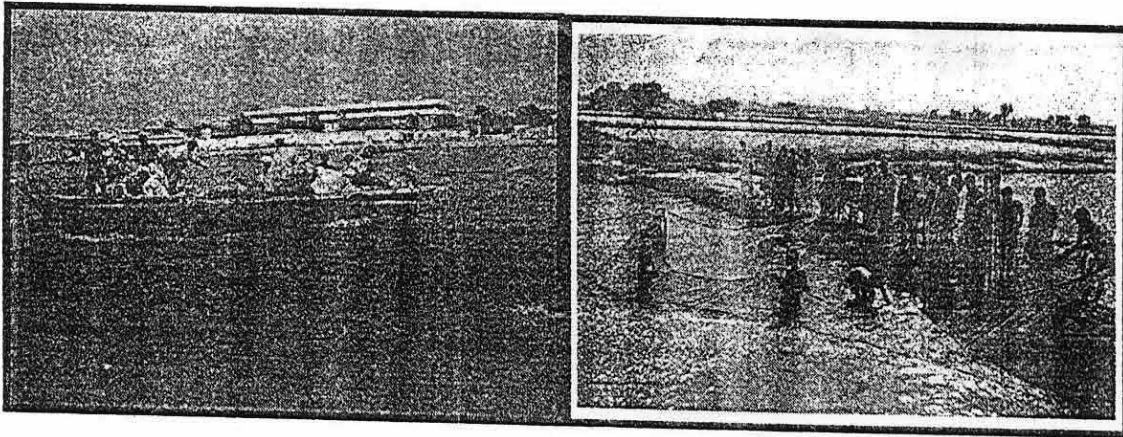


NATIONAL POLICY AND STRATEGY FOR FISHERIES AND AQUACULTURE DEVELOPMENT IN PAKISTAN

Part 1



Ministry of Food, Agriculture and Livestock
Government of Pakistan
Islamabad

2007

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Acronyms

ADB	Asia Development Bank
ADP/PSDP	Annual Development Plan / Public Sector Development Programme
AJK	Azad Jammu and Kashmir
APO	Activity towards Plan Objective
AQD	Animal Quarantine Department
BCDA	Balochistan Coastal Development Authority
BFD	Balochistan Fisheries Department
BOI	Board of Investment
BOR	Board of Revenue
CBO	Community-Based Organisation
CBR	Central Board of Revenue
CCRF	Code of Conduct for Responsible Fisheries
CEMB	Centre of Excellence in Marine Biology (University of Karachi)
CIDA	Canada International Development Agency
CPI	Cleaner Protection Institutes
DANIDA	Danish International Development Agency
DFI	Development Financial Institution
DFID	Department for International Development (UK)
EAD	Economic Affairs Division
EDB	Export Development Board
EDF	Export Development Fund
EOBI	Employees Old-Age Benefits Institution
EPA	Environmental Protection Agency
EPZA	Export Processing Zones Authority
FAO	Food and Agriculture Organisation of the United Nations
FATA	Federally Administered Tribal Areas
FBS	Federal Bureau of Statistics
FCS	Fishermen's Cooperative Society
FPC	Forest Protection Committee
FTC	Fisheries Training Centres
GDA	Gwader Development Authority
GEF	Global Environment Facility
GOP	Government of Pakistan
HDP	Human Development Programme
HEC	Higher Education Commission
HPZ	High Potential Zone
ILO	International Labour Organisation
IOTC	Indian Ocean Tuna Commission
IRSA	Indus River System Authority
IUU	Illegal, Unreported and Unregulated [fishing]
IWMI	International Water Management Institute
JICA	Japan International Cooperation Agency
KFHA	Karachi Fish Harbour Authority
KOFHA	Korangi Fish Harbour Authority
KOICA	Korea International Cooperation Agency
KPT	Karachi Port Trust
MCS	Monitoring, Control and Surveillance
MFD	Marine Fisheries Department
MINFAL	Ministry of Food, Agriculture and Livestock
MMD	Mercantile Marine Department
MOE	Ministry of Environment
MOST	Ministry of Science and Technology
MPA	Marine Protected Area
MPS	Ministry of Ports and Shipping
MSA	Maritime Security Agency
MSY	Maximum Sustainable Yield

