


FISHERY COUNTRY PROFILE	Food and Agriculture Organization of the United Nations	FID/CP/ZAM
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RESUMEN INFORMATIVO SOBRE LA PESCA POR PAISES	Organización de las Naciones Unidas para la Agricultura y la Alimentación	December 2006

THE REPUBLIC OF ZAMBIA

GENERAL ECONOMIC DATA - December 2006

Area:	752 972 km ²
Water area:	145 194 km ²
Population (2005):	11.7 million
GDP current (2005):	\$US 7.3 billion
GDP per head (2005):	\$US 490
Agricultural GDP (2005):	18.6% of GDP
Fisheries GDP (2005):	2.26% of agricultural GDP

2. Fisheries Data

Date	Production	Imports	Exports	Total Supply	Per Caput Supply
2003	tonnes liveweight				kg/year
Fish for direct human consumption	69 501	1 776	1 807	69 468	6.4
Fish for animal feed and other purposes	-	-	-		

Estimated Employment (2004):	
(i) Primary sector (including aquaculture):	25 000
(ii) Secondary sector:	30 000

Gross value of fisheries output (2004):	\$US 316 million
Trade (2004):	
Value of fisheries imports:	\$US 4.9 million
Value of fisheries exports:	\$US 1.9 million

3. Fishery Sector Structure

Overall fishery sector

While agriculture is the most important source of livelihood, Zambia has 15 million hectares of water in the form of rivers, lakes and swamps, which provide the basis for extensive freshwater fisheries. Everyone in Zambia, irrespective of socio-economic status, enjoys fish. However, demand for domestic fish for consumption still outstrips production. Government is aware of the direct benefits of fish as a source of food of high nutritional value, especially for vulnerable groups, so the sector is not underrated. The sector, because of its mostly rural setting, continues to contribute significantly to rural development in terms of employment and income generation and reducing poverty. It is estimated that the sector supports more than 300 000 people deriving their livelihood directly as fishers and fish farmers, or indirectly as traders, processors and other service providers.

The precariousness of the food security situation in many parts of Zambia requires action to improve animal protein supply. Government efforts to increase fish production and enhance nutrition have targeted popularizing aquaculture and collective management of capture fisheries for sustainable resource utilization. Government assistance has helped to popularize pond culture techniques and has contributed significantly to the creation of an institutional and technological infrastructure in support of the growth of the industry. Liberal government policies have seen the private sector lead in the introduction of new production technologies and systems such as freshwater floating cages and production of ornamental fish in tanks.

However, the future of the sector now depends on raising the scale of operations. This will require attracting corporate investments in the sector to help realize the country's fisheries and aquaculture potential, by transforming the agricultural output mix, thus supporting the country's food needs and contributing significantly to growth of exports by removing socio-economic and institutional constraints facing the industry.

Inland subsector

Fishing in Zambia is carried out by two distinct groups: industrial operators and traditional or artisanal fishers. The industrial operators are found mainly on lakes Kariba and Tanganyika, where they operate large fishing vessels exploiting the pelagics. The artisanal fisheries, with more than 25 000 fishers, still dominate in terms of production output and in terms of labour. The bulk of fish is distributed by private and individual traders, of which a large number are women. Fisheries from a rural development point of view is an important open employment sector.

4. Catch Profile

The industrial fishery on lakes Kariba and Tanganyika exploits mostly the Clupeids (Sardines) *Limnothrissa miodon* and *Stolothrissa tanganicae*. Lake Kariba catches are about 98 percent *L. miodon*, with a small by-catch of *Tilapia*, *Momyrus*, *Synodontis*, *Serranochromis*, *Hydrocyon* and other Characid species. The fishery on Lake Tanganyika is shifting from the Clupeids to *Lates* species (*Lates angustifrons*, *L. microlepis* and *L. mariae*) and *Luciolates* spp.

Representatives of *Tilapia*, *Serranochromis* and other cichlids are common in all catches. The main species of commercial value in the various Zambian markets (listed in order of relative abundance in terms of catch and market value) are Bangweulu (Citharinidae, *Schilbe* sp., Bagridae, *Hydrocyon*); Itezhi-tezhi (Claridae, Momyrids, Schilbeidae, other Characids); Kafue (Claridae, *Schilbe* sp.); Lukanga (Citharinidae, Momyridae, *Synodontis* sp.); Lusiwashi (Other Cichlids); Mweru-Luapula (Bagridae, Momyridae, *Hydrocyon*); and Upper Zambezi (*Schilbe*, Claridae, *Hydrocyon*, Momyridae, *Synodontis* sp.).

