middle East and South Asia and Comprehensive duty-free facilities for investors)

Pakistan has a liberal investment policy in the South Asia region. New incentives and further liberalization measures, particularly, for foreign investment includes

- Reduction in minimum foreign equity from US\$ 0.5 million to US\$ 0.3 million.
- Remittance of royalty, technology and franchise fee allowed to projects in social, service, infrastructure, agriculture and international chains food franchise.
- Zero import duties on capital goods, plant and machinery and equipment not manufactured locally as well as on raw materials used in the production of exports. CBR can supply a list of locally manufactured good. In case of doubt the investor is invited to consult the BOI.
- Enhanced FYA from 50% to 75% of PME for infrastructure and agriculture projects.

3.4.1. Some New Vistas for investment in Fisheries sector

During current studies , situation analysis of the growth in the fish processing sector in Balochistan was carried out and it was found that during the past several years there has been an increasing tendency of investing into new/branch of fish/shrimp/lobster/ cuttle fish processing plants in Balochistan. In last three years alone the number of processing plants in Balochistan has

increased from 10 to around 39. This has been more so to cater to the needs of new markets found in Far East, Middle East and Africa particularly after the Pakistani processors ambitiously hunted for alternate markets in global arena after the fish processing industry of Pakistan has to face an export ban on their products for EU markets. The global demand of fishery products are increasing and new markets are emerging; several new fishery products from Pakistan are receiving good response so one can also see a slowly shift in the complexion of the fishery export.

Some markets seem to have tremendous absorption capacity for Pakistani Fishery products such as Iran. The lack of legal border trade between Pakistan and Iran at Jewani Border in Gawadar District of Balochistan has led to growing illegal export of fish to Iran in massive amounts both through land and sea ways. Though, perhaps, this makes no difference to local fishermen and the processors in terms of income but the whole exercise is going unnoted/unrecorded and unlawful according to current law of the land which does not permit direct exports from Balochistan, it can be firmed that a shift in federal policy towards allowing fish exports directly from Balochistan will provide impetus for more investment in fish processing and off course pave way for new companies to invest in value added sectors as well as the current studies shows. Already provision of a fair play ground, ensured services and facilitation has brought new investment in Korangi Fish Harbor(KoFH) and the creation of four new processing plants of which at least two are directly going for value added products is a good example of what this sector is starving for. If KoFH is revamped and is declared a port under vendor assurance program for EU exports, for which the Port has all the potential, more industrial plots earmarked for value added fish processing plants in the premises of KoFH will be readily used for new factories. Recently one of the leading fish processors of Europe based in Spain has started negotiation with KoFHA to develop a state of the art tuna fish processing plant at Korangi. Their concern is supply side of tuna may be this will potentially prompt some of the vessel owners to convert their vessels into long liners, which will yet be another opportunity for investors to rightfully benefit from the new vistas of the investment.

4.0 THE INDUSTRY

4.1 Overview; Fisheries Industry in the back drop of overall agriculture Sector

Geographically, Pakistan comprises three main regions: the mountainous North, where

three of the world's great mountain ranges (the Hindukush, the Karakorams and the Himalayas) meet; the enormous but sparsely populated plateau of Balochistan in the south-west; and the Punjab and Sindh plains of the Indus River and its main tributaries. Located in south Asia, between 23°42' and 36°55' N and 60°45' and 75°20' E, Pakistan is bordered by India on the east, China on the north-east, Afghanistan on the north-west, Iran to the south-west and the Arabian Sea in the south. Pakistan has a range of ecosystems, from the mountains of the north, to the hot plains of the Indus Valley, and a temperate coastal strip in the south. Rainfall is generally limited, from 130 mm/yr in the northern parts of the lower Indus plains to 890 mm/yr in the Himalayan region. Rains are monsoonal, fall late in summer. The national average rainfall is 760 mm/yr. Pakistan's agriculture is dominated by the Indus River, which flows through the country for 2 500 km from the Himalaya and Karakoram mountain ranges to the Arabian Sea. The Indus and its tributaries support the largest irrigation system in the world which irrigates the great plain of the country. This is the largest network of canal system in the world, serving 1.4 million hectares of cultivated land and feeding the underground *karez* distribution system in Balochistan. The southern part of the Indus plain is sandy. The area to be left of Indus is the main source of water supply to the country. The Indus finally drains into the Arabian Sea in Sindh after forming the massive Indus delta. Agriculture is the hub of Pakistan's economy, which consists of crops and livestock and fisheries. It directly contributes 25 percent to GDP and provides employment to 44 percent of the national labour force. Major crops include wheat, rice, cotton, sugarcane, maize, tobacco, barley and rape-seed. Important fruits are mango, citrus, banana, guava, dates, apple, pear, plum, apricot and peach. Pakistan has not only a high growth rate of population but also faces shortage of protein food for human consumption. Pakistan's fisheries resources have the potential to play a significant role in helping to meet the dietary protein requirements of the country. However, somehow the sector could not get the priority it deserved; as a matter of fact the resources available to its coast were virtually neglected. Since 1950 the government has mobilized 65 per cent of its manpower and 50 per cent of financial resources to develop the agriculture sector. Whereas 0.1 % of manpower and also 0.1 % financial resources have

been utilized to develop the marine fisheries sector in Pakistan. Whereas, all the governments in past have been claiming that their policy objective for developing fisheries is to raise the socio-economic conditions and the nutritional status of the common man. Actually, agriculture dominates Pakistan's economy. More than two-thirds of the country's population lives in rural areas. Most of these people are living in some 45000 villages all along the coast . Pakistan's agricultural economy accounts for one-third of the country's investment. About half the nation's gross domestic product is agribusiness based, from producing farm and forest products to collecting, storing and distributing those products. Cotton, rice, wheat, sugar, edible oils, milk and meat are the principal farm products. Viewed from another perspective people in Pakistan's agriculture economy consume two-thirds of its employment and produce three- fourths of its export. Within agriculture sector, the role of fish in export can be well understood by looking at the disposal pattern of the fish produced; 40% fish is locally consumed; 35 % small non-edible fish is converted into low quality fish meal to supplement the poultry feed; 10 % salted and dried (for export purposes) and 15 % shrimps and the fish are frozen (again for export purposes). In all 25 % of fishery products are exported and the sector contributes 1.1% of the total merchandize export of Pakistan. '

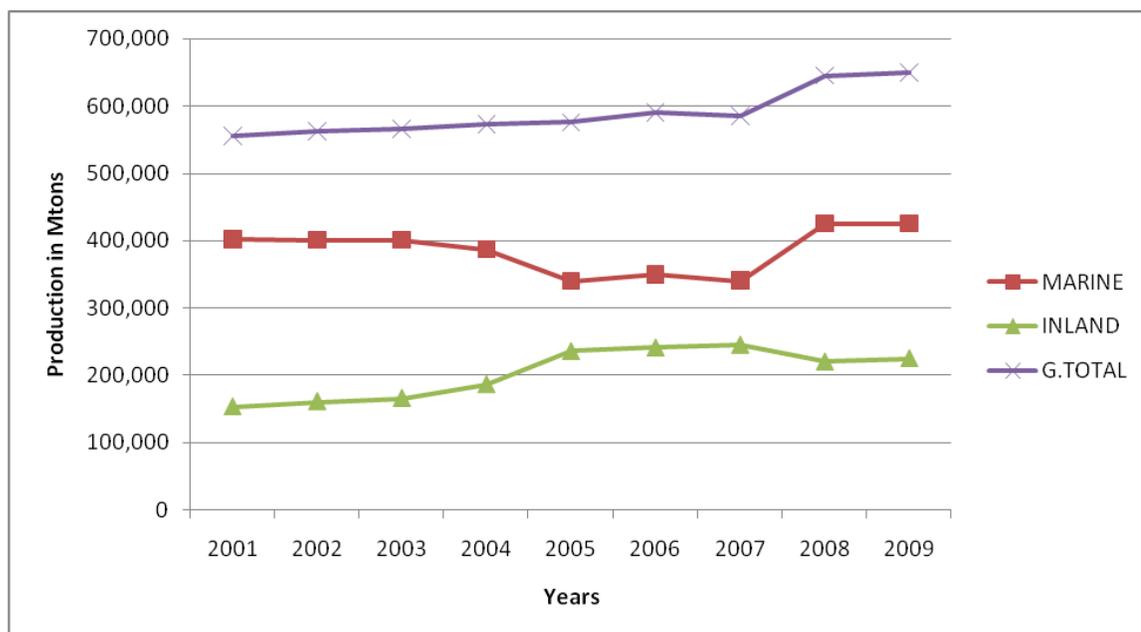
4.2 Contribution to National Economy

Fisheries and allied industrial activities are the most important economic activities along the coast of Sindh and Balochistan supporting livelihood of about 1.0 million fishermen and their families living in rural villages under difficult conditions. Fisheries also is an important sub sector of agriculture in Pakistan and its role in national economy can not be underscored. The sector also contributes towards national food security. The GOP, has been working in past to promote fisheries, both marine and inland, but somehow the sector was unable to receive attention and matching resources thereof from the government side due to which the sector could not be developed on strong footings in Pakistan , Although there has been increasing trend in total fish production (Table 1)