MRD	Marketing Research Department
MTDF	Mid-Term Development Framework
NACA	Network of Aquaculture Centres in Asia-Pacific
NARC	National Agricultural Research Centre
NVWW	National Council for Conservation of Wildlife
NEAP	National Environment Action Plan
NEQS	National Environmental Quality Standard
NGO	Non-Governmental Organisation
NIBGE	National Institute for Biotechnology & Genetic Engineering
NIO	National Institute of Oceanography
NIPA	National Institute of Public Administration
NOC	No Objection Certificate
NORAD	Norwegian Agency for Development Cooperation
NRSP	National Rural Support Programme
NWFP	North West Frontier Province
P & D Dept.	Planning and Development Department
PARC	Pakistan Agricultural Research Council
PCSIR	Pakistan Council for Scientific and Industrial Research
PERI	Punjab Economic Research Institute
PFF	Pakistan Fisherfolk Forum
PIDE	Pakistan Institute of Development Economics
PN	Pakistan Navy
PO	Plan Objective
PQA	Port Qasim Authority
PSF	Pakistan Science Foundation
PSIA	Pakistan Seafood Industries Association
SA	Strategy Axis
SAARC	South Asian Association for Regional Cooperation
SBP	State Bank of Pakistan
SCDA	Sindh Coastal Development Authority
SDPI	Sustainable Development Policy Institute
SEAFDEC	Southeast Asian Fisheries Development Centre
SFD	Saudi Fund for Development
SIDA	Swedish International Development Agency
SME	Small and Medium Enterprises
SMEDA	Small and Medium Enterprises Development Authority
SNE	Sanctioned New Expenditure
STREAM	Support to Regional Aquatic Resources Management
SUPARCO	Space and Upper Atmospheric Research Commission
TED	Turtle Excluder Device
TURF	Territorial Use Rights in Fisheries
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organisation
UNIFEM	United Nations Development Fund for Women
WAPDA	Water and Power Development Authority
WB	World Bank
WFC	World Fish Center
WWF	World Wildlife Fund for Nature
ZSD	Zoological Survey Department
ZTBL	Zari Taraqati Bank Limited (formerly Agricultural Development Bank of Pakistan)

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Foreword

The National Policy and Strategy for Fisheries and Aquaculture Development in Pakistan is the result of a comprehensive consultative process that has involved a large number of stakeholders at all levels between 2004 and 2006.

The National Policy and Strategy for Fisheries and Aquaculture Development in Pakistan is constituted of several parts. Part 1 presents the policy, strategy and its implementation plan (activities). Part 2 details the institutional arrangements necessary for the overseeing of the policy implementation process, as well as project concept notes elaborated by the GOP towards the implementation of the policy. Part 3 is constituted of a legal review of the policy, with recommendations for legal improvements to support implementation. While Part 1 is here to stay and will guide the Government of Pakistan in achieving the policy goals, supportive Parts 2 and 3, at the time of writing, were work in progress and may be subsequently modified/updated.

It is understood that the present National Policy and Strategy for Fisheries and Aquaculture Development in Pakistan does not supplant, nor contradict, previous policies elaborated for the fisheries and aquaculture sectors.

Policy formulation process

The components of a policy document – a brief overview

A policy document is formulated to give directions to the development of a sector. The results of a planning process, like the one undertaken to formulate this document, can be disaggregated into a framework with four linked steps: policy goals; strategies with objectives; a plan; and a series of activities. While strategies deal with the 'how' of policy goals, plans and activities deal with 'what', 'who' and 'when' questions in relation to policy implementation.

Following the identification of key issues and problems, the first step is the articulation of the broad policy goals in a *policy* framework. This spells out directions of development a country wishes to follow for a given sector, e.g. fisheries and aquaculture. By their very nature, these tend to be broad in scope and may typically relate to issues such as sustainable resource exploitation, poverty alleviation, food security and economic growth.

