

PROVINCIAL AQUACULTURE DEVELOPMENT PROJECT



LAO PDR

SUPPORT FOR TECHNICAL SERVICES

Provincial Aquaculture Development Project Phase II Formulation Mission

Based on the work of

Hans Guttman

FAO Consultant

28th July – 18th August

THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Bangkok 2000

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The Food and Agriculture Organization is greatly indebted to the organizations and individuals who assisted in the implementation of the project by providing information, advice and facilities.

Introduction

This consultancy was carried out within the scope of the “Provincial Aquaculture Development Project” LAO/97/007, to develop a phase II project proposal for potential funding by United Nations Development Program .

This consultancy mission report consists of two principle sections; the Phase II proposal document for consideration by UNDP and an overview document of the role of small-scale aquaculture in rural Lao livelihoods.

The Phase II project proposal is principally intended for UNDP’s consideration for support and therefore reflects UNDP’s development objectives. The purpose of this proposal for use with alternative donors, is as a starting point for dialogue in the funding process. The identification of potential alternative sources of funding for the second phase is to be pursued by UNDP, FAO and the Project, based on discussions initiated during this consultancy mission.

ITINERARY - Phase II project Formulation Mission

Date	AM	PM
28 th July	09.30 Arrive Vientiane 10.00 Meet project staff	14.00 Meet FAOR
29 th July		
30 th July		
31 st July	09.00 Meet Mr. Singkham Phonvisay, DG DLF	
1 st August	09.00 Meet Mr. Nagano 1 st Secretary , Japanese Embassy & Ms. Mayuri Hirata, Project formulation Advisor, JICA & Mr. Morimoto JICA fisheries Expert to DLF	14.00 Dr. Bountheuang Mounlasy – DG OIC Committee for Investment & Co- operation (CIC), Prime Minister’s Office. 15.00 Mr. Phouvieng Ladtsavong, Permanent Secretary, Ministry of Agriculture & Forestry (MAF)
2 nd August		14.00 Mr. Gana Fofang, Deputy Resident Representative, UNDP Mr. Stefan Islandi ARR Rural Development Division, UNDP
3 rd August	09.00 Mr. Ole Pedersen, DANIDA & Mr. Henrik Nilsson, DANIDA Watershed Project	15.00 Mr. Paul Turner, Representative, Asian Development Bank (ADB) (Novotel)
4 th August	08.30 Mr. Prechiesen, GTZ co- ordinator, German Embassy 10.00 Mr. Jim Archer, Programme officer, AusAID, AusAID office.	15.00 Mr. Nick Innes-Taylor, Co-ordinator, Regional development Co-operation, Southern Lao PDR
5 th August		
6 th August		
7 th August		14.00 Representative, SIDA, Swedish Embassy, Ms. Lisbet Bostrand
8 th August	11.00 United nations Drug Control Project, assistant representative – Ms. Anna DeBoer, Programme co- ordinator, Ms. Muriel Schimmer	
9 th August		14.00 Mr. Gunther Kohl, CTA, GTZ Food Security Project, M. Singh, Luang Namtha Province, Ms. Sylvia Kaufmann, Nutritionist
10 th August	09.00 Meet Mr. Singkham Phonvisay, DG DLF	
11 th August		
12 th August		
13 th August		
14 th August		
15 th August		15.00 Presentation and Briefing meeting of mission findings to : UNDP, FAOR, Danida, Japanese Embassy, ADB, UNDCP , MAF, DLF.
16 th August		
17 th August	10.30 Depart Vientiane	13.30 FAO Regional Office – Dr. S.B. Singh, (Regional Representative)

		15.00 Mr. Pirkka Tapiola (Deputy Head of Mission) Finnish Embassy
18 th August	<p>08.00 Short briefing Ms. Felicia Zaengel, CPO</p> <p>09.00 Mr. Walter Bernyck, Second Secretary (Development), Canadian Embassy</p> <p>10.00 Mr. Peter West (Deputy Head of Mission), Mr. Alan Shaw (Third secretary, economic/development), British Embassy</p> <p>11.00 Mr. Luca Oriani Vieyra (First Secretary), Mr. Gareth Williams (Assistant to the Head of Delegation), European Union</p>	14.00 Dr. Carlo Alberto Baracchi Tua di Paullo (Counsellor), Italian Embassy

TERMS OF REFERENCE – Phase II Formulation mission

1. OBJECTIVES OF THE FORMULATION MISSION

The principal objective of the mission is the formulation of a project proposal that builds on the achievements of LAO/97/007, that can be submitted to UNDP or other donor organizations for consideration for support.

2. DOCUMENTS

- * “Poverty Report 2000” (UNDP, 2000)
- * “The Government’s Strategic Vision for the Agriculture Sector” (MAF, 1999)
- * LAO/97/007 Project document.
- * “LAO/97/007 Mid-term Evaluation Mission Report”, September 1999.
- * LAO/97/007 Progress Reports and Annual Reports (1997-2000).
- * LAO/97/007 logical framework
- * LAO/97/007 reporting database
- * Preliminary information from LAO/97/007 impact evaluations

3. TASKS OF THE MISSION

- * Consult with DLF & MAF regarding current strategies and requirements for rural development and the aquatic resources sector.
- * Identify areas where LAO/97/007 may broaden its scope in-line with the strategic development objectives UNDP and other donors.
- * Summarize the role of small-scale rural aquaculture and other aquatic resource related activities in rural subsistence livelihoods.
- * Outline programme components (this may include: strengthening capacity in aquatic resource management, information systems, post-harvest processing, marketing, credit facilitation).
- * Identify potential collaborating government institutions for programme components
- * Identify successful interventions and use them as a basis for further activities.
- * Identify management issues relating to NEX modality and propose specific training inputs
- * Identify appropriate provinces/locations for the proposed components
- * Identify & specify requirements for technical support from FAO.
- * Identify & specify requirements for United Nations Volunteers.

4. OUTPUTS

On the basis of these activities, prepare a draft project proposal following the FAO project format. The draft proposal should include the following sections:

1. General Background
2. Project Rationale/Justification
3. A logical framework containing the potential components, which should include the following sections: (a) Development Objective, (b) Immediate Objectives (c) Outputs and Activities, (d) Objectively Verifiable Indicators (e) Means of Verification, (f) Risks and assumptions,
4. Inputs
5. Prior Obligations and Prerequisites
6. Project Reporting, Reviews and Evaluation
7. Budget, and
8. Further specifications as appropriate (e.g. requirement & TOR for CTA, UNV, consultants as appropriate, equipment specifications, training courses, collaborating agencies)

5. FIELD VISITS

Vientiane & Provincial project locations as the consultant and project management team consider necessary to understand the process of LAO/97/007 implementation and activities

6. TIME PERIOD

A total of 3 weeks during July-August 2000.

7. REPORTING

Full report including a complete draft project document & logical framework following FAO project format submitted to both UNDP & FAO within two weeks of completion of the mission.



Development of Fisheries Support Services for Aquatic Resources Management in the Lao PDR

Draft Project Proposal
Provincial Aquaculture Development Project Phase II

Hans Guttman
FAO Consultant
28th July – 18th August

THE FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Bangkok 2000

Development of Fisheries Support Services

Sector & subsector:	Agriculture, Forestry and Fisheries; Fisheries
Government sector & subsector:	Agriculture-Forestry Fisheries; Livestock and Fisheries
Implementing Agency:	Food and Agriculture Organization of the United Nations
Executing agency:	Livestock & Fisheries Development Division Department of Livestock & Fisheries Ministry of Agriculture & Forestry

Estimated Starting date	: January 2001
Project site	: Vientiane and 5 Provinces, Lao PDR
Duration	: 3 Years
Government inputs	
(in kind) Kip	: 468 million
(in cash) Kip	: ?? million
Donor inputs	: US \$ 1.3 million

Brief description: The development objective of the project will be to contribute to *Enhanced food self sufficiency, improved nutrition and increased income generation capability among rural poor*. The immediate objective is *Improved capacity of the government to promote sustainable aquatic resources use for poverty alleviation by rural communities and individual households*. The project is a capacity building initiative that addresses issues of better governance through assisting the government to implement a decentralised support service for the agriculture sector.

Expected outputs are (i) improved capacity in planning and management among participating government staff, (ii) improved flow of information and communication between village, district, province and central level; affecting policy and procedures in the livestock and fisheries sub-sector, (iii) improved monitoring and reporting capacity of province and district level agencies, (iv) improved capacity among district staff to identify and assess needs and opportunities in aquatic resources management in target villages, (v) Identification and development of sustainable aquatic resources management mechanisms and production technologies benefiting the rural poor, (vi) Identification and development of cash income generating activities based on aquatic animal production benefiting rural poor, and (vii) Improved fish production technologies and management options developed and implemented by participating communities and individual households.