Table 1. FISH PRODUCTION

ITEMS	2005-06	2006-07	2007-08	2008-09	2009-10 (Target)
Marine Fish Production in (in million M.Tons)	0.350	0.385	0.425	0.425	0.430
Inland Fish Production (in million M.Tons)	0.180	0.195	0.220	0.225	0.240
TOTAL (in million M.Tons)	0.530	0.580	0.645	0.650	0.670

Source: Ministry of Livestock and Dairy Development Year Book 20090



About 50 % of the total production is consumed locally, 22% is exported whereas 28% is converted into fish meal for poultry industry. There are 37 fish processing plants in Pakistan with the capacity to process 586 metric tons of fish and shrimp daily. Out of these, 27 plants are involved in production of frozen products, 2 in canning, and 8 for fishmeal processing. The export of sea food products increased from US\$ 213 in year 2007-08 to US\$ 240 in year 2008-09 thus registered a marked increase of 12% in term of values. The data for export of fish and fishery products is as overleaf

Table2. Fish export and revenue earning

ITEMS	2005-06	2006-07	2007-08	2008-09	2009-10 (Target)
Export Earnings (Quantity) (In million Tons)	0.105	0.124	0.135	0.138	0.210
Export Earnings (Value) In million US\$	198	188	213	240	260

SEAFOOD EXPORT FROM PAKISTAN

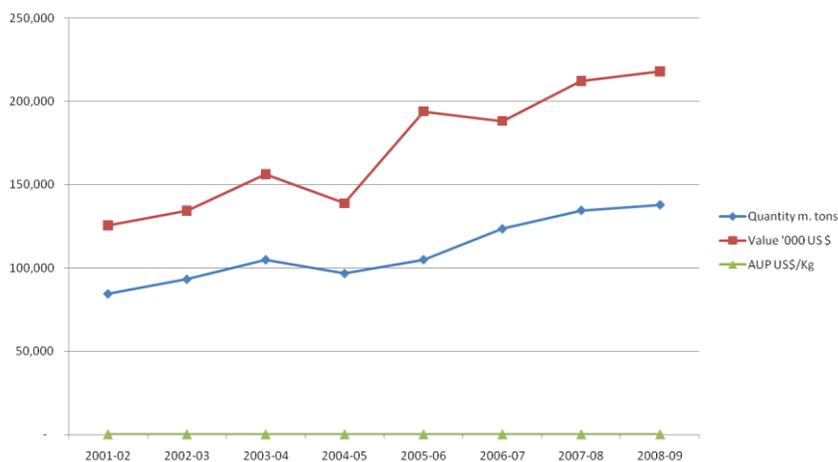


Table 3. Details regarding number of deep sea fishing vessels in operation during last five years

YEAR	ITEM	STREN TRAWLER	TUNA LONG LINERS	TOTAL
2004-05	No. of Vessel	12	11	23
2005-06	No. of Vessel	02	22	24
2006-07	No. of Vessel	0	22	22
2007-08	No. of Vessel	0	5	5
2008-09	No. of Vessel	0	5	5

Table 4. Income from deep sea fishing vessels (in Rs. Million)

YEAR	Fee/Penalties	Royalty	KoFHA Cess	TOTAL
2004-05	19.720	35.160	13.305	68.185
2005-06	9.000	45.540	13.647	67.187
2006-07	2.210	0.350	15.955	18.515
2007-08	5.561	03.100	-	08.661
2008-09	1.100	-	-	01.100

Source: Ministry of MoLDD (annual report 2008-2009)

4.3 Structure and structural reforms in the Industry

Pakistan fisheries has much more to offer to the consumers in both domestic and international market than what it is contributing today. The sector outlook is not that bleak as it looks. Export of fish has traditionally been an area of concern particularly after the imposition of ban after the listing of anomalies in the whole supply chain and compliance by FVO. There is a systematic failure with management system in this regard. The issue was dealt with the TRTA I as well but a lot more has to be done at the agency level in the area of inspection if at all the opportunities are to be tapped on competitive basis. One approach could be to reduce the concentration of fish handling at K2 auction Hall which is now managed by KFHA and used by the FCS as a major stake holder. To deal with problem an option could be to develop jetties and allied infrastructure at few more landing sites such as Baba and Bhit island and a number of places along Balochistan coast such as Pishkan, Shumal/Churbunder, Milan, Kalmat, Kund Malir, Tak/Ball etc. When, if, the infrastructure of these jetties has been built, then a strong need which would arise will be that they should be provided with full inspection protocols and management system to meet compliance issues. The SFD has already submitted a PC1 to consider building three floating jetties at Sindh Coast at Thatta /Badin after site selections based on landing and number of boats operating there. Similar steps are proposed under joint initiatives of IFAD /UNIDO and Italian Debt Swap assistance program to BFD. For competitive export yet another area of importance would be training, with certification, of fishermen in post harvest handling (HACCP /good hygiene practices etc) for keeping quality and reduce losses and of processors for procedures in keeping standards in cool chain maintenances and certification prerequisites. In brief the sector has opportunities and this is a matter of developing vision, and subsequent righteous efforts to achieve targets of

competitive fish and fishery products export through value addition to optimize returns for fishermen and other stakeholders. Such steps will also help domestic consumers in obtaining quality supplement local protein intake. The proposed initiatives under the TRTA II are therefore very much in line with the overall objective of the developmental needs of fisheries exports insofar as the quality issues are concerned along the value chain.

4.3.1 Fish Production and Export Statistics

Fisheries play a significant role in the national economy and towards the food security of the country. It is considered as one of the most important economic activity along the coastline of Sindh and Balochistan supporting livelihood of about 1.0 million fishermen and their families. The policy regarding fisheries and aquaculture development is to increase the contribution of the fisheries and aquaculture sectors to national economic growth, poverty alleviation and food security. The vision of the Government is to promote marine and inland fisheries, with value addition, to optimize returns for fishermen and other stakeholders, realize export potential and supplement local protein intake.

4.3.2 Promotion of Inland Fisheries and Aquaculture

Inland fisheries being a provincial subject are managed by the respective provinces Provincial Fisheries Departments. They are also responsible for promotion and management of fish farming (aquaculture) as well as enhancing fish production through stocking of fish seed in natural as well as in man-made reservoirs, dams and other water bodies.

The aquaculture industry in Pakistan is relatively speaking better developed owing to major Asian Development Bank investment in Aquaculture projects I and II which were implemented during 1980s and 1990s both at the national and provincial levels (Punjab, Sindh and NWFP) which provided impetus in development of fish farming in Pakistan. These projects were aimed at institutional development, establishment of hatcheries, nurseries, trainings centre, human resources development and creating modal farms to promote carp and trout farming in Pakistan. By now more than 60,000 hectares of land have been brought under freshwater aquaculture in Pakistan.

4.4 Value Chain analysis

A Processed Shrimp production is used in this study to draw inference to elucidate constraints to competitiveness in the Fisheries Sector.

A value chain analysis (VCA) from the processed shrimp product is used as an example to show that many identified improvements are too minor to reverse the fortunes of the industry, in the face of high overhead costs and declining fish stocks. The shrimp loses about 48% of its weight during processing (i.e., it takes 1.92 kg of raw shrimp to produce 1kg of processed shrimp; 30% of the weight loss comes from beheading with the remainder 18% from peeling) the yield of processed shrimp will be less than the amount of raw shrimp caught. An analysis by Shahid et al (2007) based on a typical 15 day fishing trip for a 45' diesel powered fishing boat, shows that the catch can be divided into three main components: raw shrimp which accounts for 5% of the catch by weight and has the highest value; edible fish (10%) which fetch, on the average, about 75% of the shrimp price and; the trash fish (85%) which sells at almost 5 % of the shrimp price. This indicates that fisherman make most of their revenue from the non-shrimp component of the catch (even though it is a small amount of total catch). Part of the explanation for the relatively low shrimp (and edible fish) catch rate in Pakistan may be the result of inefficient fishing techniques. The number of fishing boats has been increasing steadily – for example, in 1966 there were only about 400 fishing boats in the Karachi Fish Harbor, and now there are in excess of 13,000. While there is a ban on the catching of juvenile shrimp, locally referred to as PATAS, the estimates suggest that 50 MT/day are caught during August to September (the peak breeding season), and 5 MT/day are caught between October to July. A similar story emerges for the other forms of marine life. Dredging damages the sea bottom and hence the feeding grounds for juvenile fish. Extensive use of small gauge nets further depletes the fish stock. Finally, anecdotal evidence from local fisherman indicates that both the quantity and quality of shrimp and edible fish catch has been declining.