Designing a *strategy* comes second, as a strategy takes each policy goal and envisages how it could be met. It is normal for each policy goal to be supported by a number of different strategies. Also of importance is the specification of cross-cutting strategies in support of more than one policy goal and sometimes other strategy objectives. For example, strategies relating to human and institutional capacity development, research, and strengthening cross-sectoral collaboration may all help to support a number of policy goals, as well as the realisation of objectives of a more 'technical' nature.

How to go about achieving the strategy objectives is provided in the *plan* (the third step). The plan specifies the desired results which, if realized, would support each strategy objective. Again, each strategy may have a number of plans supporting it.

The fourth and final stage is to specify the detailed *activities* to be undertaken as part of each plan. These activities should be time-bound, and have allocated responsibilities to those required to undertake them.

It is sometimes possible to specify activities at the third stage, and combine them as part of a plan of activities in support of strategies. The current policy document is based on three steps: policy, strategy, and plan of activities for the development of fisheries and aquaculture in Pakistan.

Fisheries and aquaculture policy formulation in Pakistan – the chronology of events

Past policies:

No national fisheries and aquaculture specific policy has been made in Pakistan in the past. Fisheries issues were covered, to various extents, under agriculture policies or livestock policies. Although reports of the Agriculture Enquiry Committee in the 1970's and of the National Agriculture Commission in 1987 gave some attention to the fisheries sector, they did not make a major impact because problems of the sector were only inadequately addressed. Policies have, however, been made for deep sea fishing in 1988, 1995 and 2001 but these were specifically aimed at the promotion of fishing under licensing arrangements in the Exclusive Economic Zone of Pakistan and only marginally covered aspects of local/small-scale coastal fisheries.

Five Year Plans have been prepared in past for medium term planning. A separate committee for fisheries was constituted for the preparation of these plans and its recommendations accommodated. However, none of the five year plans have catered for many of the broad issues faced by those in the fisheries and aquaculture sectors.

Government Task Forces for inland and marine fisheries and aquaculture:

Two Task Forces were constituted by the Ministry of Food, Agriculture and Livestock (MINFAL) of the Government of Pakistan in 2004 for the preparation of National Fisheries Policy. A Task Force dealt with inland fisheries and aquaculture, and the other with marine fisheries and aquaculture. Through a collaborative process at Provincial/Areas and federal levels, these two sub-groups prepared policy documents related to their areas of work.

TCP request:

In 2004, the Federal Government (MINFAL) approached FAO to fund a technical cooperation project (TCP) to assist in the process of formulating a policy and a strategy to enhance fisheries and aquaculture development in the country. The TCP (TCP/PAK/3005), approved and funded in May 2005, agreed on the following:

Project goal: to create an enabling environment conducive to the sustainable development and management of a growing fisheries and aquaculture sector, with emphasis on its contribution to economic growth, poverty alleviation, food security and environmental conservation.

Project purpose: to support the on-going fisheries and aquaculture policy and strategy development process in Pakistan and to facilitate its implementation.

Project outputs: i) An agreement on the appropriate course of actions for the project to follow and required contribution to Pakistan's on-going policy processes; ii) A well-defined fisheries and aquaculture policy and strategy based on good consultation; iii) An effective implementation plan for the policy and strategy at national and Provincial/Areas levels.

It was agreed that all Provinces and Areas of Pakistan should be targeted.

The approach used in the TCP: bottom-up and consensus-based policy formulation

An FAO TCP Inception Workshop was conducted in June 2005, during which a wide range of stakeholders prepared a detailed project implementation plan. The outcomes from the two government task forces were amalgamated into a single "National Fisheries Policy" draft. The contents of this draft were synthesised into a 'policy brief' by the international consultant hired by the project, and taken, with the assistance of NACA-STREAM, through a first round of community consultations across the four provinces. The policy brief was also sent to numerous stakeholders from Provincial/Areas Governments, Harbour authorities, NGOs etc. who provided their comments in written form. Based on what was learned and recorded during this first phase of community consultations and the feedback received from consulted stakeholders, the draft policy was then redrafted by FAO. Task force members and other project stakeholders from the Government of Pakistan, NACA and an international fisheries consultancy company (Poseidon Ltd.), made observations on its contents, which were then further revised by FAO until a consensus was reached. A round of Provincial/Areas stakeholder consultations followed, in which participants gave their inputs for prioritization of the various recommendations made in the draft policy document, and on its implementation. Following these Provincial/Areas stakeholder consultations in two districts of each of the four provinces, the policy document was further modified and re-named "National Policy and Strategy for Fisheries and Aquaculture Development in Pakistan".