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1 General Background

The majority of the populations of Southeast Asia are dependent upon the rural environment for their livelihoods. This dependence on the natural resource base coupled with a high population growth puts pressure on the natural resources in the region, which in turn makes rural households vulnerable to variability and negative impacts in the environment. The Lao PDR is among the poorest nations of the world depending heavily on its natural resources for the livelihoods of its people. Over 83% of the population lives in rural areas, and of these, over half are without access to a road (LECS 2, 1999). In 1995, the World Bank's indicator for poverty in Lao PDR revealed a poverty incidence of 53% in rural Lao PDR (UN 1996).

It is clear that, although future development will lead to increasing urbanisation, the majority of the population currently remains highly dependent on the natural resources around them. The issues of food security and income generation for the poorer sections of the rural inhabitants in the Lao PDR must therefore remain a high priority for development assistance.

1.1 Food security and poverty alleviation in rural Lao PDR

Fish¹ is a major source of animal protein and, as such, makes a key contribution to food security in the Lao PDR. Together with rice, it constitutes the nutritional basis for most rural households. The importance of small-scale natural aquatic resources stems from their accessibility to all sections of the population and the fact that diverse natural stocks, including many small species, which are often eaten whole, provide high levels of micronutrients and vitamins. In many rural areas of Lao PDR, fish consumption accounts for more than 50% of animal protein consumption (Table 1), as such, fish is a crucial component of the diets of rural households in Lao PDR. Consumption of fish varies greatly and survey averages ranges from 15 to over 57 kg/person/year.

Table 1: Consumption of aquatic animals in rural Lao PDR.

Province	Aquatic products as estimate of total protein ^a	Total animal products (kg/person/year)	Total aquatic products (kg/person/year)	Source
Average for 5 Provinces	37.0%	58.6	21.7	FAO PADP 1998
Oudomxay	26.6%	64.5	17.1	
Savannakhet	40.7%	59.6	24.2	
Sayaboury	37.3%	40.5	15.1	
Sekong	57.1%	37.2	21.2	
Xieng Khouang	39.6%	64.6	26.8	
Nam Ngum Reservoir	60.6%	94.2	57.1	MRC 1999a
Luang Pabang Province	42.2%	66.3	28.0	MRC 1999b
Savannakhet		19		Garaway 1999
Nationwide ^b		15		LECS 2 1999

^a Measured as either total animal product or % protein.

^b Extrapolated value from expenditure survey.

¹ In this document the term “fish” is taken to include other aquatic organisms utilised by the rural households such as shrimp, snails, crabs, frogs, etc.

The majority of rural households depend on the natural production of fish from permanent or seasonally flooded areas (including rice fields, ponds, reservoirs, etc.), wetlands², rivers and streams. Traditionally, fish demand has been met largely by capture of wild stocks. In fact, national surveys indicate that between 70-90% of rural households catch aquatic animals at some time during the year (LECS 2 1999, Agricultural Census 2000).

These natural resources are being put under increasing pressure from a growing population³ and environmental degradation (e.g. deforestation, soil erosion). Although the Lao PDR is relatively rich in natural resources when compared with other countries in the region, environmental deterioration is occurring at an increasing rate throughout the country and there are areas where degradation has already led to destruction of the fisheries resource. In some areas, the intensification of agriculture with its associated changes in pesticide and land use is now threatening household food security, much of which is based on the capture of aquatic resources in and around rice fields and small water bodies. In other areas infrastructure development is causing similar effects.

Not only does increased population pressure lead to environmental deterioration and increasing demand for food, but may also lead to shortages in the supply of animal protein. This requires action such as introduction of aquaculture, promotion of culture based fisheries and improved management of existing wild stocks.

Another feature in the development of rural aquaculture, and perhaps culture-based community fisheries, is that it provides an excellent opportunity for households to develop cash income generating activities. Small-scale aquaculture is a relatively low cost and low risk entry point into cash commodity production. Compared with other livestock, the main cash income generating activity in rural areas, the culture of fish is relatively easy and has few disease problems. Fish is also flexible, as the product can be used at almost any time through the culture cycle, has a fast turnover (relatively quick recovery of investment) and the product is readily sold and commanding a good price. Furthermore, it is possible to switch between cash income generation or let the activity be part of the household food security strategy. There are some constraints that limit the opportunity to begin culturing fish, such as the need for a culturing facility (generally a pond), access to fingerlings for stocking and its rapid deterioration after harvest (unless preserved). Overall, the various types of small-scale aquaculture provide an opportunity for the diversification of the rural household's farming system.

The introduction of aquaculture requires careful assessment of the physical resource base, as well as socio-economic and environmental conditions if it is to contribute to fish supply in an environmentally sound and sustainable manner. Aquaculture itself must not lead to depletion of natural resources, or divert small-scale farm resources, such as water and nutrients, away from more productive uses. To be sustainable, it requires careful integration into the resource base, which includes both on-farm and off-farm resources. In some cases, indeed, aquaculture may not be the most appropriate or timely intervention and other strategies might be more appropriate for rural development.

To promote the sustainable development of aquatic resources it is essential to take an adaptive incremental approach, building upon local resources and practices, rather than

² In this document the Ramsar Convention and UNESCO definition of wetlands is used being "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres" (UNESCO 1994). Covering all permanent and seasonal inland water bodies.

³ Lao PDR has one of the highest population growth rates in the region (2.6%).

transfer alien technology. To facilitate this process, there is a need to strengthen the capacity of national institutions. Presently, the institutions responsible for the development of the aquatic resources are limited by poor management and the lack of skilled personnel with broad training and facilities (equipment and information). There is a need to support these institutions by training personnel as well as identifying the weaknesses of the institutions and working to strengthen them. This needs to be coupled with national level coordination and facilitation, as well as influencing policy level decisions to support the development of this sub-sector in a way that will benefit the rural poor.

1.2 Description of the sub-sector

Historically, the importance of the aquatic resources sub-sector in Lao PDR has not been recognized in government planning. This is largely due to the under-estimation of the level of production and ignorance of its contribution to the Lao food security. The tendency to focus only on large water bodies and rivers has given rise to this under-estimation, where emphasis has been given to the exploitable economic potential rather than food security. Another reason for the lack of initiatives in the sub-sector is almost certainly the lack of understanding as to how aquatic resources can be better managed.

One official estimate of national production of fish is based on theoretical production from various aquatic habitats (Table 2) indicating a annual production of around 38,000 tonnes. This is almost certainly underestimating the total production, since it is based on assumed production from the various habitats rather than derived values from research and investigations. Previous estimates from reservoirs are also unreliable, since the commercial catch that is registered at landing sites is only a small proportion of the total catch.

Table 2: Government estimates of the area and fish production of different types of water resource in Lao PDR (DLF 1997).

	Large reservoirs (e.g. hydro-electric)	Shallow irrigation reservoirs	Rivers (large.)	Swamps and wetlands	Rice fields (rainfed & irrigated)	Stocked rice-fields	Fish ponds	Small natural ponds, oxbows, irrigation weirs
Productivity (kg/ha)	23	20	67	30	16	120	2,499	573
Total area (ha)	46,696	34,460	254,000	27,029	413,437	4,564	3,017	6,519
Estimated Annual Total Production (tonnes)	1,060	689	16,986	811	6,454	548	7,540	3,737
Annual Total Production	37,825 tonnes							

Over the past few years, more reliable figures have become more available following research into production from various aquatic resources in Lao PDR. Research on fishing efforts from Nam Ngum reservoir⁴ suggest that the production is more than double the earlier figure. Monitoring of small-scale aquaculture ponds⁵ suggests that the productivity from most ponds is about a third of what is indicated in the 1997 estimate, while the area under production is over three times that indicated earlier. In addition village ponds and small

⁴ MRC Reservoir Management Project research data.

⁵ Survey and monitoring data from LAO/97/007

irrigation reservoirs⁶ were found to have a production of around 200 kg/ha, and production estimates from ricefields are likely to be underestimates.

Thus from these more recent production estimates combined with area estimates of various aquatic habitats in Lao PDR, the total production indicates a substantially higher production, almost 60,000 tonnes per year⁷. A figure of this magnitude is still likely to be an underestimate as several consumption surveys of rural households which indicate average annual consumption of fish (all aquatic products) of around 20 kg/capita/annum. Taking the Lao population as a whole, this is approximately 102,000 tonnes per year.