5. Fishery Areas

Zambia has 15 million hectares of water in form of rivers, lakes and swamps. The fisheries of Zambia are classified into major and minor fisheries (which include fisheries of small water bodies). There are 11 main fisheries; four belong to the Congo River basin

and seven to the Zambezi River basin. The fisheries in the Congo basin include Bangweulu, Mweru-Luapula, Mweru Wantipa and Tanganyika. Kafue, Kariba, Lukanga, Upper Zambezi, Lower Zambezi, Itezhi-tezhi and Lusiwashii belong to the Zambezi basin. In 2000, the Congo basin fisheries accounted for 43 percent of annual production.

6. Fishing Production Means

Industrial fishing activities are limited to Lake Tanganyika and Kariba, and are associated with production of kapenta. In the years 1999 -2004, the annual commercial fish production was about 70000 t. About 30 000 artisanal fishers account for 85 percent of catches, while the less than 100 industrial producers on Lakes Tanganyika and Kariba account for 15 percent of production.

The long distance between catching and consumption areas and limited cold storage and transport facilities means that 65 percent of production is dried, most of which is kapenta, smoked or simply sun-dried, and rarely salted breams.

7. Main Resources

The major basins in Zambia are the Zambezi, Lake Mweru Wantipa catchment, Luapula and Lake Tanganyika. The Luapula Basin consists of the Chambeshi river, Bangweulu lakes and swamps complex, Luapula river and Lake Mweru. The Zambezi basin is the largest, comprising Luangwa river, Lukanga swamps, Kafue river, Upper Zambezi, Lake Kariba and Lower Zambezi. The Lake Tanganyika basin is the smallest, with fish fauna of Nilotic affinities. The Lake Mweru Wantipa catchment could be considered as stand alone as it is an internal drainage system with no outlet.

The Bangweulu lakes and swamps complex is made up of six principal lakes and vast fringing papyrus flood plain swamps, and is home to 87 recorded species of fish. Of these, 33 are of commercial importance. The fishery is dominated by catches of the Clupeid *Angraulicypris* spp., Cichlids and Characids (most notably *Alestes macrophthalmus*).

Lake Itezhi-Tezhi and the Kafue flood plains fish stocks are heavily exploited in the inshore lake areas, with the Characid *Brycinus lateralis* and the Schilbeid *Schilbe mystus* most abundant in the catches. The Kafue flood plain and its extension of the Lukanga swamps is a Cichlid *Tilapia* spp. fishery, although of late the non-indigenous species *Oreochromis niloticus* has infested the flood plain, having been introduced inadvertently by the sugar plantation fish farm. The consequences of this introduction still need to be assessed.

Kariba fishery has two types of fishery: an artisanal gillnet fishery based on exploitation of fish species originally of the Zambezi River before formation of the lacustrine environment; and a commercial fishery based on the introduced Clupeid (kapenta).

Lake Mweru-Luapula was once famous for its highly valued Cyprinid *Labeo altivelis* (*mpumbu*) which is now rare due to overfishing and poor fishing practices. The poor performance of the bream fishery led to a fishery based on exploitation of the Clupeid *Microthrissa moeruensis* (*chisense*), which is now the major resource.

Lake Mweru Wantipa has a collapsed bream fishery due to intensive fishing using beach seines, and as a result there is significant catch of juvenile Cichlids (breams) causing further decrease in the bream stocks. *Synodontis* spp. are now providing better catches. The department carried out a restocking exercise with bream to re-establish the bream fishery.

Lake Tanganyika has over 252 known species, of which 72 percent are endemic to the lake. Of all species present, 90 percent belong to the Cichlid family and 99 percent of the cichlids are endemic to Lake Tanganyika. The lake supports an intensive artisanal inshore fishery and also a commercial fishery comprising 28 purse seines exploiting pelagic species of kapenta (Clupeids), *Limnothrissa miodon* and *Stolothrissa tanganicae*, and a Latid, *Luciolates starppersii* (*bukabuka*).