Moving upwards from communities to Provincial/Areas governments, the policy document was then presented at two Provincial/Areas Workshops to representatives from a wide range of government and non-government institutions and organizations from the four provinces concerned as well as areas of the country. Workshop participants used the draft "National Policy and Strategy for Fisheries and Aquaculture Development in Pakistan" as the basis for practical discussion about implementation issues and priorities, and reflected on specificities (e.g. partnerships necessary, timelines, funding and targets) of the activities to achieve the strategy objectives.

Outputs from the Provincial/Areas workshops were then incorporated into the "National Policy and Strategy for Fisheries and Aquaculture Development in Pakistan" draft, which was further refined into a final draft.

The contents of this final draft document, and in particular sections related to the implementation of policy, were thoroughly discussed during a national workshop gathering federal-level government officials from MINFAL and other in-line ministries as well as provincial/area departments, and Chief Province Secretaries. Based on the outputs of the workshop, final amendments were brought to the draft policy document, which was then presented to the Secretary of MINFAL, Provinces' Chief Secretaries and other high-ranking Government Officials during a high-level meeting. Endorsement of the document and its contents was sought and obtained.

The legal implications of the "National Policy and Strategy for Fisheries and Aquaculture Development in Pakistan" were evaluated by a fisheries legislation expert and are reported in appended Part 2. The present policy document was then submitted, along with suggested legislative amendments, to the Cabinet for its approval.

Institutional arrangements to support the implementation of the policy, in harmony with the Government's desire to emphasise agri-businesses approaches to the development of the fisheries and aquaculture sectors and supported by a number of concept notes for umbrella projects which have been formulated to strengthen the implementation of the policy, are outlined in appended Part 3 of the National Policy and Strategy for Fisheries and Aquaculture Development in Pakistan.

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THE STATUS OF FISHERIES AND AQUACULTURE IN PAKISTAN

Overview and impetus for change

Overview of the current status of fisheries and aquaculture:

The fisheries sector contributes around 1% to the GDP of Pakistan. Recent government data reported that Pakistan's total fish production for 2006-07 was about 590,000 metric tonnes where 400,000 metric tonnes came from marine resources whereas 190,000 metric tonnes were produced from inland resources including aquaculture. Total value of exports for the period 2006-2007 was registered at US\$ 189 millions. Principal export markets are USA, Japan, Sri Lanka, Singapore, the EU and the Gulf States.

More than 471,000 fisherfolk, including 287,000 inland fisherfolk, find employment in the sector, while the secondary sector (fishery products processing, input provision and marketing) provides employment and income to more than 110,000 households (FAO data 2003). Capture fisheries and aquaculture together provide employment for around 1% of the total labour force available in the country.

Regarding fish consumption, for Pakistan, there was very little increase in per capita fish consumption (i.e. the estimate of the total supply available for human consumption divided by the population total) from 1.0 kg in 1961 to 2.3 kg in 2001, while the world average over the same period increased from 9.0 kg to 16.3 kg (FAO, 2004).

Pakistan is endowed with vast aquatic resources, as indicated in Table 1. Freshwater, brackishwater and marine resources could be utilised for aquaculture development as long as economically efficient and environmentally sustainable.

Table 1: Inventory of Pakistan's aquatic resources, by province.