Although fishing and fish culture is not common as a main occupation, it is a common part-time activity involving between 71-92% of rural households, and that 66% of all rural households own one or more fishing nets. Its importance is reflected in that fishing takes around 10 % of the total estimated time spent on all income generating activities (estimated at 6.6 hours per person per day) in rural areas (LECS 2 1999). The working day is dominated by rice cultivation activities followed by fishing and tending animals.

1.3 Government strategy for fisheries

In the Lao Government's Socio-economic Development Plan for 1996-2000, three overall development objectives were formulated:

- Poverty reduction, in particular in rural and multi-ethnic areas
- Infrastructure development
- Human resources development

These objectives were the basis for eight National Priority Programmes (or areas) for development:

- Food production;
- Stabilisation and reduction of shifting cultivation;
- Commercial production;
- Infrastructure development;
- Improved socio-economic management and foreign economic relations;
- Rural development;
- Human resources development; and
- Services development.

During 1998-1999 the Ministry of Agriculture and Forestry (MAF) developed a strategic vision for the agricultural sector. The objective was to 'explain the government's policies, strategies and linkages for the agricultural sector over the next 10 years' (MAF 1999). It is intended that this strategic vision will provide a clear basis for the precise needs for particular types of development initiatives.

⁶ Survey and monitoring data studies from Savannakhet by Imperial College, London University.

⁷ This calculation is based on the estimated production figures from and area of aquatic habitats recent studies, details of calculation is presented in the resource document "The role of aquaculture in rural subsistence livelihoods in Lao PDR".

The overriding focus of the strategic vision targets poverty alleviation, developing productive farming systems and improvement of the social and economic livelihoods of the people of Lao PDR. Also high on the agenda is the conservation of natural resources and biological diversity for the benefit of future generations. Presently, Lao PDR can barely produce enough food to feed its people, thus a main priority is to improve food security. The main agency responsible for improving this situation is MAF.

Although there are indications that it is being recognised that fish is one of the most important sources of animal protein in the Lao diet, the Lao government lacks a strategy for development and management of aquatic resources. This is indicated by the lack of initiatives for the sub-sector in the recent strategic vision for the agriculture sector (MAF 1999). However, the strategic vision does recognise that the livestock and fisheries sub-sector has been under-funded⁸ (both from national resources and international investment) and indicates that more resources will be made available for the development of the sub-sector in the future (MAF 1999). This is appropriate since the sub-sector contributes to some of the central issues in rural livelihoods, which the government wishes to address.

The development of aquatic resources deserves to be given a higher priority by the Lao Government, being a key component in improving food security in the country. Additional reasons for prioritising aquatic resources are the potential to; generate cash income, develop employment opportunities and diversify the agricultural system. All of these features are high on the government's agenda for the agricultural sector.

1.4 Prior and ongoing assistance

Aquaculture development in Lao PDR started with construction of several fish farms and hatcheries during 1956-75 under the USAid programme. This was further supported by the Mekong Committee⁹ through the upgrading of existing fish farm at Nong Teng and construction of a commercial fish farm at Tah Ngone (both in Vientiane Prefecture).

1.4.1 UNDP and FAO

Subsequent to the USAid and Mekong Committee projects, two UNDP/FAO projects¹⁰ focused on the rehabilitation of the existing fish farms and training of government staff. These two projects established/rehabilitated fish hatcheries and provided production-oriented training for technicians, extension agents and farmers. It piloted integrated livestock/crop/fish production and demonstrated viability of semi-intensive fish production methods. However, the project did not pay attention to establishment of an extension network and as a result, the project achievements could not be disseminated to farmers on a wider scale.

A third UNDP/FAO project, LAO/89/003-"Development of Fish Culture Extension" had, as a main objective, '*to disseminate suitable scientific aquaculture technologies to the farmers to improve their traditional methods and in turn improve their nutritional level and family income*'. The project aimed to test aquaculture technologies in the field and adapt these technologies to the local conditions. The mode for the extension methodology was to work through 'model

⁸ Livestock and fisheries contribute 40% to agricultural GDP and substantially to unofficial exports and is the main source of cash income and rural assets for farming households. Despite this, it receives only 3-5% of MAF local resources, whereas Irrigation gets 66%. In addition, foreign public investments have principally focused on irrigation (45%) and forestry.

⁹ Mekong Committee was restructured into the Mekong River Commission in 1995.

¹⁰ LAO/78/014 and LAO/82/014 - "Rehabilitation of Fish Seed Farms and Fish Culture Development".

farmers' selected from progressive 'target farmers' to serve as village level extensionists. Under its human resources development component, the project also trained farmers, district level extensionists, provincial and central-level staff, and organized overseas training as and exchange visits. In total, 401 'target farmers' were selected and monitored, of which 169 farmers were considered to be 'model farmers'. Although the project demonstrated a significantly increased income among project farmers, the impact was on quite localized and favoured farmers with a good resource base (*i.e.* the 'model farmers'), therefore the project achievements were not particularly accessible to poorer rural Lao farmers.

In 1997, a fourth UNDP/FAO aquaculture project LAO/97/007 – “Provincial Aquaculture Development” was initiated. Executed in five provinces by the Lao government with advisory support from FAO. Using a group approach to extension that facilitates farmers to develop whatever resources they have available, LAO/97/007 aims to improve the income and nutrition of low-income farmers with special consideration towards gender and ethnic groups through the introduction of fish culture. The ultimate objective of the Project is to facilitate a self-sustaining aquaculture development programme that is within the capabilities of the executing agency to replicate in provinces not included in the Project. Institutional capacity strengthening and human resource development of both government staff and the village community are considered to be an essential part of this process. Annex II provides details of the current progress of LAO/97/007.

1.4.2 United Nations Development Program (UNDP)

UNDP has implemented rural development projects in some of the same provinces as LAO/97/007. These UNDP projects have potential linkages relevant to LAO/97/007 and the current proposed project. The projects 'Income Generating Activities', 'Micro-finance and Sustainable Livelihoods' and 'Rural Development Project in four northern districts of Sayaboury Province' were intended to have components under which credit or microfinance could be extended for fisheries activities. The reality of working with rural poor farmers is that credit is not an immediate constraint when commencing aquaculture activities. After several years of culture some farmers, more confident in the reliability of their production system, are ready to borrow. This is the current status of some of the farmers that have participated in LAO/97/007 who are now producing fish or fish fingerlings for income generation.

1.4.3 Mekong River Commission (MRC)

MRC has a large fisheries programme which deals not only with capture fisheries, but is involved in culture based fisheries in reservoirs and small scale aquaculture. Note that MRC components are regional in scope and have only part of their activities implemented in Lao PDR. All fisheries initiatives under MRC are funded by Danida. In relation to aquaculture development Lao PDR it is noteworthy that the MRC Fisheries Programme is not promoting aquaculture development activities in the so called ‘central plains’ of the Mekong River basin (which includes most of lowland Lao) since “the aquaculture development potential is to a large extent addressed by the national governments with support from regional and international organizations such as the AIT Aqua(culture) Outreach Programme and the **FAO/UNDP** supported aquaculture extension project in Lao PDR” (MRC 1999).

The MRC fisheries components that have direct relevance to Lao PDR are:

The “Aquaculture of Indigenous Mekong Fish species” component aims to develop economically feasible aquaculture systems using indigenous Mekong fish species, which may complement or replace the use of exotic species for culture purposes (MRC 2000).

The "Management of Reservoir Fisheries - Phase II" component is developing reservoir management methods (particularly co-management) and is using the Nam Ngum reservoir as a study area in Lao PDR.

The "Assessment of Mekong Fisheries" component is a research initiative aimed at describing the importance of the Mekong fisheries with a long term view to influencing policy decisions concerning activities that might impact the fishery.

Under the Environment Programme of MRC the "Inventory and management of Wetlands" project is addressing assessment and management issues related to aquatic habitats, although not directly addressing fisheries, it is dealing with management of aquatic resources in the broader sense.

1.4.4 Regional Development Coordination

The Regional Development Coordination (RDC) is an alliance¹¹ of national and international institutions that brings together resources and expertise for the development of Southern Lao PDR. Partners work within a common framework that provides a structured and appropriate forum for development. The focus is improvement of capacity at the district level, assisting district staff to develop farmer and community networks as well as developing improved systems for the dissemination and collection of information.