Upper Zambezi consists of the Barotse Flood Plains, with an area of 700 km². Cichlids are the principal stocks and resources exploited.

8. Management Applied to Main Fisheries

The Department of Fisheries in the Ministry of Agriculture and Cooperatives is mandated through the Fisheries Act, Cap 200 of the Laws of Zambia, to manage the fisheries resources of the country. In order to ensure the sustainable utilization of the fisheries resources in line with the provisions of the Act, the following control measures are employed:

- Annual Fishing Closure, from 1 December to 28 February the following year. This coincides with the rainy season and was introduced to protect the breeding of the commercially preferred species (mostly *Tilapia* species) whose breeding peaks in this period. The flooded plains provide ideal breeding grounds and nurseries for the juveniles.

- Mesh size restriction of not less than 50 mm for all stationary gillnets. This restriction allows for new recruits to attain a minimum size before being exploited.
- Introduction of permanently closed areas as sanctuaries and breeding grounds for commercially important species.
- A complete ban on use of some destructive fishing methods such as forcefully driving of fish into set nets (*kutumpula*), using explosives, use of weirs targeting migratory fish, and beach seine nets operated in shallow waters, which incidentally destroy fish nests and foul the water by stirring up silt.

Zambian fisheries are dominated by artisanal fishers whose fishing operations are predominantly gillnetting using craft made of planks or fibreglass. Dugout canoes still feature in fishing operations on almost all water bodies.

No restrictions are imposed on the number of craft or nets that an artisanal fisher can own. Despite being in a ministry where farmers enjoy a number of incentives, such as tax relief on inputs and equipment for production, the same does not apply to the fisheries sector.

9. Recreational Subsector

The recreational sector is predominantly tourist-oriented and is based on the exploitation of the Tiger fish (*Hydrocynus vittatus*). Organization of this subsector is spearheaded by the Zambia Sport Fishing Association (ZSFA). Destinations include the Kafue, Luangwa and Zambezi rivers, and lakes Bangweulu, Kariba and Tanganyika.

10. Aquaculture Subsector

Zambia is a country richly endowed with natural resources ideally suited to aquaculture production. Aquaculture promotion in Zambia has a long history, dating back over forty years. Considerable work by the Department of Fisheries in cooperation with international assistance agencies and NGOs in promoting aquaculture practices in the country has resulted in some 6 000 small-scale farmers now operating over 13 000 fish ponds throughout the country. At the same time, 16 large commercial fish farmers have taken up the activity in the Copper belt, Lusaka and Southern Provinces, where ideal conditions for such business exist. The subsector produces about 5 000 t/yr of fish. Of this, 75 percent comes from small-scale aquaculture, while commercial fish farmers produce the other 25 percent. Aquaculture is expanding in all nine provinces of the country, and as a result, Zambia is now one of the largest aquaculture producers in sub-Saharan Africa.

Aquaculture systems range from extensive to intensive systems, and include both multispecies culture and monoculture. There are three levels of fish farmers: small-scale, emergent (smallholder), and commercial. Small-scale fish farmers rely on family labour and practise extensive culture. Emergent fish farmers have income generation from the element of food security for their households. They purchase some inputs and practise integration, i.e. combine fish farming, crops and livestock, and they may use family or hired labour for various tasks. Commercial fish farming is usually very large, intensive and involves large investments. It is market oriented and may include processing for export.

The commonly used species in aquaculture include the Three-spotted bream (*Oreochromis andersonii*), the Green-headed bream (*Oreochromis macrochir*), and the Red-breasted bream (*Tilapia rendalli*). The Kafue River strain of the Three-spotted bream is the most commonly farmed species in the commercial sector. Other species include the common carp, the Nile tilapia and freshwater crayfish.

Technical skills are still lacking among most small-scale fish farmers in terms of fish husbandry practices and pond construction. They also lack capital to improve and increase their investment in aquaculture, while the Department of Fisheries is constrained by limited funding and capacity (training and staff shortages) from providing effective extension support.

Long standing constraints in aquaculture include: inadequate extension services, lack of comprehensive training packages and materials, chronic shortages of quality fish seed and fingerlings, high cost of fish feed, and poor marketing support.