4.4.1 Frozen Shrimp Production and Value Chain

About 98 % of the shrimp is processed as frozen shrimp, therefore, like approach adopted in other VCA analyses, the price and weight of shrimp is measured in terms of the processed output, so as to account for the weight loss during processing. Thus, after adjusting the catch for the weight loss in processing .viz, 48% (i.e., it takes 1.92kg of raw shrimp to produce 1kg of processed shrimp) the yield of processed shrimp will be less than the amount of raw shrimp caught. The costs of catch and haul for shrimp are the total costs for

the trip pro-rated by the share of shrimp in the gross catch, in this case 5%. Analysis of cost incurred can be further broken down as catching shrimp accounts for 90.7% of the cost of the raw materials (shrimp), and the three largest costs of catching the shrimps are diesel fuel (61.7%), repair and maintenance (19.3%), and ice (7.6%) It may be further noted that that the ice is mostly contaminated and of poor quality and hence about 5% of the shrimp catch is wasted before the boat reaches port. A further 10% is lost due to bad fish handling techniques, so resulting in 15% of the shrimp catch being lost at sea. Shahid et al (2007) estimated revenue from trip of a 52' vessel hauling trip costing Rs 388881 and the total profit out of this trip was around Rs 95,047 of which the contribution of shrimp was only Rs 24185. The largest portion of earning came from showing that even the trip was targeted for shrimp catch the maximum profit comes from fish. The share of trash has a n element of consideration, and that is that I apportion of it can be recovered for human consumption.

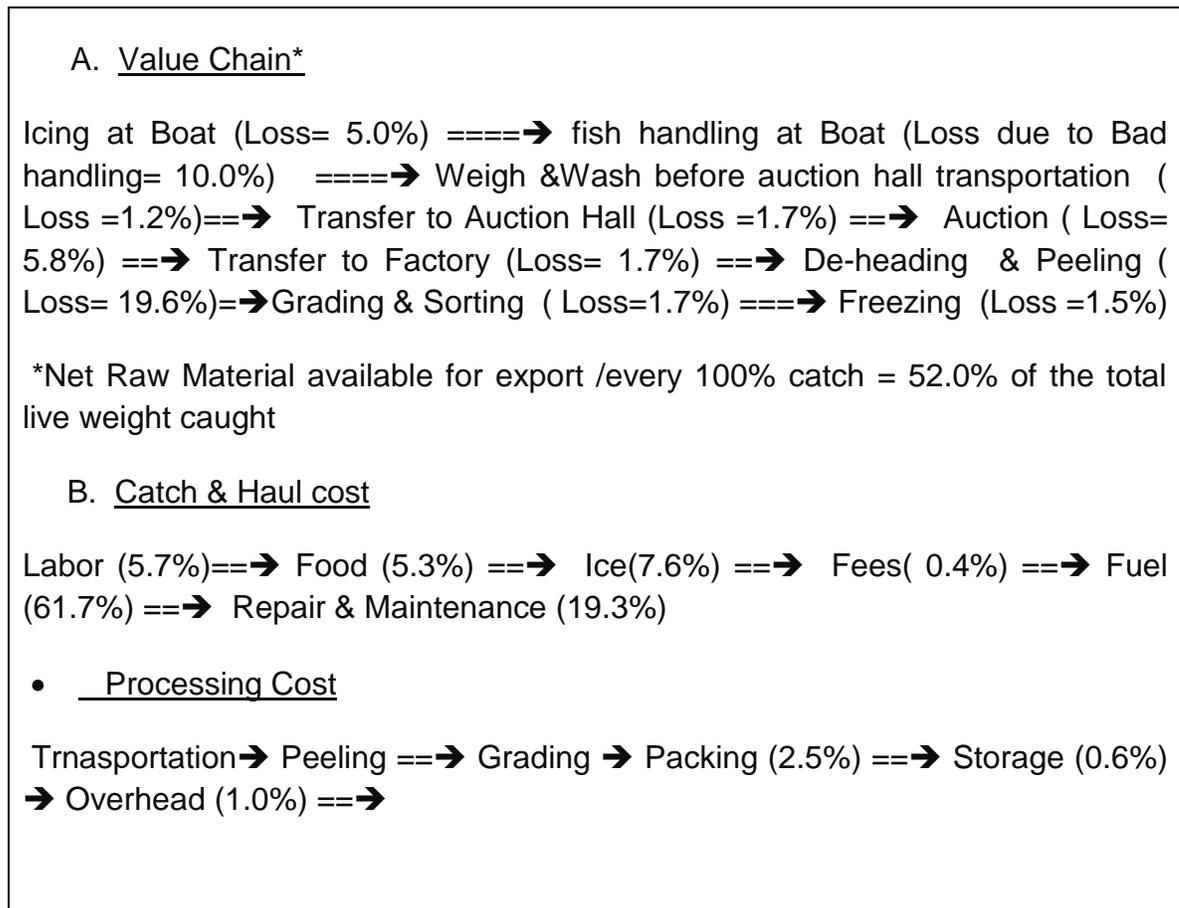
Shrimp Table:	Estimated Revenue from Trip		
	(raw shrimp)	Edible	Trash %
of catch by weight	5.0%	10.0%	85.0%
100%			
Gross weight in kg	271	542	4,607
5,420			
Price (Rs per kg)	137.3	100	6
Gross value (Rs)	37,208	54,200	27,642
119,050			
Wastage rate	35%	20%	0%
Net (of waste)	24,185	43,220	27,642
NetIncomeValue (Rs)			95,047

Note: The above represents raw shrimp. There is a weight loss of about 48% when shrimp are processed. Parameters and values in bold are based on field interviews and used in the study. All other entries are estimates and can be varied for sensitivity analysis.

Exports of shrimp must also meet international Sanitary and Phytosanitation standards (SPS). EU inspectors raised concerns about hygiene in both the fish holds of some boats and the auction hall. The Pakistan Government, instead of facing an externally-imposed ban decided on a voluntary ban on exports. Observers comment that just prohibiting betel chewing (which causes chewers

to spit on the floor where fish are kept) and smoking (where cigarette butts are left on the floor) would significantly reduce the problem.

Figure 1: Value Chain for Frozen Shrimp Production and Processing



Bad fish handling comprises such factors as shrimp lying off the ice, shrimp being crushed by the weight of other fish on top of it, etc.

4.4.2 Vessel to factory and subsequent processing

When the boat reaches Karachi Fish Harbor, the captain contacts the owner and a commission agent (“mole holder”) to arrange for auction space and acquire necessary labor and the trolleys required to offload the catch. The catch is offloaded and weighed before entering auction hall. Prior to the auction, the mole holder, using local workers, sorts and reweighs the catch which may take hours in sun. This, combined with poor handling and hygiene in the auction hall,

results in a loss of 8% of the original catch. The use of contaminated ice results in an additional 10% loss (of original catch) at the auction hall. Thus as summarized in table below, the cumulative effect of all these losses is that 35% of the shrimp caught are rendered unsuitable for further processing. A further 2% loss occurs during this process. Thus, for example, of a total raw shrimp catch of 271kg, only 176 kg are useable and this yields a total of 91.6 kg of frozen, headless peeled shrimp.

4.4.3 CONCLUSION: The Competitiveness

The wastages and actual recoveries during various stages in the value chain of frozen shrimp production and the resulting factory gate price of processed shrimp indicates that Pakistan is not a low cost producer compared to countries like Thailand and Indonesia which rely on aquaculture and can undercut this price by more than 20%. The high Pakistani cost is principally attributable to high cost of catching shrimp (raw materials) this plus an absence of a comprehensive current survey of fish stocks results at this point in time makes it difficult to provide a definitive answer to the question of the international competitiveness and further evolution of shrimp fishing in Pakistan.

However, to improve supply side, it is estimated that upto 20 % more potential gain in shrimp catches on per unit of effort is possible using echo-sounding fish finders, Global Positioning Satellite (GPS) navigation and use of long-range Single Sideband Band (SSB). Moreover, according to interviews with fisherman, potentially, about 9-10 % of the caught shrimps can be salvaged for human consumption by bringing more improvements in both fishing and fish handling techniques. There are two main avenues for reducing this loss. One option is to install on-board ice-making equipment. It is expensive (approximately Rs. 1500,000-2000,000) and can require expensive, and specialized maintenance, but it also takes up space which in turn reduces the fish carrying ability of the boat. Flash freezing fish immediately after they are caught is also an option, but would involve similar large expenditures. Essentially, retraining the crew to process the fish on board and would also be needed. It may also involve registration fee since the boat would be reclassified as a trawler. The training part can be taken care of under the TRTA II, at least for those vessels who are envisaging installation of on-board flake ice machine. The other requisite is current cash flow crisis and for which an instrument of long term –low markup rate credit line will have to be established.