Through RDC the Asian Institute of Technology (AIT) is supporting the Aqua Outreach Program, which promotes farmer networks for production and distribution of fish seed to stock ponds and rice paddies. Strategies for communal management of village fisheries are also being developed and tested (main activities in Savannakhet, Khammouan and Saravane provinces). Simple methods of bookkeeping and improved participatory methods of data collection have also been introduced at the district level in RDC member provinces. The Programme is currently being appraised for future funding for the period 2001-2003.

RDC is also facilitating field research type projects which are investigating such issues as: the effect of irrigation and aquaculture on fisheries, quality of fish fingerlings in aquaculture and fish genetic diversity amongst others.

1.4.5 Danish development assistance (Danida)

The establishment of the Lao Aquatic Resources Research Centre (LaRReC) is part of a Danida funded project with assistance through the Mekong River Commission. Through LaRReC, Lao PDR is participating in several regional fisheries components of the Mekong River Commission (MRC) Fisheries Programme, as described above. The funding for these activities is wholly provided by Danida.

A recently signed project - "Integrated watershed management in Xieng Khouang and Hooa Phan provinces" will commence activities shortly. It is anticipated that this project will have some activities relating to aquatic resources management or aquaculture development, but this is still exploratory. It is also likely that this project will also be working with one of the LAO/97/007 district counterparts.

¹¹ The terminology used in this section is rather loose and is not intended to have any specific meaning apart from trying to describe the system.

1.4.6 International Centre for Living Aquatic Resources Management (ICLARM)

ICLARM is implementing a project addressing “Legal and Institutional Framework, and Economic Valuation of Resources and Environment in the Mekong River Region: A Wetlands Approach” beginning in mid-2000 running initially for three years. This is a regional project with activities in the sector particularly in relation to the economic importance of fish and its role in the livelihood strategies of rural poor. The institutional aspects of this project will deal with the lack of clarity in terms of governmental responsibility for the management of aquatic resources. Its main collaborators in Lao PDR are under the Ministry of Agriculture and Forestry.

1.4.7 Japanese International Cooperation Agency (JICA)

The recently signed “Aquaculture Improvement and Extension Project” project is intended to last three years in its first phase. This project will renovate the Nong Teng hatchery (Vientiane) and construct a hatchery and research facility at Nam Souang (Vientiane Province). The research facility will look into appropriate methods for fish breeding and fish culture using on-station trials. It is also intended that district and provincial livestock officers will attend training courses in aquaculture technology.

During discussions between JICA formulation missions and LAO/97/007 areas of collaboration have already been identified. It is anticipated that the JICA project will take advantage of provincial level capacity and knowledge of rural aquaculture in the design of their training program. The project has identified areas where technical upgrading of provincial and district counterparts is required through the provision of specialized training from the JICA project.

1.4.8 International Development Research Centre (IDRC)

The International Development Research Centre of Canada (IDRC) funded the "Indigenous Fishery Development Project" based in the Champassak Provincial Livestock Office. The project had several components including a study of the migration of Mekong River species in the southern region of the country. Induced breeding and fry production of commercially important indigenous species was developed and staff trained at several provincial fish farms in both northern and southern Lao PDR. This project has been completed and the results published.

The second phase of this project is currently underway and is researching the effects of stocking fish into small water bodies (backswamps). The second phase is co-funded and now receives most of its funds from ACIAR (Australian Council International Applied Research).

1.5 Institutional framework

The rationale for the institutional structure of the project is based on two premises. Firstly, in order to affect policy to improve the governments’ actions impacting rural poverty alleviation, there is a need to facilitate the flow of information from district and province level to better inform the government of the real issues at hand.

Secondly, there is a need to ensure that the project is relevant to the realities of rural Lao PDR. If the project focused solely on influencing policy at central level, without being part of the real development issues in rural areas, there is a great risk that the effort could be misdirected. Indeed, part of the weakness of central government planning and policy making

is its poor understanding of the real development requirements of the provinces. Having a field presence not only ensures that the facilitation of the information flow from district through province to national level can be addressed at all levels, but it also provides a ‘reality check’ for the project¹² to ensure that it is promoting government policy changes to address real issues in rural Lao PDR. This is fully in line with the government’s “Strategic vision for the Agriculture Sector” which states that “vertical and horizontal decentralisation is a key attribute and administrative policy of the Lao Government”, and that “development planning in Lao PDR is a bottom-up process.” (MAF 1999).

The project is a working example of the New Agricultural Services Support System, which is part of the Lao government’s strategic vision for the agriculture sector (Figure 1). It builds on the organizational structure of the implementation of LAO/97/007, which has shown that it is practically possible. Since this is now policy, and by building on the foundations of practical implementation from LAO/97/007, the project is in prime position to further this government policy in a practical way. This will be achieved through promoting decentralisation and enabling farmers and other stakeholders to influence government policy and decisions. For a diagrammatic representation of how the project is supporting this capacity building process see Annex III.

¹² It should be noted that LAO/97/007 has been very successful in positive impact at the farmer level, whilst only using approximately 10% of the operational expenditures for these activities. Maintaining a field presence that is effective in providing the necessary inputs for creating impact is not a costly aspect of the project as a whole.

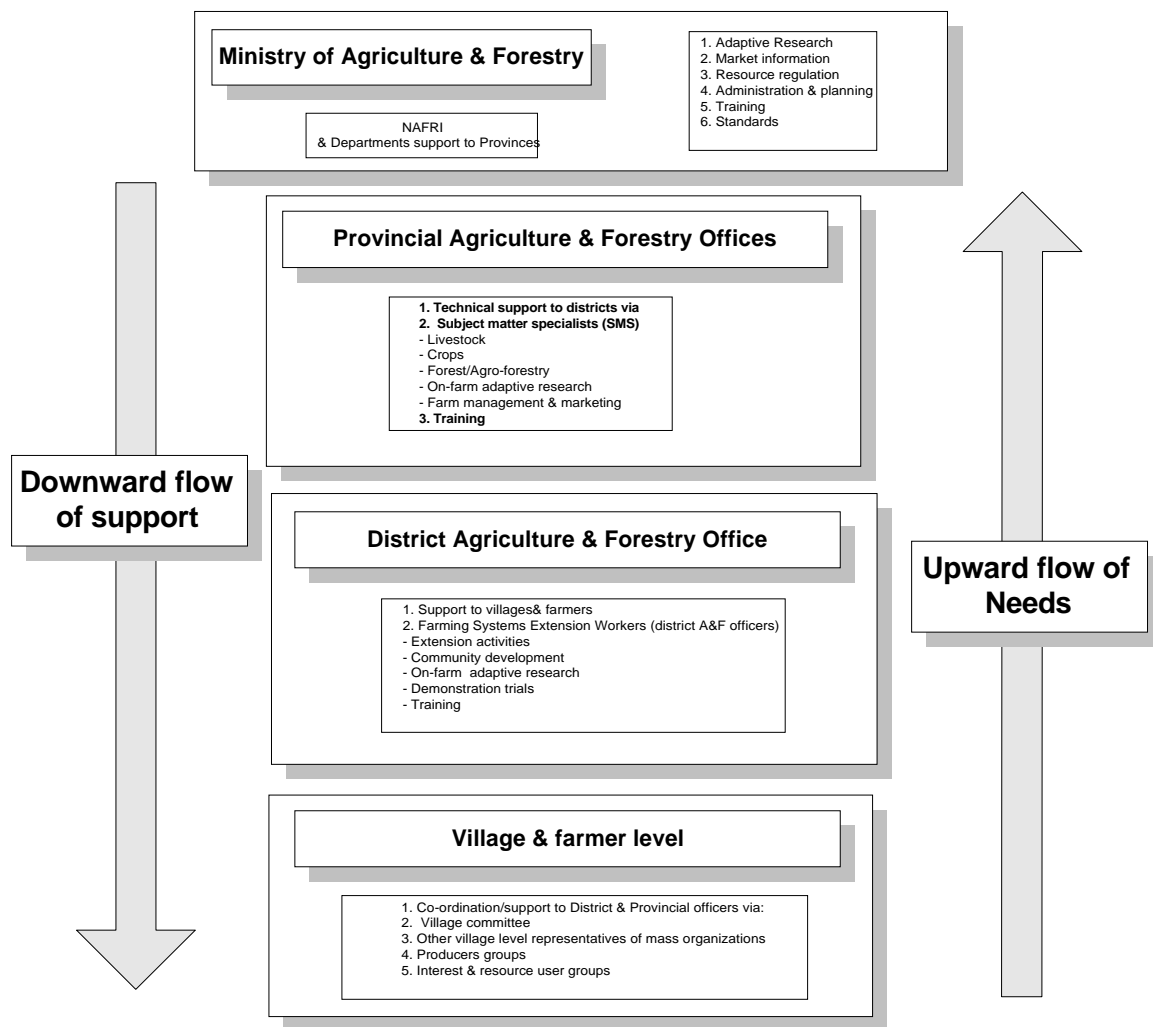


Figure 1: Ministry of Agriculture’s decentralised Agriculture Services Support system to provide Technical support and supervision to manage and co-ordinate the movements and activities of the Farming systems Extension workers (District Officers).