There are continuing government efforts to promote aquaculture as it believes that exploitation of opportunities in aquaculture will reduce pressure on capture fisheries and provide opportunities for increased incomes for the rural poor. Further, the development of commercial-scale aquaculture will contribute positively to economic growth.

11. Post-Harvest Use

Fish utilization

Almost all fish produced in the country is intended for human consumption. Fish is processed and distributed in various forms: fresh, salted, smoke-dried, sun-dried, frozen and filleted. There is also processing for ornamental purposes. Rarely is any fish processed into fishmeal for the production of animal feed.

Infrastructure relates to the processing operation. See Table 1.

Table 1. Infrastructure associated with particular processing operations in Zambia

Process	Infrastructure/Equipment
Fresh fish	Ice plants, packaging factories, transport receptacles (cooler boxes)
Salted fish	Salt production and packaging materials factories, drying racks
Smoke-dried fish	Smoking kilns, drying racks, packaging
Frozen fish	Freezing plants, refrigeration, transport
Filleted fish	Freezing, packaging, processing equipment, spices
Sun-dried fish	Drying racks, plastic sheet manufacturers, wire mesh manufactures
Live (Ornamental)	Holding tanks, oxygen cylinders and aeration, plastic bags, drugs, transport (land/air), pipes and concrete producer tanks

12. Fish Markets

Market facilitation operations are still undeveloped in Zambia due to orientation of production to domestic demand. In fact, the domestic fish market is still a sellers' market and therefore requires little additional effort. Since health and safety requirements for exports to regional and other fish markets are not restrictive, anyone with cold storage, packaging and transportation facilities can export.

Nationally, valuable markets are found in Central, Copper Belt, Eastern and Lusaka provinces, as these have huge, dense populations.

Exports in limited quantities are usually carried out by individuals for target markets. Regional export markets are mostly for consumption, while international markets trade in ornamental species. Regional destination markets include Botswana, Democratic Republic of Congo, Republic of South Africa and Zimbabwe. At international level, and specific to live fish for ornamental purposes, the common destinations are Belgium, Canada, Denmark, UK, Germany, Russia, Sweden and the United States of America.

13. Fishery Sector Performance

Annual capture fisheries output per person has declined from 11.4 kg in the 1970s to 8 kg in the 1990s, and to 6.4 kg in 2003. Overall increases in total fish production are less than increases in population. Social circumstances, such as periodic outbreaks of cholera in production areas and seasonal restrictions, affect production and market conditions. Even though annual fish production increased from 40 000 t/yr in the late 1960s to over 62 000 t in 2000, it has consistently failed to exceed 70 000 t/yr, even in favourable years. At the same time, per capita fish production has dropped 50 percent. Drastic declines in fish catches per unit effort indicate that the fish stocks either are fully- or overexploited. In order to increase annual per capita fish production from the current <6 kg to the target of 12 kg, technology and management of capture fisheries must change to support such an increase. In the absence of such improvement, and with little likelihood of such a change in the near future, significant gains in fish production can only come from fish farming. Expansion of fish farming will supplement production of natural fisheries, reduce pressure on natural stocks and contribute to improved food production and nutrition.

14. Economic Role of Fisheries in the National Economy

The contribution to GDP of fisheries and aquaculture as a subsector of the agricultural sector has averaged 3 percent out of the

18 percent share that agriculture, forestry and fishing contribute to GDP. This estimate is largely based on the contribution from capture fisheries, as production from aquaculture is not regularly reported.

Attainment of self-sufficiency in household food security, increased number of people employed by the sector and a reduction in poverty levels is indicated by people in fishery areas being able to purchase luxury goods (i.e. bicycles, radios), willingness to pay levies and taxes for social amenities and improved housing indicate the economic role of fisheries.

15. Demand and Supply

Population density, supplies and income determine the demand for marketed fish. The current estimates for annual fish production from capture fisheries ranges between 60 000 and 70 000 t, with an estimated 5 000 produced through aquaculture. The national demand for fish is conservatively estimated at 120 000 t/yr, and this gap between supply and demand is foreseen to increase further with population growth. The country has the potential to produce more fish on a sustainable basis with the development of aquaculture and rational management of capture fisheries.