Simpler and less expensive avenues would involve (and already there is some progress in this regard) renovating the fish holds of the boat by installing better

insulation, creating a separate (shallow) compartment for shrimp (to minimize crushing) and dipping the shrimp in a sodium metabisulfite or Everfresh® solution to minimize contamination. UNIDO under TRTA I has already assisted fishermen in this regard by providing a suitable design to revamp the boats for up gradation so that the upgraded boats also meet the EU standards.

The ongoing catching of juvenile shrimps, the reliance on bottom fishing techniques (dredging) and fine gauge nets, and the low shrimp catch rate, the declining size of shrimp caught, does support the hypothesis of a declining fish stock which can be checked by reducing the allowable catch rate to sustainable levels by imposing limits or bans on the catching of juveniles or during the breeding season. The negative impact on breeding of other species could be partly addressed by enforcing the regulations on the gauge of the fishing nets used. Controlling the amount of fish caught can only be addressed by setting an annual limit on the number or weight of a particular species caught, and by limiting the fishing season. However, this will require efficient monitoring and uncompromising but credible enforcement and penalties.

Another approach is to control the number of fishing boats by restricting the number of fishing licenses issued. If, as in some countries, a fishing license is like a property right (i.e., can be sold and resold) there is a market solution to the problem as the issuing authority can buy back the licenses. When licenses are issued on an annual basis, or only an annual registration fee is levied, some other less market oriented method of reducing them has to be used with the resulting political implications.

Under the current environment, it would be a good strategy not to count on any major expansion in “wild catch” shrimp exports in the near future, or at least until sustainable fishing rates are identified. In fact, in the near future, it is more likely that the sustainable catch rate will be below current levels and since then “wild catch” shrimp will not be price competitive unless significant cost reductions are put into place, otherwise the “wild catch” shrimping may well end up being a marginal activity.

Indeed, if Pakistan wants to become an important shrimp exporter, aquaculture (farmed shrimp) is the option worth exploring; the issue of what type of farming is best suited to each locale still needs to be completely resolved.

Besides all the above, it is essential for the market competitiveness that while the industry should be geared up to attain the high technology in processing to get its market due share in the global market and in these processes be orchestrated so that future exports of fish, shrimp and other fishery products must also meet international Sanitary and Phytosanitary Standards (SPS) in accordance with EU/ international compliance standards at all levels starting from fish catching to fork.

Part of the explanation for the relatively low shrimp (and edible fish) catch rate in Pakistan may be the result of inefficient fishing techniques. The lack of echosounding fish finders makes setting the depth of the shrimp nets a matter of trial and error. The lack of Global Positioning Satellite (GPS) navigation hinders returning to proven fishing spots, and the prohibition of long-range Single Sideband Band (SSB) radios hinders inter-ship communications and co-operation. However, according to interviews with fisherman, the potential gains from all of these will be an increase of about 20% in the total catch, i.e.

4.5 Export Competitiveness of the Sector

The concept of competitiveness has been widely accepted therefore now ability to compete in the world market is of major concern. Competitiveness may be defined as “A country’s share of world markets for its products which is measured by productivity”. Productivity, allows a nation to support high wages, a strong currency, and attractive return to capital and with them a high standard of living. World economy is not a zero sum game and many nations can improve their prosperity if they can improve productivity (World Economic Forum, 2005). Competitiveness is linked with export performance of other trading and non trading countries. Broadly speaking the competitive position of Pakistan if compared to newly emerged economies is quiet discouraging. Nevertheless Pakistan’s export performance can be improved many folds and in this context lessons can be learnt from the emerging economies of the world such as those of Korea. , Pakistan needs to improve the governance as well as technological progress to increase high-tech exports. From fisheries point of view, the developing countries like Pakistan start from low technology and with passage of time shift to improved technologies. Technology-based activities help improving export performance that brings competitiveness of a country. There is a dire need to suggest a model to government of Pakistan which describes that high technology, value added fish and fishery product exports using human capital as an investment in the country. Value Chain Analysis (VCA) is highly useful tool in assessing export competitiveness. It identifies particular areas where policy/institutional actions may have greatest positive impact on the productivity of local firms, export competitiveness and diversification, and on the overall economic growth [World Bank (2006)]. Recently Value chain analysis for Pakistan’s export items was carried out on five specific products which were identified after consultations with the government and the private sector. These include: Major Export Items (Textiles/Blue Jeans, Fisheries/Shrimps), New Potential Exports (Marble Tiles/Mining, Powdered Milk/Agribusiness/Dairy Product, and Automobile Radiators/Light Engineering).The analysis is

developed, separately on selected items, to quantify production costs of all segments of value chain involved (Zia , 2007). The productivity and export competitiveness is assessed by this method. Findings reveal relevant policies/constraints to cost and quality issues, and identifies inappropriate technologies and policy distortions. Major constraints identified by this analysis are infrastructure, burdensome regulation, weak legal and enforcement frameworks, inadequate coordination among government agencies, inadequate access to finance, food quality and safety standards, and pockets of trade protection. This will require off course extensive research and development and the success will depends upon the combined efforts of the government, individuals and business initiatives both in public and private sectors. The exports of the country's seafood crossed over 213 million dollars mark during the last fiscal year despite a ban put in place by the European Union. According to exporters, after the EU imposed ban, seafood including fish was introduced in uncharted markets while exports to Indonesia, Thailand and The UAE saw a noticeable upward trend, pushing the total exports to 213 million dollars.

Sindh Boat Owners Association has upgraded 100 boats for their operation under Vendor Assurance Program (VAP) and they are awaiting the approval of Marine Fisheries Department (MFD). Seafood exporters are allowed to export fish and shrimp to EU, which come to their plants through the approved boats. The MFD approves the boats on inspection under the VAP. Currently around 150 boats are operating under the VAP and 100 more boats have been approved by the Director Operations of Karachi Fish Harbor Authority (KFHA).Following incentive were offered to various stakeholders for using facilities at KoFH particularly to encourage value added export.

- Free land to Mole holders for construction of their offices.
- No commission and free potable water to boats willing to land and auction their catch at KoFH's Auction Hall.
 - Nominal fee of Rs 1000/- per trip for unloading fish at KoFH.
 - Allotment of land for fisheries allied industries and boat building at cheapest possible rates.

4.5.1 Areas of Low competitiveness in Fisheries export sector

The current study identified three areas where competitiveness was low and could be improved. These were:

- i. Value losses in the cool chain of the existing marine catch, both for export and for internal consumption (several competitiveness issues were identified)

- ii. Fisheries management shortcomings leading to poor resource utilization and over fishing of resources
- iii. Absence of Mariculture and coastal aquaculture

Strategy 1: A Working Group will be created and supported to guide on the future alteration /modification / revamping needs of Fish Jetties at Gadani , Dam , Pasni and Jewani so that these infrastructure which are not functional due to poor design/civil works can be once again brought into operation . In conjunction with the working group ,technical assistance will also be provided to develop a road map for rational and effective management system and business plans in which prioritized steps will be identified for achieving management change to ensure compliance and other quality related issues for fish/shrimp export competitiveness, at each of the above mentioned harbors.

Strategy II. Assistance is also needed to the Balochistan Fisheries Department on a series of initiatives and programs. One such thing could be the development of a master plan for coastal fisheries Development in Balochistan coast , particularly it should include reviewing the master plan for the development of landing stations/ jetties / port and required allied facilities along Makran coast . The master plan should include developing a fisheries strategy for the province, appraising key development project proposals as a number of international development agencies are keen to invest in projects leading to poverty alleviation in the coastal communities of Balochistan which are the poorest of the poor communities.

Strategy III. Baba and Bhit Island's community is a forward looking fishermen community and there are on the opportunities for developing the fisheries of the Baba and Bhit Islands opposite Karachi Fish harbor. Options for fishing port development and also address other ways of improving the income and livelihoods of the indigenous fishermen of these islands by increasing job opportunities for women in shrimp peeling sector by constructing peeling shed. The community is willing to contribute in this process on self help basis.