1.5.1 National level

The Department of Livestock and Fisheries (DLF) of the Ministry of Agriculture and Forestry (MAF) implements aquaculture development projects through its Livestock and Fisheries Development Division. The principle role of the DLF is to act as a technical advisory body assisting MAF in the development of policy and planning. DLF obtains its information regarding the provinces from a variety of channels, which vary from simple reports of livestock numbers, to relatively detailed verbal accounts collected through field visits to the provinces by DLF staff. This information is then synthesised and reported to MAF for use in policy and planning. It should be noted that this information system is neither systematic nor comprehensive and is in need of further improvement.

The recently established the Living Aquatic Resources Research Centre (LARReC) under the National Agriculture and Forestry Research Institute (NAFRI) is now charged with the responsibility for technical research into aquatic resources issues. Whilst LARReC has the responsibility for development of improved techniques through research, it is the responsibility of the Department of Livestock and Fisheries to (technically) support provincial development of aquaculture and fisheries. The creation of NAFRI has resulted in some institutional changes in the relationship between extension (one of the roles of the DLF) and research (now the role of LaRReC). The result of creating two institutions, where there was previously one, is a loss of co-ordination between research and extension. This issue is currently being addressed, however there is not yet a working example of: how the institutions will establish research priorities; how the results of research will be disseminated and how this research will be relevant to extension activities.

As part of its process for improving the flow of information between the provinces and the central DLF/MAF, the project will ensure that NAFRI is also a partner in this process

1.5.2 Provincial level

At the provincial level, the Livestock and Fisheries Section (LFS) of the Provincial Agriculture and Forestry Services Office (PAFSO), undertakes extension activities and also operates provincial hatcheries.

The role of the provincial level officers is to provide technical support and some training to district staff. These officers are now termed “Subject Matter Specialists” (SMS) in recognition of their specialization in a particular agricultural sub-sector. The SMS’s report to the provincial livestock sections and are also in occasional contact with the Livestock & Fisheries Development Division.

1.5.3 District level

Under the “Strategic Vision for the Agriculture Sector”, district level staff have had their role redefined as Farming System Extension Workers (FSEW’s). This is both a change from their original sub-sectoral specialization and also a recognition of the fact that they often have broad responsibilities not confined to their original discipline. Significant up-grading of these officers will be necessary if they are to perform their new function. These officers will require training and experience in a broad range of rural development skills, including community development and participatory techniques. Within this new role, the district officers will provide villages with support for establishment of their development plans and liaise with the province in seeking access to relevant services.

The district level is the first level where the process of enabling villagers to express their needs and other requirements to the government. It is here the dialogue between the government and its people can begin and allow for rural people to influence the direction of overall development of rural areas.

1.5.4 Village level

Lao villages have several means for mobilizing villagers. Mass organizations such as the Lao Women's Union and the Youth Union can facilitate targeting of specific groups. The village headman and the Council of Elders are an alternative. Under the government plans for decentralization, all of these organizations are expected to be active in the formulation of village development plans.

During the activities of LAO/97/007, the functional unit at village level was a farmers group. The formation of this group was a useful tool for the preliminary contact between the project and the farmers and may be retained as an initial activity in new areas.

As activities diversify, there are occasions where a farmer's interest group is not the most appropriate structure for implementing activities. In cases such as this, entire villages or simply individuals might be the more appropriate functional unit. The mass organizations are another channel by which targeting and implementation can be made more effective for some activities. The functional unit for activities should not be confined to a single model but should be determined by what is appropriate for the particular situation.

2 Project Rationale/Justification

2.1 Problem to be addressed

2.1.1 Institutional issues

The recent 'Government's Strategic Vision for the Agricultural Sector' outlines the sector development strategy for the next 10 years (MAF 1999). The strategy emphasizes the need for de-centralization of the agricultural sector development process. Inherent in this, is the requirement for government institutions to respond to local-needs. Locally appropriate diversification of farming systems is emphasized, as well as increased marketing of goods and income generation to stimulate local and export economies. The roles of the Ministry of Agriculture and Forestry, line departments and provincial and district services are described. Although this strategy is comprehensive on what is required to develop agriculture, livestock and fisheries in the uplands and lowlands of Lao PDR, it has no working examples of the mechanisms by which this might be achieved other than LAO/97/007.

The lack of practical initiatives as outputs of policy development is a common situation in many government institutions, which still require substantial assistance in developing their capacity to deliver services. This lack of capacity is not just confined to district levels, but is prevalent throughout the government structure from local to central government levels.

LAO/97/007 has begun a process to develop such mechanisms and building government capacity in the livestock and fisheries sub-sector. The objective of the project is to enable the government institutions and central, provincial and district levels to evaluate the needs of rural areas and develop and implement appropriate responses to these needs. At the same time there is input to the government planning process through feedback from participating

provincial institutions. The project will facilitate in establishing a mechanism by which MAF and line agencies can make better informed decisions and develop appropriate strategies and policies for the aquatic resources sub-sector. Within this mechanism the project will also assess and provide human resources development to build capacity among staff to deliver appropriate services and responses for sustainable and productive use of aquatic resources.

The current mechanism used by government for gathering information on a particular issue is ad hoc visits in the field to get an answer to a particular question. This is often done through verbal communication by district and province staff. Although the information may be sufficient, it is rarely updated and largely depends upon a particular individual's knowledge of the issue. This is a weak basis for developing policy and strategy and the mechanism is not conducive to building institutional memory.

Using training as a starting point in the process, the project will assist in facilitating information flow and reporting capacity as well as assisting district staff to provide and enabling environment for a dialogue with farmers identifying needs, opportunities and voicing concerns in relation to aquatic resources development.

The government has declared its commitment to a decentralisation process within the agricultural sector. The experience from LAO/97/007 provides a basis for assisting the government to implement this in a effective and efficient way.

2.1.2 Rural development issues

A second feature of the "Strategic Vision for the Agriculture Sector" is that initiatives for management and development of aquatic resources are under-emphasized, indeed the whole livestock and fisheries "sector" is not very well emphasized. This is due to a combination of poor appreciation of their importance in rural livelihoods and a tendency to take the availability of these resources for granted. Historically, awareness of the importance of a resource only comes once it has significantly degraded. This often leads to an 'investment' intervention through promotion of aquaculture. This is justified in terms of replacing the loss of what was earlier caught from the 'wild'. While this may be true in some cases, this is missing the real importance of promotion of small scale aquaculture in rural areas, which lies in its role in food security strategies targeting poorer households, diversifying the farming system and providing cash income generating opportunities.

Within the livestock and fisheries sector, aquaculture is recognized as an appropriate entry point for working with the rural poor (Wysocki and Friend 1998). The reasons for this are related to the high cultural significance of fish and aquatic products in Lao PDR, unsatisfied rural demand, rapid yield and flexibility for food security or income generation. These features are highly significant in terms of which intervention to use for developing capacity and systems in the agricultural sector. There is no other form of livestock rearing that has such a small unit size, high market value, high disease resistance and rapid yield.

Promotion of small-scale aquaculture, whilst relevant and appropriate, is unable to reach some parts of the rural population as there are certain preconditions for households to incorporate the activity in the farming activities. In instances such as this, the promotion of community based fisheries (natural or enhanced stocking) may be an approach to assist households in benefiting from increased fish availability. Alternatively, the community management of some of the natural aquatic resources may assist in enhancing the amount fish caught in common property areas such as swamps, in and around rice fields and streams. Under the new Agricultural Services Support System it is important that the dialogue with

farming households and communities explores the various needs and opportunities and does not simply look for areas where existing solutions can be applied.

2.2 Project strategy

The overall aim of the project is towards poverty alleviation in rural areas of Lao PDR, using the livestock and fisheries sub-sector as a means to achieve this. This approach is chosen due to previous successful experience through LAO/97/007 and other initiatives in Lao PDR, which have demonstrated that this is a viable path for rural poverty alleviation¹³. In contrast to previous initiatives, the project strategy is to assist the Lao Government to address rural development issues from the agriculture sector in a way that promotes the ability of farming communities to express their problems and concerns, letting this form the basis upon which appropriate and relevant policies and strategies for the sector can be developed. Additionally, the initiative will foster within the government, both the capacity to support development of the farming communities and households and a sense of responsibility on behalf of the government to be able to take expressed needs and concerns into consideration in the development process.