16. Trade

The unsatisfied demand for fish in the local market has restricted the amounts of fish that can be exported. The major import and export flows are mainly of the fresh water sardines *Limnothrissa* spp. and *Stolothrissa* spp. (kapenta), whereas smoked and fresh *Lates stappersi* and smoked *Clarias* species are heavily traded in the region. Greater participation of fisheries in the foreign exchange earnings is only found in the ornamental fish trade. However, data to ascertain the extent of contribution to national earnings is scanty as only rough estimates exist of the monetary value of the present fish trade.

17. Food Security

Fish is an important food item in the Zambian diet, accounting for up to 55 percent of the national dietary animal protein. The importance of fish in household food expenditure shows that with increasing levels of poverty the proportion of fish in household food expenditure also increases.

Rural households account for 47 percent of fish consumption, followed by urban poor households (30 percent). However, in terms of agricultural and non-agricultural households, the latter demonstrate more than 50 percent of household expenditures for fish. Urban dwellers generally consume more fish than people in rural areas. Moreover, within the urban areas, the low-income stratum spends a greater proportion of household expenditure on fish because fish provides the cheapest source of animal protein. Everyone, irrespective of socio-economic status, enjoys fish in Zambia; there is therefore a strong recognition by government that aquaculture can and should play an important role in terms of food security, nutrition and income generation.

18. Employment

Fish production is an important occupation in rural Zambia, with about 25 000 artisanal fishers and 30 000 others active in fish processing and trading, all estimated to derive their livelihood directly from fishing. The fishing industry in Zambia is categorized as Artisanal or Industrial. These sectors either directly or indirectly offer employment at various levels, improving the local economy, especially in rural areas. Estimates are that a total of 300 000 people benefit from fishing or ancillary activities. Among artisanal fishers, it is common to find fishing fleets that are owned by absentee landlords who purchase the fishing equipment and boats and then engage workers to do the fishing. There are only 64 industrial fishers operating on the major lakes: Kariba (36) and Tanganyika (28).

Artisan fishers use simple dugout canoes or fibre glass banana boats with outboard engines, while the operations of industrial fishers involve larger vessels operated by inboard engines, with better onboard storage facilities.

Main areas of employment associated with the fishery sector are boat building and repair, net manufacturing, fish processing, fuelwood supply, power supply, transportation and marine workshops.

Direct employment generated by fish farming is approximately two persons per hectare.

19. Rural Development

It is a well known fact that good fish catches coupled with sound management practices coupled with a reliable supply of inputs (seller to buyer) within operational areas will curb migrations of fishers away from fishing. Government policy is aimed at engaging resource users in the management and rational exploitation of the fish resources. Social services are being brought into the fishing communities while encouraging fisher village groupings.

20. Fishery Sector Development

Constraints

The problems in the sector fall under five categories: those faced by small-scale fishers, problems faced by small-scale fish farmers, those encountered by commercial or large-scale fishers, those faced by large-scale fish farmers, and constraints faced by the government in rational management of capture fisheries and promotion of aquaculture.

Across the sector, problems include:

- There is inadequate funding for, and re-investment in, the sector despite the sector's ability to generate its own resources. This is due to poor and uncoordinated systems of collection and utilization of revenue from fishing levies and licences.
- There has been unlimited entry into fisheries. While fishing in a particular fishery is regulated by way of licensing, the number of licences issued is not limited. This has led to reduction in catch per unit effort for preferred fish species, which in turn has led to a decline in efficiency in capture fisheries, which is a major cause of declining incomes among small-scale fishers.
- Dissemination of information on production techniques and processing technologies to small-scale fish farmers and fishers has been of limited effectiveness. This has been due to poor evaluation of target groups and inadequate extension coverage.
- There is limited development in aquaculture owing to inadequate investment. With declining incomes in capture fisheries resulting from the depletion of stocks of preferred fish species and sizes, opportunities for growth in the sector will come from increased and coordinated investment in aquaculture.
- Non-availability of reliable sector information (statistics) severely limits the scope of interventions in the regulation and development of the sector. Information is insufficient on parameters such as statistics on fish production levels, number of stocked and un-stocked ponds, pond yield, fish stocks, levels of exploitation and market data.