4.6 Assessment of Quality and Standards

During the present studies , various aspects of fisheries, including quality and standards were deeply studied in both the coastal districts of Lasbella and Gawadar of Balochistan , through a series of meetings with a number of stakeholders like fishermen community , fish village dwellers , boat owners and navigators , market players , fish processors , boat builders, fish net makers, ice

makers/ suppliers , fisheries officials , representatives of NGO's (IUCN / WWF). The quality and standards is actually an overlapping area with inter-linkages with compliance and it can not be dealt with isolation so the issue has been covered under different topics earlier as well to a larger extent, The quality as perceived by the majority of the producers in the industry is linked to the freshness and in fact almost all the respondents gave this criteria for determining the quality of the fish. But there was a big question that they know the standard procedures applied world over to determine the degree of freshness or for that matter the level of spoilage in the fish. Only physical methods were known to most of the respondents, Some gave the credit to their educated eyes in this regard whereas some others said it was their experience, The standards , for instance was a term of which almost all the respondents in the industry were aware of , however variable of standards in HACCP and Other Standards such as FDA approved standards were not known to the respondents at a significant level . Many world markets are now adopting now standard verifiable to determine the level of spoilage and stage in achieving rigor mortis . Even some markets are sensitive to the extent that in Japan the Tuna is sold by quality standards and the tuna (which immediately after catching has been de-blooded and followed by desensitization through spinal cord pithing) has a quality of flesh that fetches the prime price in the Tokyo market as high as euro 40/Kg . These fish, of this quality are always in short supply there due to heavy demand. It fetches as high as two time price than the tuna which has not this quality of meat. The notion is that whether there are standards which need following at the minutest level if at all the advantage in the market has to be gained. We lack behind in this aspect. One way of gauging this is also the rate of rejection, The respondents in the current survey largely reported that there rejection rate was very low to negligible. This cannot be verified in this study, however. Internationally, there are arbitrators who specialize in this field and solve the situation and protect the right of importer/exporter. We are at not this stage yet , However the industry should be preparing itself for coping with such anomalies in future . The quality control mechanism of Ca through its standard procedures for histamine and other microbiological variables is so far so good. However their capabilities are limited in terms of tests they can perform. More investment is needed in man power development, human resource management and laboratory protocols for any emerging quality related scenario with potential to best the export potential of the industry. An awareness program on standards and quality control is again a dynamic process and it takes more than what this country has done so far in terms of training of the fishermen and other factory workers in the processing business. The Job

becomes more difficult considering that majority of the fishermen are illiterate or barely educated.

4.7 Assessment of Compliance Status

The respondent representatives of the processors (about two third of all) that there is a need to borrow the technology of developed countries and consult foreign fishery management experts to guide them to their hidden treasures, through adopting compliance measures on SPS issues " A great majority (about 80 %)of them also showed awareness to the level that despite a number of interventions , still great strides have to be made for improvement of hygiene at processing plants, as , according to them , witness the fact that Pakistani seafood has yet not been able to have its acceptance in EU markets . About almost half of them was aware that number of international assistance programs are their to help improve the situation. a small number out rightly praised UNIDO/ EEC and others (including government efforts) for technical assistance in improving conditions at the Karachi fish harbor.

Respondent (mostly managers of the processing plants) in Balochistan invariably showed unawareness about the word SPS. Similar was the situation with most of the Fisheries inspectors in Balochistan Fisheries Department met along the coast during current survey,

The Landing stations which are scattered all over Balochistan Coast gives a gloomy picture with respect to compliance of hygiene and other sanitation issues. The fish is transported on donkey carts from the off loading boats, parked well inside the shoreline, to the catch destination (the cold storages/ sale points) located off shore in a shabby condition.

Though, under TRTA I. compliance was one issue which was addressed to a greater extent , the survey findings are readily pointing that much more is needed to be done both at institutional and industry level . Particularly if the target is to get the EU Ban lifted. Still a cosmetic approach to get the ban lifted seems to prevail as valid option. The industry understands well that there are risks in this approach but they are of the view that it costs and need more overhead costs to sustain the compliance parameters in place for a very long period.

Lack of training facility at MFD is yet another limiting factor which hinders the awareness process of the industry workers and the others in inspection business. MFD has deposited a PC1 to this effect to the GOP and they are waiting for its approval that will lead to the revamping of their centre to the

extent that it becomes functional again. Infrastructure will be developed/revamped, but still there will be scope to strengthen it to tune it up to the needs of private sector and already TRTA is considering such a technical assistance under its TRTA program under interventions proposed for the fisheries institutions.

In brief it can be concluded from the present studies that compliance remains to be the single most item of the unfinished agenda of TRTA program. One , handicap , in this regard is that all the technical assistance provided under this head goes largely unnoticed and as training, for instance , is a dynamic and unending process steps are needed to motivate the sector players to understand the underlying advantages and disadvantages of such capacity building both at individual as well as company level . Wide dissemination process is needed. Investment in purchasing journals, periodicals, fish industry news for PSEA and MFD, KoFHA., KFHA Libraries is recommended . More over as seeing is believing, foreign visits by the industry delegates and participation in international fish export moots need to be encouraged under TRTA , said the PSEA Chairman.

It will not be out of place here to mention that the industry recognized the UNIDO support for Compliance in Fisheries Sector as was evident from the Chairman PSEA's interview in which he highlighted , particularly the following ; The Marine Fisheries Department (MFD), which operates within the Ministry of Livestock and dairy development now for ensuring management and development of fishery resources as well as inspection and certification of exports for compliance with international requirements. The MFD acts as the EU designated Competent Authority (CA) in Pakistan. The support that UNIDO provided, within the framework of the EU funded TRTA programme, to the fisheries sector consisted of:

- Development of a comprehensive **Inspection Manual** in accordance with international practice for purposes and use of MFD as the EU designated Competent Authority.
- Upgrading and accreditation of the microbiology and chemical testing laboratories of MFD by providing **technical advisory services** and provision of **equipment, training** and participation in PT schemes.
- **Trainings** in Standard Operating Procedures (SOPs), Good Manufacturing Practices (GMP), Good Hygienic Practices (GHP) and Hazard Analysis Critical Control Points (HACCP) and Traceability methods to staff of MFD, KFHA, FCS and fish processing plants.
- **Training** of fishermen, boat owners, mole holders and auction hall operators in SOPs (Urdu) and good operational management practices along the entire fisheries chain.

- **Technical advice** for improvement of fishing boats and landing sites.
- **Technical advice and designs** for upgrading of auction halls, K-1 and K-2, operating under Karachi Fisheries Harbor Authority (KFHA) and Fishermen's Cooperative Society (FCS).
- **Expert guidance** in application of SOPs and Traceability methods along the fisheries supply chain to ensure good hygiene practices in handling of fisheries products and traceability from fishing at sea to processing for export.
- **Expert guidance** in development of HACCP Plans for fish processing plants and application of HACCP practices by processors.
- Provision of **hand-held PC compatible traceability instruments** to fish processing plants to record traceability of fisheries products processed for export.
- Conduct of **studies** on value chain analysis and SPS mapping in the fisheries sector.

4.8 Assessment of Testing & Certification Capacity

There were different dimensions of the survey to assess the current certification and allied testing services at CA level as perceived by the processing industry. In terms of satisfaction, there was no two opinion and all the clients were generally accepting the results of the laboratory whenever their samples were picked up for further testing . Almost all the respondents considered the cost of certification as negligible when compared to the consignment value. . The availability certification of services at Karachi harbor was satisfactory, however dearth of inspection staff at the MFD level was characterized by the respondents as at a alarming stage . The survey also indicated that instead of specialized service people in inspection services , other staff is temporarily assigned these duties .Almost half of the respondents found that the certification facility at airport is well below the mark No permanent staff has been posted at the airport . Most felt that as the final signing authority in MFD is one so may be by delegating this power to the staff below can improve the situation. , however, it will need certification of the inspection staff itself for their eligibility for conducting inspections. . There were no inspectors at any site in Balochistan or even at Korangi harbor. MFD deputes its staff at KoFH on need basis when a request is made. KoFHA need to have its own services which should however be functional under the MFD command. Likewise, .in Balochistan again, inspection services are totally misunderstood . In terms of number of accredited laboratories in the country regulating exports, the current strategy of having a single CA in the country is largely acceptable to all

stakeholders interviewed , however all have some reservations and suggestion in this regard . The general feeling is that the analytical services can be privatized as well , however , all think that by doing so , it may add to quality and help gain time lapsed during current testing system , but it will add more cost to their consignments. The option which KoFHA and Balochistan Government have in this regard is that that they want a one more sub laboratory at their set ups and that should be either operated directly by MFD through its staff, or the Balochistan and KoFHA can depute their staff for this purpose putting them under the chain of command of MFD. A total of six processing plants are now HACCP approved while three others are also FDA approved. Companies are now conscious of this fact and about half of the processors wanted to have their set ups approved and they reasoned finances to be the constraint. Some however don't see any reason, why they should have their own set ups approved. The jist is that as the new markets are being explored the importing countries are prone to put their own country-approved quality standards and the industry in Pakistan should gear itself up to meet the rising international standards. The Biotoxins, and other group of chemicals (such as heavy metals etc) and microbes are showing up in the minds of quality conscious and even common consumers world wide , so this is the right time that we have a strategy to cope with this situation which may pose restriction on our exports in future . Particularly as the present survey shows that in recent years there is also a shift in demand from Pakistan for type of marine products , particularly mollusks and crustaceans are finding new markets and these invertebrates are more susceptible to biotoxins and heavy metal , we should be creating the facility at our testing laboratory in MFD for their tests . Side by side, an awareness program for the industry should be organized as an early warning system.