The project strategy will consolidate the experience of LAO/97/007, which in terms of the geographical cover, means continued activities in the four provinces of Oudomxay, Sayaboury, Xieng Khouang and Sekong. Full time activities in Savannakhet will be discontinued in the sense of not being part of core operations, since this province has initiatives in the sector that are coordinated through RDC. A small amount of funds will also be available in order to facilitate complementary activities on a strategic basis in other provinces (including Savannakhet). The overall emphasis of the project will be towards the northern provinces.

Operationally, activities in Sekong will be coordinated through RDC, and the project will develop linkages with RDC facilitating stronger links to the central level of DLF. This will be part of the larger aim to improve the information flow from district/province to ministry with the longer term view of influencing policy.

A new aspect of the project is increased focus on improving information flow of monitoring and assessment data. Inherent in this is the need for processing and systematising this information (collection, storage- retrieval, analysis, summarising, etc.).

In terms of activities at the village level there is a broadening into aquatic resources production and management (including common property, cage based systems, etc.), post harvest processing of aquatic animals, marketing and credit access (see Annex I for details).

An important associated issue is close collaboration with NAFRI/LARReC to ‘re-establish’ the research-extension link in aquatic resources. The collaboration would also aim to ensure that research is needs driven and that promising research results are tested and disseminated to intended target beneficiaries.

Collaboration with other projects, at activity level, has been identified and will attempt to ensure that this transcends simple training and technical support, to try to initiate relevant processes in the government agencies working with the collaborating projects. This will, by its very nature, be *ad hoc* in terms of areas and projects, but the project will attempt to initiate a longer-term support to interested collaborators. Key collaborators are likely to be JICA, UNDCP, GTZ, Danida and potentially ADB funded projects.

¹³ See for example Wysocki and Friend 1998.

2.3 Expected end of project situation

The impact of the project will have resulted in improved capacity of the staff involved in the development of the Livestock and Fisheries sub-sector. The project will have assisted the government in successfully achieving some of its aims in the decentralisation of the agricultural sector development. Various aspects of governance and capacity building have been addressed through assisting the government to implement the Agricultural Services Support System as part of the “Strategic vision for the Agriculture Sector”.

At the central level MAF and DLF have improved channels of information related to the actual situation of aquatic resources in Lao PDR upon which to base policy and strategies in the sub-sector. The quality and timeliness of the information has also improved through better synthesis and analysis of reliable data. Staff at LFDD have better capacity to handle monitoring information from districts and provinces and the system for management of the information has been systemised.

MAF and DLF are also receiving additional information and advice for development of the aquatic resources sub-sector through the Aquatic Resources Advisory group which meets regularly to discuss topical issues in the sub-sector.

Provincial Agriculture and Forestry Office will have much better capacity to report to central level on issues development issues relevant to the Livestock and Fisheries sector (activity reporting, monitoring, etc.). Financial and administrative capacity has also been improved. The linkages and communication with district level staff has improved and the system of reporting from the districts and providing feedback to the district are improved and functioning. Finally the capacity to technically backstop the districts in aquatic resources management issues has been improved.

District officer interaction with farmers has developed a range of appropriate aquatic resource management methods. Farmers who have participated in the project are able to take initiatives in aquatic resource management without significant requirement for backstopping.

2.4 Target beneficiaries

The Rural Poor. The ultimate target group is the rural poor of the Lao PDR, being dependent on fish and aquatic animals products both consumption and for their cash earnings. Several particularly vulnerable groups are expected to benefit from the Project. Since ponds may be located close to the family home, sometimes as a part of home gardens, aquaculture is particularly suitable for management by women, who are often in charge of production. Fish culture in household ponds, together with interventions in marketing and post-harvest processing, are seen as particularly suitable for the involvement of women.

Households with insufficient land resources are a particularly vulnerable group, and are often those that are most dependent on “public” resources (swamps, ditches, etc.). This group is therefore vulnerable when these areas are converted into rice fields, degraded or are in other ways absorbed by other users. This group will be especially benefited by the project broadening in scope towards developing strategies for improved management of small-scale water bodies by local communities. Under activities related to seed production and marketing particular attention also will be given to the possibility for land poor people to benefit.

Farmers and communities participating in the project in the target districts are direct beneficiaries forming a sub-set of the broader group of ultimate beneficiaries (LAO/97/007 impacted 1 in 200 households in the targeted provinces).

Government Staff. The direct beneficiaries of the Project activities will be the management and staff of Department of Agriculture and Fisheries at the national as well as provincial and district levels in the target provinces and districts. Through their involvement in project activities and through training they will develop professional skills to better perform the tasks needed for improving integrated planning and co-ordinated management of living aquatic resources with a focus on the rural poor. Through improvement in planning procedures and establishment of efficient monitoring and reporting methods, the overall management of the resources will be improved.

Associated beneficiaries of the government are senior staff of the Ministry of Agriculture and Forestry and the Provincial Governor's Office in targeted provinces. They will have access to better information on the current status, trends and development needs of the rural population for the Livestock and Fisheries sub-sector. This will form the basis on which better informed and more effective policies and strategies can be formulated.

2.5 Implementation arrangements

The Department of Livestock and Fisheries (DLF) of the Ministry of Agriculture and Forestry (MAF) will be the Executing Agency. The Director General of the DLF will appoint two staff as National Project Director (NPD) and Deputy NPD/Project Manager. Detailed job descriptions are presented in Annex XI and XII.

At provincial and district levels, the development of aquatic resource management methods, strengthening of extension services and monitoring capacity will be the responsibility of the respective provinces and districts. Two counterpart staff from the LFS will be assigned to this task by each participating province. District Agriculture and Forestry Offices will provide one counterpart per district. The project will assist them with the necessary inputs (planning, budgeting and backstopping assistance, materials and equipment, transport and training, etc.).

Food and Agriculture Organization (FAO) will be the Implementing Agency. FAO will provide one long-term Development Advisor (DA) and also provide short term Technical Assistance (TA) through the mobilization of consultants for specific training activities.

The project will coordinate with other initiatives in the sector and those involved on the development of the sub-sector, particularly this refers to the RDC initiative in southern Laos, the JICA supported "Aquaculture Improvement and Extension Project" project, MRC supported "Aquaculture of Indigenous Mekong fish species" project and ICLARM supported "Wetlands Approach" project. It is also anticipated that the project will collaborate with other forthcoming rural development initiatives that have aquatic resource components (GTZ, UNDCP, Danida, ADB, EU Phongxali, SIP-DEV etc.)

2.6 Reasons for donor assistance (UNDP)

Although the livestock and fisheries sub-sector is pivotal in the Government's visions for the development of the agricultural sector, this is not clearly reflected in current policy and strategy. The dual aim of ensuring food security and increasing income generation among rural households makes production of fish and aquatic products an excellent starting point. This project is assisting the government to build capacity and develop mechanisms to pursue food security and income generation which are the stated key goals of the agricultural sector.

There is strong complementarity between the project and aims of the UNDP supported Governance and Public Administration Reform Programme, "to build a state administration

capable of managing the development goals of the country” (GPAR 2000). For the programme, the current challenge is to extend the programme and develop all the components, working with targeted provinces and ministries. Although not targeting the same provinces and ministries, the project complements that initiative by working with similar aims of developing a public service that is “citizen-friendly, accountable and accessible” for the Livestock and Fisheries sub-sector of MAF.

Other governance related aspects are the focus on promoting information flow mechanisms vertically (village-district-province-centre) and horizontally (district-district and province-province) within the Agricultural Support Service System. These will provide better and more relevant information for setting policy and channelling resources for the development of more appropriate services and support for rural development within the sector.

Despite the previous project support to development of aquaculture and the continued commitment of the Government of Lao PDR in terms of human and financial resources for further development, there is still an urgent need for continued financial and technical support for years to come to attain the goal of substantial poverty reduction among the rural poor. The recent economic crisis in the region and the ‘collapse’ of the Lao currency have left the Government unable to commit sufficient financial resources for the development of the sub-sector. The project will build further on the successes of LAO/97/007 in effectively promoting rural development with a focus on the rural poor and farming households.

2.7 Counterpart support capacity

Due to downsizing of the government civil service and the recent creation of NAFRI, there are limited choices for project counterparts within DLF. However, the counterparts that participated in LAO/97/007 are expected to form the backbone of the new project. The capacity of these staff members has been developed to a level where they are capable of executing project activities with the assistance of a Development Advisor.