Area in ha	Sindh	Punjab	Balochistan	N.W.F.P	Total
Rivers/ streams	160,000	2,940,000	--	2,408	3,102,408
Canals, drains & abandoned canals	321,340	23,700	--	1,763	346,803
Lakes	110,000	6,700	4,047	6,362	127,109
Dams/ reservoirs	97,000	65,800	6,070	26800	195,670
Waterlogged areas	3,000,000	30,000	--	1,600	3,031,600
Deltaic area	700,000 *	--	--	--	700,000
Flood water area	1,000,000	--	--	--	1,000,000
Fish farms **	49,170	10,400	100	560	60,230
Territorial Marine Waters (km)	352 km x 12 N.Miles	--	1,129 x 12 N.Miles	--	1,481 x 12 N.Miles

Source: DOF GOP

* WWF-Pakistan

** areas of fish farms are likely to be underestimated as many farms are not registered and no inventory system exists.

Concerning aquaculture production, most of the freshwater production comes from the farming of carps. Trout culture is also developing.

Challenges:

Since 1998, overall fish production has decreased by nearly 2 percent per year. Although this downward trend may be attributed mainly to the marine capture sector, inland freshwater resources of NWFP, Northern Areas and Balochistan are exploited below potential, with low productivity and high poverty levels encountered amongst inland fishing communities. Despite its endowment in natural resources, Pakistan ranks 28th among fishing nations in terms of production, and 50th in terms of export earnings. Addressing lack of land, seed, feed and technology for aquaculture production are necessary steps, along with addressing post-harvest losses and improving hygiene conditions which reduce the marketability of fish products and are one of the main constraints to export earnings. In addition to the supply of sub-optimal quality fish products on domestic markets, consumers' awareness of the benefits linked to increased fish consumption needs raising. Finally, institutional weaknesses in and outside the fisheries sector, and inadequate capacity of its stakeholders need to be rectified in priority to ensure that both fisheries and aquaculture develop sustainably and in harmony with other sectors of the economy, while receiving the support they need to do so.

Government's impetus for change:

Over recent years, the fisheries and aquaculture sectors have been gaining an increasing importance in the development policies of the country. The recently (2004) approved Poverty Reduction Strategy Paper (PRSP) of Pakistan, emphasizes the significant role of the fisheries sector in the national economy and for food security of the country. The PRSP proposes to address the issue of rural poverty through the accelerated distribution of state-owned land to small farmers, which is of importance to aquaculture development as land availability is an important constraint. Eighty one percent of the farmers have less than 5 hectares available for their activities.

The President's Agricultural Relief Package also states that fish culture will be promoted in the areas of Sindh where salinity levels make land unsuitable for crops but suitable for aquaculture.

As indicated in GOP's *Ten Year Perspective Development Plan 2001-11*, agricultural development during the next decade will focus on producing high-value crops, fisheries, livestock and dairy products for export and on supplying raw materials to agro-industries.

During the Pakistan Development Forum 2005 held on April 26th of the same year, the fisheries sector was highlighted a number of times. The *Prime Minister's speech* during the Inaugural Session of this meeting quoted "... we are also endeavouring to make our livestock and fisheries sectors more dynamic, vibrant, and competitive with industrial bases and marketing to exploit their full potential... to build on excellent linkages with Iran, Afghanistan, Central Asia and Gulf States...". In the same forum, fisheries was identified under the SME sector Phase II development and shrimp farming was declared as one of the major activity under the Value Chain Progress during a presentation at the Pakistan Development Forum 2005¹.

All of the above indicate the strong interest and willingness of the government to support the development and enhancement of production from the fisheries and aquaculture sectors.

¹ <http://siteresources.worldbank.org/PAKISTANEXTN/Resources/293051-1114424648263/SessionII-Salman.pdf>

POLICY FOR FISHERIES AND AQUACULTURE DEVELOPMENT IN PAKISTAN

In light of the constraints to address for Pakistan and its people to reap the benefits from fisheries and aquaculture development, of the immense potential of both sectors and past neglect in agricultural development and planning efforts, the Government of Pakistan (GOP) has decided to give the sector the attention it deserves. To do so, and through a consultative process, it has decided upon three policy goals for fisheries and aquaculture. It has also agreed on a number of guiding principles, and has identified key players and monitoring indicators.