4.9 Assessment of Value Addition & Productivity

Based on the assessments made during current studies it is evident that almost two third of the of fish processors interviewed are aware of the fact that by value addition they can come better in the market and increase their incomes in the global markets and they were assigning the potential of value addition to the growing consumer incomes, the rise of supermarket retailing and more favorable trading conditions in most of the importing countries. The industry is in transition phase and already some processors (about 20%) are already in the process of increasing their opportunities to add value to their produce. The financial constraints for putting in new machinery and rising costs of fuel and

electricity were their major handicaps in investing more. The rising concern of short supply of shrimp and other valuable fishes was heard across the board. Against this back ground the industry representatives the following salient recommendations;

4.9.1 Supporting good processing processes.

Training to help fish processors raise their quality and work to meet export standards will help gain certifications and reduce the incidence of import detentions.

4.9.2 Improving laboratory support services.

Expanded laboratory capacity to test and certify products will increase detection of non-conforming product and enhance the capacity of food processors to improve their product.

4.9.3 Workshops and Advanced Trainings;

Demonstration workshops and industry seminars on export promotion of value-added products for fish such as tuna products demonstrating the technology of producing value-added fish/tuna products, including, raw material handling, processing, packaging and presentation

4.9.4 Measures for continuous energy supplies & other services on economical rates;

The government should be approached for a more concrete policy for energy supplies at compatible rates for perishable items such as fish. The regulatory measures on other services such as water supply and transport could further ensure consistent supplies of high quality/value fish at competitive rates for both domestic and international markets. .

4.10 Access to Markets

Pakistan is a substantial exporter of ocean and freshwater fish. Exports can be subject to traceability requirements to address food safety concerns of some importing countries. Market access constraints for fish and fish products depend on the type of fishery: e.g. mainly coastal fishery and to a very limited extent aquaculture. Although basic hygiene conditions are the same across both

sectors, for aquaculture a series of other risks arise from feed and the method of fish-farming. In the coastal fisheries area, other types of standards e.g. those related to environment and conservation tend to be more restrictive. Two SPS issues, important for market access, which cut across a series of product group Areas such as fish and fish products, are traceability systems and certification systems / private standards

4.10.1 Establishment of Traceability Systems

The use of traceability systems is growing internationally, driven by regulatory requirements and advances in information technology. It seems clear that such systems are becoming an industry norm, albeit at different speeds across different product categories and in different key markets. Against this dynamic background, the following actions should be considered:

- A dedicated program of investment in traceability systems based on a cost-benefit analysis by product and according to market requirements. of fisheries sector
- Pakistan should strive to align its traceability system to those of its main trading partners, and seek an equivalence determination from importing countries. In the absence of such an equivalence determination, the market access logic to implementing such systems would be lost.

4.10.2 Promote Local Certification System on Commercial/Non Political grounds

The following compliance solutions could be considered:

- Design of national Good Practice schemes which can be benchmarked to international schemes and further development of certification capacity of CA which will be recognized by international buyers; and promotion of collective certification scheme to ensure that the industry can be effectively integrated into market chains.

4.10.3 The respondents assigned the following priority, their in this regard for follow up actions (as summed up from their responses) under TRTA II:

- Continued technical assistance to national competent authorities to apply equivalent measures on fish and fish products to those in target markets, in particular the EU.
- Strengthening MFD laboratory to conduct internationally recognized analyses of specific
- Residues and contaminants development

4.10.4 Aquaculture

The \$80 billion worldwide aquaculture industry now provides about half the edible seafood produced each year and promises to eventually dominant this rapidly expanding market. Pakistan is being left behind in this so-called “Blue Revolution” even though there is immense potential with a thousand kilometer coastal resource available for aquaculture exploitation. Pakistani government need support in implementing a sustainable and competitive shrimp, oyster and other coastal fish-based aquaculture and for which no serious attempt has so far been done on the part of the government .Recently, however, Pakistani government has recognized this potential and has called for a plan to address critical problems in implementing an ecologically responsible and competitive aquaculture industry. Foremost would be the problem of water pollution from the wastes produced from typical coastal fish and shrimp farms, particularly when dumped in the local coastal ecosystem. We propose that environmentally sustainable aquaculture should be implemented for the initial development in Pakistan with an approach to focus on shrimp as the primary aquaculture product based on its low risk technology and proven marketability with a comprehensive research back up to explore opportunities for bioengineering as well as a desirable product on the world’s seafood markets. The ultimate goal should not only be to demonstrate the technical and economic feasibility of environmental friendly aquaculture but also to integrate these results along with considerations of socio-economics, regulatory framework, and other factors as appropriate into an Aquaculture Management Plan to compete environmentally, socially, and economically in one of the fastest growing global industries. The time is ripe for Pakistan to gain benefit from internationally available technological advancements and success stories and eventually pass potential benefits from the sustainable

aquaculture industry such as increased employment, income generation, women's participation and empowerment, exports and foreign exchange, and poverty alleviation to its stakeholders.

4.10.4.1 Specific Target-oriented aquaculture industry development is needed as;

- Shrimp industry (exclusively fishing for “wild” shrimp) is in sufficiently serious difficulties to cast its longer term survival into question and to suggest aquaculture as a possible alternative.
- And within the aquaculture sector, particular attention needs to be given to control plans on heavy metals, contaminants, residues of pesticides and veterinary drugs if at all the aquaculture products are to be exported following good aquaculture practices .

4.11 Policy Capacity and Support

The announced “National Policy and Strategy for Fisheries and Aquaculture Development” by the then federal ministry of Food , Agriculture and Livestock in September 2007 outlined a number of measures to improve the lives of poor fishermen. This is perhaps is the first-ever policy for this sector. To various extents, the fishery issues were covered under agriculture policies or livestock policies. The Agriculture Enquiry Committee report in the 1970's and that of the National Agriculture Commission in 1987 gave some attention to the fisheries sector, but they failed to make a major impact because of inadequate coverage of the real issues. During 1988, 1995 and 2001, some policies for deep sea fishing were formulated but these were specifically aimed at promoting fishing through licensing arrangements in the Exclusive Economic Zone of Pakistan and only marginally covered aspects of the national/local small-scale coastal fisheries.

The new policy is stated to be designed to increasing the contribution of the fisheries and aquaculture sectors to national economic growth, poverty alleviation and food security.

The parameters have been set for sustainable development of inland and coastal aquaculture production, sustainable increase in inland and marine capture fisheries production, resolving post-harvest issues, higher per capita fish consumption, improved fishers' and fish-farmers' incomes, creation of well-paid employment in the fisheries and aquaculture sectors and increased export earnings from aquatic products.

The policy document also spells out the policy, strategy and its implementation plan, institutional monitoring and recommendations for legal improvements.

As local stakeholders were not consulted, the policy got a lukewarm response from the fishermen community and the civil society, who have been expressing concerns over the plight of fishermen. However, they believed that the current policy as an export-oriented, commercial and anti-community policy. On the other hand, the Pakistan Fisherfolk Forum (PFF) along with the civil society has drafted one of its own detailed sustainable fisheries policy.

Under the European Commission (EC) supported the project “Sustainable Livelihood Development initiatives in Disaster Prone Areas of Pakistan”. Oxfam with the collaboration of PDI conducted a study on “Fishing Rights and Sustainable Fishing Practices in Sindh”.

Analyzing the fishing policies and practices, the study pointed out the gaps in the policy, legal framework and practices which were responsible for the degradation of the coastal fisheries resources in the province. During the current mission it was informed by the fishermen representatives that local fishermen communities in Sindh and Balochistan and relevant NGOs including the Pakistan Fisherfolk Forum, the Pakistan Mahigir Tehrik, the Sindh Democratic Forum etc have already initiated dialogues among all the stakeholders to persuade the government to follow commitments made during the general election 2008 with the poor fishermen.