There are other crosscutting issues for consideration relating to health (HIV/AIDS and general sanitation) among fishing communities, the processing chain to add value to fishery products, limited competition among service providers to the fishing industry, and development of marketing (i.e. cold chain).

21. Development Prospects and Strategies

The overall objective of the fisheries and aquaculture sector is to contribute to poverty reduction and economic growth through sustainable utilization of fisheries resources and development of aquaculture. In order to achieve this objective, and in view of sectoral problems and strengths identified, possible interventions are:

- Establishing an efficient and effective system of collection and utilization of revenue from fish and fishing gear levies, fishing licences and other related fees.
- Developing stakeholder partnerships towards sustainable and efficiently managed exploitation of fish and other valuable aquatic resources in natural water bodies. This would ensure efficient and effective regulation of fishing activities in proportion or relation to existing stocks of fish resources in all fishery areas.
- Identification and implementation of fishery development strategies through enhancements (stocking and re-stocking) of both indigenous and suitable exotic species.
- Development of aquaculture through intensified promotion of available aquaculture opportunities. While aquaculture offers opportunities for increased incomes and food among low-income earners, its exploitation has remained minimal. This is largely attributed to inadequate sensitization. Further, as a result of inadequate promotion of the country's aquaculture opportunities, there has been little commercial investment in the subsector.
- Regular generation and provision of demand-driven information in both capture and culture fisheries. In effect, research to generate information should be demand driven as opposed to the current open-ended approach to information

generation. Experience has shown that information usually required by stakeholders includes but is not limited to fish production, number of fishers and fishing boats in particular fisheries, number and type of fishing gear, number of stocked and unstocked fish ponds, average pond yield, fish stocks, and levels of exploitation.

In order to be more focused and achieve maximum benefits from the interventions identified, these could functionally be divided into three components:

- a Fisheries Management component focusing on the management and regulation of exploitation of fish and aquatic resources in natural water bodies;
- an aquaculture development component emphasizing the development of both commercial and small-scale aquaculture; and
- a research, management and coordination component to support and facilitate the implementation of the other two components.

22. Research

The Department of Fisheries is responsible for provision of research services on both capture fisheries and fish farming. Each major fishery has a research station whose aim is to assess and analyse through quantitative methods and population models the level of exploitation of fish stocks. Fisheries research on floodplain river systems focuses on needs for resource protection and enhancement. Other emerging research areas include the ecology of exploited species, fisheries ecology, bio-economics, fisheries economics, limnology, fishing gear, fishing technology, systematics and fisheries law. Fisheries research in Zambia has mainly dealt with the two areas of fish biology and ecology.

Zambia has no major fisheries research projects. The last project was inaugurated in 1991, *Research for the Management of the Fisheries of Lake Tanganyika*, which was financed by FINNIDA and implemented by FAO. The project involved all the Lake Tanganyika riparian states.

Nevertheless, there has been a lot of collaborative work involving research grants with:

- Kyoto University, Japan, on the development of underwater parks in Lake Tanganyika.
- Graz University, Belgium, on Ornamentals of Lake Tanganyika.
- African Wildlife Foundation (AWF) Biodiversity Studies in the Upper Zambezi fishery.
- WorldFish Center on Socio-economic studies of the Fisheries of the Zambezi Basin.

The department has 19 aquaculture stations throughout the country, 5 of which are aquaculture research stations. The other centres are for extension, training demonstrations and production of fingerlings.

Aquaculture research conducted in Zambia has largely been applied research confined to conducting trials on methodologies developed elsewhere and how best to adapt those to local conditions.

23. Education

Training in fisheries aims at meeting the aspirations of the industry and to provide skilled workers capable of participating in development programmes. The Department of Fisheries provides training at lower levels.

Fisheries education in tertiary institutions of learning is new in the country and was introduced in the early 1990s, but without the necessary financial support and requisite infrastructure. There are no formal arrangements in which training in tertiary institutions outside the Ministry of Agriculture and Co-operatives are linked to development needs. The relevance of training programmes would be more effective with greater stakeholder involvement in fisheries training and planning.