The Government's three policy goals:

The three policy goals that the Government of Pakistan has set to achieve are to:

**1. Increase the contribution of the fisheries and aquaculture sectors
to national economic growth**

2. Increase the contribution of the fisheries and aquaculture sectors to poverty alleviation

3. Increase the contribution of the fisheries and aquaculture sectors to food security

Fish and other aquatic products are now recognised as being commodities of high importance in the economies, livelihoods and diets of many South Asian countries.

Fisheries contributes to **national economic growth** in many countries where comparative economic advantage is derived from appropriate ambient conditions and/or favorable input, labor and processing costs and facilitating administrative arrangements underlying efficient production, distribution, export and quality assurance.

With regards to the second goal of **poverty alleviation**, the United Nations World Summit on Sustainable Development 2002, the 2000 World Development Report published by the World Bank, the UN Millennium Declaration adopted in 2000², and the 1996 UN World Food Summit, all considered poverty alleviation as a central priority. While past development interventions in fisheries were often implicitly aimed at reducing poverty, most were not explicitly focused on improving the living conditions of the poor. Rather, they aimed to accelerate economic growth solely through technology and infrastructure development and through market-led economic policies. The lack of an explicit focus on poverty and the inequitable distributional impacts of development programmes may explain the ineffectiveness of many fishery development interventions. As specifically mentioned, the policy goal of poverty alleviation requires consideration of the distributional benefits arising from the sector. Furthermore, poverty alleviation encompasses the dual goals of both poverty *reduction* (i.e. wealth generation and capital accumulation lifting people out of poverty) and poverty *prevention* (i.e. reducing risks and

² The Millennium Declaration contains the commitment to halve, by the year 2015, the proportion of the world's population whose income is less than one dollar a day

increasing safety net functions to reduce vulnerability). Poverty alleviation is thus an inclusive term encompassing both poverty reduction and poverty prevention (and vulnerability reduction) which the strengthening and development of fisheries and aquaculture can address.

With regards to the third policy goal **food security**, at an international conference on the Sustainable Contribution of Fisheries to Food Supply held in Kyoto, Japan in 1995, the 95 participating states approved a Declaration and a Plan of Action to enhance the contribution of fisheries to human food supply. The 1996 World Food Summit stressed the connection between food security and the need for sustainable management of natural resources. The 2002 World Summit on Sustainable Development also focused on food security as a key issue and reiterated a global commitment to responsible fisheries.

The Government's guiding principles:

To achieve these three policy goals, MINFAL has to recognise the need to work in collaboration with other ministries to address broader concerns than those pertaining only the fisheries and aquaculture sectors. Most fishing communities (inland and coastal) are found to live in extreme poverty conditions and have limited access to resources, such as natural, financial, physical and human capital. This situation is exacerbated by exogenous factors such as water pollution, controversial management practices of inland and coastal fisheries and high costs of inputs for aquaculture activities, which, all combined, hinder the potential for livelihood diversification and overall quantities of fish produced. By simultaneously and adequately targeting the needs of poor communities, as well as those of the private sector and foreign markets and investors, fisheries and aquaculture can be changed into dynamic sectors to simultaneously achieve the Government's three policy goals of economic growth, poverty alleviation and food security.

In agreeing to these three policy goals and the implementation of the necessary strategy to achieve them, the Government of Pakistan has also committed itself to respect principles of:

- good governance, transparency in decision-making and finance management,
- fairness and equity,
- respect of international treaties, laws and commitments,
- participation of all groups and stakeholders, including women, in decision-making processes,
- sustainable environmental resource use, management and protection.

Roles of the three major stakeholder groups:

Government of Pakistan:

In addition, in its position of *facilitator* and *regulator*, the Government of Pakistan's role will be to:

- create a suitable and enabling environment to allow private sector initiatives to thrive while protecting the interests of the most vulnerable groups,
- establish the necessary institutions and enhance human capabilities to implement the present policy and support the overall development of the fisheries and aquaculture sectors,
- ensure coherence among measures adopted for the fisheries and aquaculture sectors with those in place in other sectors of the economy, in particular livestock and agriculture.