At the national level, therefore, the Government can provide qualified staff to work as National Project Director (NPD) and a Deputy NPD who will perform the function of project management for financial and accounting purposes. These staff members held the same positions in LAO/97/007. Two extra national staff members will also be required to assist with Provincial co-ordination and training activities under the broadened scope of the project. The National staff will be full time officers of the Livestock and Fisheries Development Division, but it is understood that they may have to perform other duties outside of the project activities on occasions. It is expected that the Project Manager will not be required to perform duties outside of his immediate responsibilities to the project.

At the provincial level, 10 subject matter specialists of the Livestock and Fisheries Sections and 14 district extensionists have been trained under the project LAO/97/007. These officers are available for participation in project activities. Subject to common agreement between the project and Province, further district staff will be available if additional new districts are brought into the project activities. It is expected that these officers will be relatively inexperienced and project activities and outputs will need to reflect this. A list of the Central and Provincial counterpart staff with their area of competence is given in Annex X.

The salaries of personnel assigned to the project, office space, administrative support will be borne by the Government through its regular budget. A detailed description of the Government contribution is given in Annex VII.

The Government of Lao PDR has increased its allocation for fisheries development in recent years, however these funds are largely used for infrastructural activities and are not currently

assigned for other development activities. Funds from the project will, therefore, be provided for the project activities.

3 Logical framework

3.1 Development Objective

The Development Objective, to which the project will contribute towards in the longer term is:

Enhanced food self sufficiency, improved nutrition and increased income generation capability among rural poor¹⁴.

The overall aim is to contribute to poverty alleviation in rural areas of the Lao PDR through the effective use and management of aquatic resources.

3.2 Immediate Objective

The Immediate Objective, which is the situation expected to prevail as a result of project impact is:

Improved capacity of the government to promote sustainable aquatic resources use for poverty alleviation by rural communities and individual households¹⁵

Improved capacity of the government implies that changes to policy, procedures and human capacity are needed to achieve the stated objective. Developing the relevant institutions so they are able to better address constraints and problems and promote rural development that benefits poorer groups.

By facilitating the mechanisms for information flow from farmers and villages to the provinces and centre (relating to problems and constraints as well as monitoring), the target institutions become better at responding to the needs of the rural population, particularly the poor and disadvantaged.

3.3 Outputs and Activities

The Outputs are the results that the project will deliver as a result of project activities.

1. Improved capacity in planning and management among participating government staff.

Activities under this output will be focussing on on-the-job training supported by specialist inputs and targeted training in particular skills. Since the project provides resources that are to be mobilised for development activities, most of the experience will be gained in government counterparts implementing project activities. This will require development of their of planning and management skills. At the national level the focus is to further enhance the coordination skills and overall managerial capacity, mainly through on-the-job training.

¹⁴ The target group is more clearly defined in Annex II among the various levels of poverty, resource poor, resource sufficient and resource secure.

¹⁵ Depending on what interventions are considered it may involve individual households, groups or communities.

2. Improved flow of information and communication between village, district, province and central level affecting policy and procedures in the livestock and fisheries sub-sector.

Activities under this output will focus on modifying and improving existing reporting and monitoring mechanisms. Coupled with this are activities to develop skills in managing (collection, storage, retrieval) and processing (analysing, summarising) information. As these are skills that take a long time to develop and are especially vulnerable to staffing changes, emphasis will be put on developing appropriate systems that can foster institutional memory and assist new staff to understand and use such systems.

The activities would mainly be actual work of monitoring and reporting on activities along with specific training in particular skills. The role of the Trainer/UNV Specialists is to backstop as needed and assist in development and refinement of the relevant systems.

3. Improved activity monitoring and reporting capacity of province and district level agencies.

Activities under this output focus on developing staff skills in collecting monitoring information in an efficient manner. This is assisted through training in various monitoring techniques coupled with monitoring project impact. Building better reporting capacity involves not only staff capacity in reporting, but also development of appropriate reporting formats. Verbal reporting serves an important role and is efficient, although not conducive to building institutional memory. Further development of simple but efficient forms of reporting, to be tested and implemented, are required. The role of the Trainer/UNV Specialist is important in backstopping these developments.

4. Improved capacity among district staff to identify and assess needs and opportunities in aquatic resources management in target villages.

Activities under this output will focus on building up the capacity of district level staff to be able to work with farmers and communities in identifying needs and opportunities in the development of aquatic resources. The skills include participatory methods in needs assessment, broad background in fisheries issues (to facilitate identification of opportunities), general understanding of linkages in farming systems, and good 'people skills'. The activities developing this capacity are linked to the work in the target villages where district staff work together with resource persons (Trainer/UNV or local consultants). This can be coupled with training in community dynamics and other such skills through specific training courses, capitalising on the opportunity to share experiences among participants.

5. Identification and development of sustainable aquatic resources management mechanisms and production technologies that benefits the rural poor.

Activities under this output will draw on the information derived from the identification of opportunities for individual households, user groups or communities and will engage in exploratory investigations into development of suitable methods for fish production methods such as; culture based fisheries in existing village ponds or other similar small water bodies, enhancement of fish production in lowland rice-field and other flooded areas through protection of dry season refuges, spawning areas and migration paths. These investigations are to be tried out with the villages and can in some areas benefit from existing traditional technical knowledge.

It is expected that these activities may form initial opportunities for closer collaboration with LARReC, though this will have to be determined on a case by case basis.

6. Identification and development of cash income generating activities based on aquatic animal production that benefits the rural poor.

Activities under this output will initially focus on development of suitable training modules for post-harvest processing at village level. District officers backstopped by trainers or other specialists should be able to conduct these trainings at village level if the need for such training has been identified. It is intended that some of these activities will draw from the experiences of the recently completed TCP/LAO/88/23 "Improved utilization, quality and safety of fish and fishery products". These activities will also draw on experiences in group formation and participatory training methods developed by LAO/97/007. It is intended to specifically target women for activities within this output.

7. Improved fish production technologies and management options developed and implemented by participating communities and individual households

Activities under this output are to further develop interventions appropriate for rural Lao PDR. Conducting participatory trials to develop the existing fry production, nursing and grow-out technologies to make them appropriate for more farming households and more productive. It is also intended that these activities are providing a basis for further development of aquaculture through stimulating fingerling production. Several longer-term strategies that are also to be developed include: broodstock management and movement, fingerling trading networks, as well as assessing the need for credit among households/groups who are already involved in fish production.

3.4 Objectively Verifiable Indicators¹⁶ and Means of Verification

Progress towards and achievement of each level of objectives and outputs is measured by indicators. As the Project is implemented these indicators are progressively achieved. In a rolling, planning process the indicators are reviewed regularly and as experience and knowledge is gained through the implementation, the indicators can be modified through a dialogue between the project management and the donor. The following initial indicators are proposed for the project.

Development Objective:

Fish (aquatic animal) availability increased/enhanced significantly among participating communities and individual households after the second year of involvement.

Means of Verification – Random surveys of participating households.

In those households engaging in, or entering into, income generating activities, by the second year of involvement, income generated from fish production and related activities will significantly contribute to the households cash income (>20% of total).

Means of Verification – Random surveys of participating households.

Immediate Objective:

¹⁶ This performs the same function as 'success criteria' for projects that are based on a logical framework oriented approach.

In second year of involvement, working procedures of district level counterparts incorporates participatory procedures for; assessment of needs and opportunities in aquatic resources management; problem solving; monitoring and evaluation.

Means of Verification – Documented working procedure (manual or guidelines) and random field visits.

Provincial staff have capacity to technically backstop district staff in aquatic resources management and have knowledge of where to find/request support or information on issues where their specific knowledge is lacking.

Means of Verification – Provincial reporting and dialogue with district staff (central level monitoring).

Timely delivery of central level support to the provinces.

Means of Verification – Quarterly reporting, mid-term evaluation.

Output 1

Annual activity plans and budgets developed for each participating province and implemented without major delays or budget revisions.

Means of Verification – Annual Plans and Progress reports (annual basis).

Output 2

By end of 2002 Central level staff are providing regular (quarterly) reports to DLF summarising: the current status of aquaculture and fisheries (primarily based on information from provinces cooperating with the project) and synthesised recommendations on current issues and trends (based on analysis of reporting and monitoring data).

Means of Verification – Reports to DLF.

By end of 2002 an Aquatic Resources Management Advisory group, involving MAF, DLF, NAFRI and other institutions involved in the sub-sector, has been established and is holding regular meetings and provide advice to DLF and MAF on aquatic resources development and management.