Major policies regarding fisheries have always been designed by the federal government. Provincial governments must frame their own policies keeping in view the socio-economic conditions of their respective jurisdiction. Fishermen folk were of the view that the Policies made by federal authorities have never addressed the real issues of the fishermen seriously and have only added to their miseries because they are unaware of the ground realities. They also went on saying that over-fishing by foreign and local trawlers has ruined the coastal economy. The federal government has been criticized for allowing operation of deep-sea trawlers in the country’s water zone which is one of the key factors in the depletion of fish species. The Sindh government has also failed to implement the laws banning use of destructive nets. The unregulated fishing on the coast of Sindh has in fact wiped out several important fish species of commercial value.

While there is a need, therefore, to revise the new national fisheries policy, the government should look into such factors as over-fishing (both by foreign and local trawlers), use of illegal nets, destruction of mangroves and pollution caused by industrial and domestic waste, resulting in the extinction

of fish species. Tremendous damage has also been caused to fish species as a result of destruction of mangroves. The studies showed that most of respondents also appreciated the need for construction of more jetties and transportation and processing facilities to direct exports of sea products to Karachi.

The current announced policy is silent on issues that Badin has turned into the most devastated area for the fishing community; sea intrusion has wreaked havoc in that region. The faulty drainage schemes including LBOD and RBOD have exacerbated environmental degradation in the fishing catchments areas of lower and upper Sindh. In Thatta and Badin, sugarcane mills are also destroying groundwater and polluting the fishing catchments areas. The policy is blind on the issues of compensation and rehabilitation of fishermen community on forced/ inevitable natural calamity prone displacement as were the affectees of the Chotiari Dam in Sanghar. The policy is also silent on livelihood source of fishermen during close season.

The civil society, the representative body of exporters and some respondents have identified the following key gaps in the national policy framework:

- *Acceleration in exploitation amidst confirmed reports of drastic reduction in fisheries resources.

- * Abatement of the much criticized open entry policy in fisheries.

The first of two policy goals puts emphasis on “increase the contribution of fisheries and aquaculture sectors to national economic growth”. And “Increasing the role of private sector and attracting investment in fisheries sector. It means further commercialization and corporatization of fisheries sector. A paradigm shift is therefore required to improve regulation and management of the fisheries.

4.12 Intellectual Property Rights (IPR)

This is a variable which was least understood by the respondents and none of the industry member has so far attempted to obtain the intellectual property rights. However, when asked that would they be willing to know about IPR and have training in IPR about 30 % favored a training program to this effect while over half of the respondents showed interest in knowing more about this.

4.13 Recommended TRTA II Interventions

1. Under TRTA II the capabilities of Pakistan Seafood Export Association (PSEA) can be enhanced through

- Capacity building of PSEA to Develop capabilities to sensitize private sector on SPS requirement; and increasing awareness of the various standards in the export markets.
- Technical assistance to improve on information gathering and sharing and establish an information system that allows timely generation and assistance for developing a marketing information system at PSEA Further.
- Assist in developing a Value Addition Scorecard Data base

2. On the supply side increasing fish products for human consumption in a sustainable manner and keeping in view of the current state of fish resources, TRTA II will seek to accomplish this in the first instance through providing technical expertise for making optimum use of harvests and reducing post harvest losses; and (ii) developing, improving, and disseminating appropriate technology for storage, processing, and distribution.

3. Under TRTA II a Working Group will created and supported to guide on the future alteration /modification / revamping needs of Fish Jetties at Gadani , Dam , Pasni and Jewani so that these infrastructure which are not functional due to poor design/civil works can be once again brought into operation . In conjunction with the working group ,technical assistance will also be provided to develop a road map for rational and effective management system and business plans in which prioritized steps will be identified for achieving management change to ensure compliance and other quality related issues for fish/shrimp export competitiveness, at each of these harbor.

4. TRTA II may consider providing assistance to the Balochistan Fisheries Department on a series of initiatives and programs. One such thing could be the development of a master plan for coastal fisheries Development in Balochistan coast, particularly it should include reviewing the master plan for the development of landing stations/ jetties / port and required allied facilities along Makran coast . The master plan should include developing a fisheries strategy for the province, appraising key development project proposals as a number of international development agencies are keen to

invest in projects leading to poverty alleviation in the coastal communities of a Balochistan which are the poorest of the poor communities.

5 The TRTA II should be assisting Baba Bhit forward looking fishermen community on the opportunities for developing the fisheries of the Baba and Bhit Islands opposite Karachi Fish harbor. . TRTA should review options for partially supporting infrastructure of mini fishing port development and also address other ways of improving the income and livelihoods of the indigenous fishermen of these islands by increasing job opportunities for women in shrimp peeling sector by constructing peeling shed and cold storage

6. TRTA II should be supporting a series of Demonstration/training workshops and industry seminars on export promotion of value-added products for fish such as tuna products demonstrating the technology of producing value-added fish/tuna products, including, raw material handling, processing, packaging and presentation.

7. Under TRTA II technical assistance to the Korangi Seafood processing companies particularly aiming at Value added fishery product development in developing business plans / feasibility studies along with technology transfer in various aspects of quality management and regulatory compliance especially in each of the seven principles of HACCP, traceability system covering many different products including smoked, canned, fresh, frozen products, fish (including canned sardines /tuna), crustacean and bivalve and cephalopod molluscan shellfish..

8. TRTA II program can assist in developing industry codes of practice for processing and handling of wild-caught shrimp and shrimp products including procedures of shelf life testing, monitoring of spoilage patterns, identification of food safety hazards and design and introduction of suitable quality assurance programs to the production floor at the industry level, This will include an introduction to new plant approval procedures and laboratory tests to support inspection decisions

9. TRTA II is in a position to technically support the Fisheries Department Government of Balochistan on restructuring of the fish inspection activities, training of inspectors and the provision of policy advice to the senior civil servants in the operation of the Minister and senior civil servants in the operation of the food control system in fishery, particularly and the role of

official laboratories in food safety. TRTA II can consider supporting a pioneer studies on discards in fisheries and developing a feasibility for optimum use of this resource to even earn foreign exchange through meeting the ever increasing demands in the global market.

10. TRTA II should be providing technical assistance/ advise to inspection agencies on the design of official control systems for the reduction or elimination of hazards related to bivalve mollusk (oysters, mussels and clams, squids and cuttle fish etc) and their products monitoring systems for marine bio-toxins (toxic algal blooms - TABs); control of ciguatera toxins in reef fish; design of residue monitoring programs for veterinary drug and other toxic residues in fishery and aquaculture products This will facilitate in meeting the increasing demand of bivalve and other shell fish exports.

11. Energy Crisis can be addressed at war footings and TRTA II can take lead in this activity by providing technical assistance for adopting Best Energy management Practices using Energy Management Systems (EMS) which should be linked to; tracking of energy use; adoption of project investment criteria reflecting project risks and returns for attaining energy efficiency along with economic and environmental justifications; establish Conservation Action Teams (CAT) and ; develop a Strategic Energy Plan creating an Action Plan with trainings

12. TRTA II intervention in model up gradation of boats of very poor fishermen community in Balochistan coast to help maintain the cool chain in their small boat (24' and smaller) through provision of ice boxes and IPC fish holds can be instrumental in triggering a chain of boat modification activities along Balochistan coast .

13. TRTA II is required to enter into model up gradation of boats of very poor fishermen community in Balochistan coast to help maintain the cool chain in their small boat (24' and smaller) through provision of ice boxes and IPC fish holds can be instrumental in triggering a chain of boat modification activities along Balochistan coast .

14. TRTA II need to provide thorough Assistance in Fisheries Trade policy development and Revision of policy elements of Pakistan Fisheries Policy to address; open access fisheries policy; deep sea fishing policy; policy on distribution and nature of resource use between fishermen of two provinces of Sindh and Balochistan; labor laws with regard to labor in fish processing,

peeling and fish catching ; homogenization of policy and subsequent policy implementation instruments on observing close season .