Private sector:

As a key partner to the Government in the development of the fisheries and aquaculture sectors, the private sector will:

increasing safety net functions to reduce vulnerability). Poverty alleviation is thus an inclusive term encompassing both poverty reduction and poverty prevention (and vulnerability reduction) which the strengthening and development of fisheries and aquaculture can address.

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Private sector:

As a key partner to the Government in the development of the fisheries and aquaculture sectors, the private sector will:

- shape the future growth of the fisheries, and in particular aquaculture, sectors, in terms of output and value,
- be sustainable *vectors* of economic and social development at community, district and Provincial/Areas levels.

Producers' organisations:

Supporting private sector's interests, producers' organisations will:

- build the necessary institutions for the representation of fishermen and fish farmers at the Provincial/Areas and national levels,
- be a force for collective access to knowledge, information and inputs
- influence the overall development of the fisheries and aquaculture sectors.

Key indicators of progress:

Key measurable indicators of progress towards the achievement of the three policy goals of national economic growth, poverty alleviation and food security, will include:

- higher per capita fish consumption
- improved fishers' and fish-farmers' incomes
- creation of well-paid employment in the fisheries and aquaculture sectors
- increased export earnings from aquatic products.

STRATEGY

TO INCREASE NATIONAL FISH SUPPLY BASED ON SUSTAINABLE PRODUCTION AND IMPROVED MARKETING OF AQUATIC PRODUCTS

To achieve the three policy goals outlined above, the Government's underlying *strategy* is to **increase national fish supply based on sustainable production and improved marketing of aquatic products.**

The targeted production growth rate for the overall sector (including capture and culture, from marine and inland areas) has been established at 10% per annum. This target corresponds to the extra production needed to increase fish consumption from 1.2kg to 5kg per capita per year. Although it is unlikely that capture fisheries can grow at such a pace, it is estimated that most of the production increases will come from aquaculture, from both inland and coastal areas.

Although the policy timeframe, in coherence with the country's development policies, has a long-term horizon to 2025, the strategy and its implementation plan (next section) have a timeframe of 10 years to kick-start fisheries and aquaculture activities and ensure that sustained levels of production are reached to achieve the 10% annual growth target envisaged. The present strategy (and its implementation plan) should be re-evaluated and, if need be, re-oriented, according to the progress made towards the policy goals and the needs of the sectors at the end of this period.

Four fundamental common elements:

The achievement of the strategy objective, to increase national fish supply based on sustainable production and improved marketing of aquatic products, rest first and foremost on the establishment of a **conducive environment** that will create suitable conditions for sustainable production and improved marketing to take place. This conducive environment will be created through the realisation of **four fundamental "common elements"**, or cross-cutting pillars supporting for the overall development of both fisheries and aquaculture. They are:

Common elements

- A. Strengthening of cross-sectoral collaborations.
- B. Institutional improvements and developments.
- C. Enhancement of research and development applied to fisheries and aquaculture
- D. Development of human resources and skills

"Common elements" refers to the fact that these four items underlie and are prerequisites to the realisation of the three technical strategy axes presented hereafter.

Three strategy axes:

Simultaneously, and within the conducive environment created by the realisation of the four fundamental common elements, sustainable production and improved marketing will be achieved through **three strategy axes** which are:

Strategy axes

- 1. Sustainable development of inland and coastal aquaculture production**
- 2. Sustainable increase in inland and marine capture fisheries production**
- 3. Resolving post-harvest issues**

Whilst common elements strive to create an enabling environment, the strategy axes relate to technical directions covering the development of inland and coastal aquaculture, marine and inland capture fisheries, and resolving of post-harvest issues. Strategy axis #3 deals specifically with the handling, storage, value-adding/processing, transport and marketing/commercialisation of captured and cultured species.

Figure 1 outlines the structure of the strategy and introduces the objectives of the Plan for the fulfilment of each axis and element.