24. Foreign Aid

A number of donors have been active in assisting development in the sector. These include the Japanese Cooperation Agency

(JICA), the United States Agency for International Development (USAID), the Norwegian Agency for Development (NORAD), the Swedish Development Agency (SIDA), the Finnish Development Agency (FINNIDA), the United Nations Development Programme (UNDP), SNV and the Food and Agriculture Organization of the United Nations (FAO).

Two projects are in the pipeline for implementation in 2007:

- ***Programme for Luapula Agricultural and Rural Development*** (PLARD). The overall objective is to contribute to the development of an efficient, competitive and sustainable agricultural and rural sector, which ensures increased income and food security for small-scale rural households in Luapula province. The programme has a fisheries and aquaculture component whose purpose will be to look into improved and sustainable income and food security through fisheries and aquaculture. Project duration 4 years. Institutions of the Ministry of Agriculture and provincial Local Government Authorities, CBOs and NGOs will be working with the beneficiaries.
- ***Project to Support the Lake Tanganyika Integrated Regional Management Programme*** (PRODAP). This is a regional programme involving the four riparian states: Burundi, Democratic Republic of Congo, Tanzania and Zambia. The programme goal is to contribute to reducing poverty in the Lake Tanganyika Basin. The Fisheries component will focus on institutional capacity building through strengthening capacity of the Lake Tanganyika Management Authority, Fisheries Administrations and communication systems, and fisheries development and environmental protection. The project has a five-year duration, with the involvement of relevant ministries for natural resources management, fisheries, health, local government and infrastructure development.

25. Fishery Sector Institutions

The fisheries and aquaculture sector consists of two branches: the Fisheries Extension and Management Branch, and the Fisheries Research Branch. The two branches are mandated to implement fisheries and aquaculture development programmes. There are also a number of private sector participants – commercial or large-scale fish farmers, fishers and traders, and a number of small-scale fishers, fish farmers and traders.

Community-based fisheries management programmes are being assisted through organized fisher groups that participate in conservation and education programmes among community members.

The National Aquaculture Association of Zambia (NAAZ), an affiliate of the Zambia National Farmers Union (ZNFU), intends to take advantage of agricultural programmes such as the government's national irrigation projects aimed at increasing the efficient use of water bodies through fish farming.

26. General Legal Framework

Fisheries legislation has had a comparatively slow evolution as it does not conform to current changes in policy and traditions of the local communities. Legislation is old and inappropriate to current thinking for the management and development of fisheries, as it has not changed from the colonial era.

- **Fisheries Conservation Ordinance** of 1962, Chapter 263 of the Laws of Northern Rhodesia, an Act designed to facilitate administration of a territory by a Governor, highly centralized, no stakeholder participation in formulation and implementation of fishery management regulations with little or no flexibility for the devolution of fishery management authority to riparian communities in fishery areas.
- **Fisheries Act** of 1974, Chapter 314 of the Laws of Zambia, now Chapter 200, designed to repeal the Fisheries Ordinance has no fundamental differences from both the legal and fishery management viewpoints. The Fisheries Act places fishery management responsibilities in the national government, with no provisions for community involvement.
- **Draft Fisheries Bill** is a revision of the Zambian Fishery legislation, whose main features include:
 - devolution of fishery management responsibilities to local communities in fishery areas;
 - participation of stakeholders in the formulation and enforcement of fishery management regulations;
 - aquaculture development in fisheries legislation;

- conservation of aquatic habitat and fauna;
- facilitation of improved management and conservation of fisheries in accordance with the Code of Conduct for Responsible Fisheries;
- cooperation on shared and transboundary fisheries; and
- fish definition broadened to include both shell- and finfish.

The Main Fishery Regulations can be categorized in two sets:

- Licences and control of fishing
 - Fishing licence permits fishing with authorization of Fisheries Director.
 - Prohibited fishing equipment, restricts use of net sizes and draw nets in prescribed areas.
 - Prohibited fishing methods, regulates use of destructive fishing practices.
 - Prohibited fishing areas, no fishing in protected sanctuaries.
 - Restrictions on issue of licences, disqualification of applicants.
- General
 - Register of licences, record keeping.
 - Partnerships, licence status and change in composition of partnership.
 - Display of licences in prominent position in places of business.
 - Use of pesticides as means of curing, preserving, processing or storing fish.