4. 14 Monitoring Indicators

Indicator No.	Monitoring variable	Level*	Definition	Unit	Base line	Target	Source
1	EU equivalence (fishery product controls)	1	Access to EU market for Pakistani fishery products	Binary	No	Yes	DG SANCO
2	Capacity of inspection system	1	Nos. of inspectors/1000 consignments of exports annually	No.	Total; 5 inspectors for all consignments sent from Pakistan at CA level	20 (five more in CA ; 5 with BFD ; 5 with KoFHA and 5 with KFHA	PACE CA survey and PIFFA
3	EU RASFF alerts rate	1	No. of RASFF alerts for products of plant origin/100 consignments	%	22.6/No. of consignments	11.3/no.of consignments	DG SANCO PIFFA
4	Inspection capacity	1	No. of inspectors/100 enterprises under control	No.	5 for total 60 enterprises registered with PSEA	20	PACE CA survey
5	SPS Compliance rate	2	% of enterprises with full & minor non-compliance/no. enterprises under control	%	Full compliant; 3 ;(5%) Partial; 5(8.5%); Non compliant; 52(86.5%)	At least 11 (EU BASED exporting plants should be SPS compliant); Preferably at least 50% of total registered plants which numbers to 30	PACE CA survey

6	No. of fishery product export enterprises with access to EU market	2	No. of establishments, freezer and factory vessels compliant with EC market requirements	No.	9	18	NAPHIS MFD DG SANCO
7	Market limitation rate	3	% of enterprises reporting market access limits due to SPS controls	%	40%		PACE Enterprise survey (2)
8	Export reject rate (by sector)	3	No. of quality related disputes/100 consignments	%	Averaging between 0.02-0.2%	, < 0.02 % (preferably in the range of 0.01-0.02 and no more ; <u>Ideally no rejection should be the target</u>)	PACE Enterprise survey
9	Employment rate in exports	4	No. of employees/ U\$1000 of exports	No.	On the average 23 employees are hired by each of the sampled company to process 14000 mt fish (@ 633mt/person)	Efficient worker will produce upto a maximum of 400 mt of best quality fish without loss/rejection)	PACE Enterprise survey
10	Female employment rate in exports	4	No. of female employees/ U\$1000 of exports	No.	Current rate is 9.95 of the total work force working at fish processing plants sampled	Ideally the rate should be increased to 20% of the total work force at processing plant level by skill enhancement / labour laws	PACE Enterprise survey

Table: Proposed monitoring indicators: Component 2.1

* Level refers to the output/outcome/impact diagram overleaf

4.15 Conclusion

The outcome of these studies suggests a number of constraints to in the sector which makes the sector less and less attractive for the fishermen as well as other stake holders in the industry. Some of these facts are ; fisher folks are getting poorer and poorer day by day ; the fish/shrimp catches are diminishing ; maintaining cool chain is getting more and more difficult day by day due to rising cost of fuel and ice as well as short/poor supply of freshwaters; new markets in Iran can be legally exploited to the benefit of fisher folks ; the small boats need modifications to maintain cool chain through simple but effective IPC fish holds and iceboxes ; the fishermen need certificate / microbiological and chemical testing laboratory facilities at Balochistan fish harbors; and ; above all the fishermen needed the landing facilities and adjoining port for their boats to be parked particularly when the sea is rough and weather conditions are worsening . Besides these an important cross-cutting need identified was that a very strong fisheries management is required to prevent overfishing and declining catches and fish quality control. The later was important not only for sustaining current processing practices but also to enter into development of value added products to increase current income out puts. The quality control mechanism is porous and need drastic changes. Markets are shrinking for some species while opportunities are emerging in many nontraditional fisheries. The artisan fisheries have its' own inherited problems which are worsening day by day. The marketability and competitiveness issues have started showing their claws. EU ban has yet not been lifted for our fish exports and the situation seems bleak in the near future as well as the industry and even institutional preparedness in this respect is well below the mark. . Interventions are needed in many facets but it should not be patchy and they should distinctly along the value chain so that there is an element of continuity in the development process. Wastage of money and organizational capacity to utilize limited funds available for development seems to be a horrendous issue. The development agencies, therefore should take caution in stopping these wasteful expenditures particularly when the implementing agencies are leaning towards for car and carpet oriented projects.

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<p>/modification / revamping needs of Fish Jetties at Gadani , Dam , Pasni and Jewani so that these infrastructure which are not functional due to poor design/civil works can be once again brought into operation .</p> <p>(ii) In conjunction with the working group ,technical assistance will also be provided to develop a road map for rational and effective management system and business plans in which prioritized steps will be identified for achieving management change to ensure compliance and other quality related issues for fish/shrimp export competitiveness, at each of these harbor.</p>	<p>FCS/KoFHA / KFHA / PFH DA</p>	
<p>4. Technical assistance to the Balochistan Fisheries Department on a series of initiatives and programs. One such thing could be the development of a master plan for coastal fisheries Development in Balochistan coast, particularly it should include reviewing the master plan for the development of landing stations/ jetties / port and required allied facilities along Makran coast . The master plan should include developing a fisheries strategy for the province, appraising key development project proposals as a number of international development agencies are keen to invest in projects leading to poverty alleviation in the coastal communities of Balochistan which are the poorest of the poor communities.</p>	<p>BFD / SFD/ MFD /Fishermen Society ,/ PFHDA GDA / End users group in private sector , Blaochistan</p>	<p>VH</p>
<p>5 Supporting infrastructure of Mini fishing jetty/port development at Baba and Bhit Island , Karachi and also to delineate /address ways of improving the income and livelihoods of the indigenous fishermen of these islands by enriching their on the ob experience and increasing job opportunities for women in shrimp peeling sector by assistance in development of a peeling shed and cold storage</p>	<p>Baba Bhit Educational society of Fishermen Community</p>	<p>VH</p>

<p>6. Supporting a series of Demonstration/training workshops and industry seminars on export promotion of value-added products for fish such as tuna products demonstrating the technology of producing value-added fish/tuna products, including, raw material handling, processing, packaging and presentation.</p>	<p>PSEA /FCS / SFD</p> <p>PSEA / KoFHA/ KFHA/ Fish Processing Industry Players, particularly new processing industries at KoFH/ Karachi University / Uthhal University, Lasbella.</p>	<p>H</p> <p>VH</p>
<p>7. Technical assistance to KoFH based processing plants in Value added fishery product development through developing business plans / feasibility studies along with technology transfer in various aspects of quality management and regulatory compliance especially in each of the seven principles of HACCP, traceability system covering specifically for different products including smoked, canned, fresh, frozen products, fish (including canned sardines /tuna), crustacean and bivalve and cephalopod mollusk shellfish..</p>	<p>KoFH based Fish processing industries. / KoFHA</p>	<p>VH</p>

<p>8. Assist in developing industry codes of practice for processing and handling of wild-caught shrimp and shrimp products including procedures of shelf life testing, monitoring of spoilage patterns, identification of food safety hazards and design and introduction of suitable quality assurance programs to the production floor at the industry level, This includes an introduction to new plant approval procedures and laboratory tests to support inspection decisions</p>	<p>Principally MFD; other stake holders such as / BFD /SFD/ KFHA / KoFHA/ PSEA</p>	<p>VH</p>
<p>9 Support the Fisheries Department Government of Balochistan on restructuring of the fish inspection activities, training of inspectors and the provision of policy advice to the senior civil servants in the operation of the food control system in fishery, and the role of official laboratories in food safety</p>	<p>BFD</p>	<p>H</p>
<p>10. Technical assistance for a conducting pioneering studies on discards in fisheries and developing feasibility for optimum use of this resource to even earn foreign exchange through meeting the ever increasing demands in the global market.</p>	<p>Private sector entrepreneur / Fish Meal manufacturer association/ PSEA</p>	<p>H</p>
<p>11. Assistance/ advise on the design of control systems required for the reduction or elimination of hazards related to bivalve mollusk (oysters, mussels and clams, squids and cuttle fish etc) and their products monitoring systems for marine bio-toxins (toxic algal blooms - TABs); control of ciguatera toxins in reef fish; design of residue</p>	<p>Private sector operating their own quality control</p>	<p>VH</p>

<p>monitoring programs for veterinary drug and other toxic residues in fishery and aquaculture products This will facilitate in meeting the increasing demand of bivalve and other shell fish exports.</p>	<p>systems /</p>	
<p>12. To tackle Energy Crisis technical assistance will be provided for adopting Best Energy management Practices using Energy Management Systems (EMS) which should be linked to tracking of energy use; adoption of project investment criteria reflecting project risks and returns for attaining energy efficiency along with economic and environmental justifications; establish Conservation Action Teams (CAT) and ; develop a Strategic Energy Plan creating an Action Plan with training</p>	<p>CA's laboratory and its staff Fish Processing Industry and other stakeholders / PSEA</p>	<p>VH</p>
<p>13. model up gradation of boats of very poor fishermen community in Balochistan coast to help maintain the cool chain in their small boat (24' and smaller) through provision of ice boxes and IPC fish holds can be instrumental in triggering a chain of boat modification activities ctivities along Balochistan coast.</p>	<p>Fishing Boat owner association Balochistan ./ Anjamun Mahigeeran Balochistan / BFD</p>	<p>VH,</p>
<p>14. Assistance in Fisheries Trade policy development and Revision of policy elements of Pakistan Fisheries Policy to address; open access fisheries policy; deep sea fishing</p>	<p>MoLDD, SFD/BFD</p>	

<p>policy; policy on distribution and nature of resource use between fishermen of two provinces of Sindh and Balochistan; labor laws with regard to labor in fish processing, peeling and fish catching; homogenization of policy and subsequent policy implementation instruments on observing close season.</p> <hr/>	<p>Chamber of Commerce and TDAP</p>	
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