Policy goals

1. Contribution to national economic growth, 2. poverty alleviation, 3. food security

Strategy objective

Increase national fish supply based on sustainable production and improved marketing of aquatic products

1. Sustainable development of aquaculture production

3. Resolving post-harvest issues of captured and cultured species

2. Sustainable increase in capture fisheries production

Strategy axes
(1a, 1b, 2a, 2b, 3)

1A – Strengthening of inland aquaculture production
 PO 1A.1: Develop high potential zones for inland aquaculture.
 PO 1A.2: Attract private sector investment in inland aquaculture production.
 PO 1A.3: Encourage the production of aquatic species able to compete on domestic and international markets.
 PO 1A.4: Ensure that environmental concerns are fully taken account in inland aquaculture development.

1B – Development of aquaculture in coastal areas
 PO 1B.1: Develop high potential zones for coastal aquaculture.
 PO 1B.2: Attract private sector investment in coastal aquaculture production.
 PO 1B.3: Facilitate the establishment of the culture of shrimp, finfish and mud crab in coastal areas of Sindh and Balochistan.
 PO 1B.4: Ensure that environmental concerns are fully taken account in coastal aquaculture development.

2A – Marine capture fisheries
 PO 2A.1: Rehabilitate marine aquatic habitats damaged by pollution and environmental degradation.
 PO 2A.2: Control over-exploitation of marine resources.
 PO 2A.3: Promote sustainable management of marine aquatic resources.
 PO 2A.4: Establish sustainable harvesting and utilisation of untapped marine resources.
 PO 2A.5: Promote fisherfolks' safety at sea.
 PO 2A.6: Promote sport fishing activities in coastal waters.

2B – Inland capture fisheries
 PO 2B.1: Rehabilitate inland aquatic habitats damaged by pollution and environmental degradation.
 PO 2B.2: Control over-exploitation of inland fisheries resources.
 PO 2B.3: Promote sustainable management of inland aquatic resources.
 PO 2B.4: Establish sustainable exploitation of untapped inland resources.
 PO 2B.5: Promote sport fishing activities in inland water bodies.

PO 3.1: Improve the handling and preservation of fish and aquatic products.
PO 3.2: Add value (transformation/processing) to aquatic products.
PO 3.3: Improve transportation of aquatic products.
PO 3.4: Improve commercialisation of aquatic products.
PO 3.5: Improve access of aquatic products to international markets.
PO 3.6: Improve dissemination of market and product information.

Outline of plan objectives (PO)

Strategy common elements

A, B, C, D)

A. Strengthening of cross-sectoral developments

PO A1: Establish strong partnerships to attract private investment in aquaculture (inland and coastal) and post-harvest activities
 PO A2: Increase coordination of multiple uses of freshwater (surface and underground)
 PO A3: Establish strong collaborative partnerships and processes to ensure adequate and sustainable water flows in major rivers and tributaries and re-establish balanced water regimes/uses and ecosystems
 PO A4: Support wide-ranging livelihood needs in fishing communities
 PO A5: Implement integrated coastal area management and reduce resource conflict occurrence and environmental degradation in coastal areas
 PO A6: Promote environmental conservation and adopt measures to prevent damage to aquatic biodiversity by pollution and environmental degradation

B. Institutional improvements and development within the fisheries and aquaculture sectors
 PO B1: Strengthen current fisheries institutions through a better demarcation of roles and responsibilities
 PO B2: Reform/organise Provincial/Areas and district authorities and existing institutions
 PO B3: Support the formation of producers' organisations
 PO B4: Study and reform the existing contract system for the exploitation of freshwater bodies
 PO B5: Address current fisheries and aquaculture legislation and regulations shortcomings
 PO B6: Recognise and promote the role of communities in fisheries management in coastal and inland areas

C. Development of human resources and skills
 PO C1: Provide fisheries and aquaculture training programmes and suitable training facilities
 PO C2: Improve extension services for the fisheries and aquaculture sectors

D. Enhancement of research and development applied to fisheries and aquaculture
 PO D1: Enhance support to and improve quality and relevance of research and development applied to fisheries and aquaculture
 PO D2: Develop and support technical research programmes
 PO D3: Increase the reliability of fisheries and aquaculture statistical data country-wide
 PO D4: Monitor and ensure that social, economic, marketing and institutional issues are adequately dealt with in relation to fisheries and aquaculture development

Outline of plan objectives (PO) (activities not detailed here)