Means of Verification - Meeting outputs including summaries and recommendations.

Output 3

By mid 2002 provincial reporting of activities is regular and on time, clearly based on a synthesis of district level reporting and provincial level activities related to backstopping the district level work.

Means of Verification - Reports

District staff are able to report efficiently on project supported activities that are incorporated into routine reporting to the province (move from verbal to written reporting).

Means of Verification – Reports

Provincial level monitoring systems for aquatic resources development established and implemented by 2003.

Means of Verification – Documented system, monitoring information

Output 4

Needs and opportunities for aquatic resources development identified in target villages in collaboration with stakeholders.

Means of Verification – Activity plans, impact evaluation of selected activities.

Output 5

Aquatic resource production and management methods, appropriate for the rural poor, identified and tested (through collaborative trials, etc.).

Means of Verification – Reports and working examples

By mid-2002 at least three collaborative initiatives with LaRReC in developing and/or monitoring rural poor resource management strategies are completed or in progress.

Means of verification - Reports

Output 6

By 2001 the specific requirements for training in post harvest fish processing in target provinces/groups established, and by 2002 all participating District officers and 10 target groups (women) receive preliminary training in fish processing/post harvest techniques

Means of verification – needs assessment report, quarterly reports

By 2003, target groups generate income from fish processing (>30 % of all participating households marketing products) amounting to >20% of household income among those marketing production.

Means of verification – evaluation of impact of selected households

Output 7

By mid-2003 fish fingerling production from farmer based hatcheries and nursing network exceeds 2,000,000 in the four target provinces.

Means of Verification - Monitoring of fingerling sales.

The proportion of fingerlings from provincial government hatcheries is less than 25% of the total provincial production by end of 2003.

Means of Verification - Monitoring of fingerling sales.

By mid-2003 the estimated table fish production from participating households exceeds 200 tonnes.

Means of Verification – Estimate from amount of fingerlings sold/stocked and average production among participating households

By 2002 provincial plans for broodstock movements and management have been prepared and are to be implemented.

Means of Verification - Plans produced.

By end of 2002 fingerling trading networks are reaching outside the districts the fry are produced in, into neighbouring districts which are lacking fingerling production.

Means of Verification – Fingerling sales records and tracer studies

By end of 2002 the role of credit for households/groups with fish culture experience have been assessed and where found, suitable access to credit has been facilitated.

Means of Verification - Reports

3.5 Risks, assumptions and mitigation measures

3.5.1 Assumptions

One underlying assumption of the project is that there is no significant change in Government priority of food security and income generation in the agriculture sector. It is also assumed that the Government will remain committed to the “Strategic Vision” and particularly the Agricultural Services Support System.

During the implementation of the project additional financing of activities at province and district level is expected through collaboration with other projects. Several such projects have already been identified. For details see section 2.2.

It is assumed that it is possible to implement the Sekong activities through the RDC.

3.5.2 Risks and mitigating measures

Risk: The overall limitations of staffing in the DLF and the provincial and district Agriculture and Forestry sections remain critical. These staff serve a dual role in that they are responsible for both livestock and fisheries extension, therefore the work time available may impact on their ability to fulfil the project-related targets.

Mitigation measures: UNDP will pursue a dialogue with the DLF to assign required number of staff to carry out project-related tasks. The project in the meantime will organize different training to the available staff to upgrade their skills in fisheries development, extension and management. The project will also utilize the services of experienced UNV-specialists to assist with training activities.

Risk: The current travel restrictions on UN personnel create significant logistical problems in terms of regular backstopping of project activities. Although currently difficult to deal with, this has been considered in designing the project. If further restrictions are imposed this could seriously hamper the possibility of UN staff to undertake their duties and implementation of the project could be jeopardised.

Mitigation measures: More time is required to travel to provinces and backstop activities. This may mean that backstopping of provinces becomes less regular and expectation of achievements should be lowered. Trainers/UNV Specialists are based in the provinces as to be able to backstop better if travel restrictions hamper travel by the Development Advisor.

Risk: The qualified staff currently working for LAO/97/007 will be assigned to another project and the project implementation will be hindered by having to develop assigned staff capacity up to a level capable of implementing the project.

Mitigation measures: UNDP dialogue with GOL and DLF before the end of LAO/97/007 to ensure commitment of staff. Commitment of funds for project extension (or bridging period) would also assist in ensuring continuity of staff with the project.

Risk: Qualified staff with post harvest and fish processing backgrounds are not made available as project counterpart technical officers.

Mitigation measures: UNDP dialogue with GOL and DLF before the end of LAO/97/007 to ensure commitment of staff.

4 Inputs

4.1 Government inputs

4.1.1 Personnel

The DLF will provide the required counterpart staff at central, provincial and district levels for the implementation of project activities. The Government will bear salary costs of all the personnel assigned to the project. The following staff will be assigned to the project with attendant responsibilities as below:

Central level:

One Senior Fisheries Officer as National Project Director (NPD). The NPD will have a university degree, experience in fisheries and proven managerial capacity. The NPD will coordinate between the project and all government offices and agencies involved in the execution of the project and will take decisions on behalf of the Government. With the assistance of the Development Advisor, the NPD will be responsible for project management and project progress reporting on a quarterly basis. The NPD is expected to concurrently hold a senior position in the Livestock and Fisheries Development Division.

One Fisheries Officer will be assigned to function as Deputy National Project Director/Project Manager (DNPD). The DNPD will have a university degree, experience in fisheries extension and experience in project management. The DNPD will be a direct assistant to the NPD but will be principally responsible for project financial management and will also officiate as NPD in his/her absence. The DNPD will work full-time for the project throughout the duration of the project.

Two Fisheries officer will be assigned to function as co-ordination and training officers to assist NPD and Deputy NPD in their duties and focus on co-ordination of planning and reporting to and from the provinces. The training officers will also have a particular role in co-ordinating training with other line agencies in areas of post harvest, marketing and credit. The training officers will work full-time for the project.

The DLF will also provide office space, general administrative support and some basic office equipment (computers, vehicles, typewriters etc.).

Provincial level:

The DLF will ensure that one Provincial Counterpart (PC) and one deputy Provincial Counterpart (DPC) is assigned responsibility for project activities and progress reporting in each of the participating provinces. The officer will be stationed at the Livestock and Fisheries Section (LFS) of the Provincial Agriculture and Forestry Service Office (PAFSO) and will coordinate and implement project work at district and village levels. The PC will have a degree/certificate, some technical experience in fisheries/aquaculture and managerial experience. The PC will compile quarterly reports based on information from district level officers and submit them to the NPD. The PC is expected to concurrently hold a senior position in the LFS of PAFSO.

The DPC will assist the PC in implementing project activities.

Each province will provide office facilities and administrative support for implementation of the project within its possibilities.

District level:

The DLF will ensure that each participating Province will depute one District Counterpart (DC) from District Agriculture and Forestry Office (DAFSO), to work in each of the target districts to be responsible for project implementation activities at district level. The DC will have at least a certificate level education and some experience in fisheries. DC will compile information from village level activities into quarterly reports and submit them/report to the Province.

Each district will provide office space and administrative support.

At village level:

Government assigned village staff (Volunteer Veterinary Workers, etc.) and village representatives of mass organizations may participate as needed to facilitate the implementation of project activities.

4.1.2 Training

Much of the in-country training will be conducted by staff trained by LAO/97/007 and the project. Where training is performed in government buildings, the central, provincial and district authorities will provide the training venue free of cost.

4.1.3 Equipment

The government will make available at the disposal of project all equipment and project vehicles from project LAO/97/007.

4.2 External inputs

The execution of the project will be subject to the provisions in the National Execution (NEX) Manual for UNDP Programme and Projects in the Lao PDR (Version 1.0, November, 1996). In this context, UNDP inputs for the project are included in the budget for the UNDP contribution. Training in NEX procedures will be provided to project personnel, as needed, to facilitate efficient project delivery and management.

The Department of Livestock and Fisheries (DLF) - the Executing Agency on behalf of the Government of Lao PDR - will utilize support services of the UNDP Country Office for project input mobilization that has not been included in UN agency letters of agreement and for the related accounting, disbursements and financial reporting.

The signed project document will constitute the Resident Representative's authority to expend funds on behalf of DLF provided that specific instructions (terms of reference, specifications, etc.) have been received from the DLF and that these instructions are in accordance with the project document and subsequent revisions.

UNDP will directly access following budget lines upon authorization from the Government, such as mid-term evaluation (BL 16.01), auditing (BL 21.01) and resource mobilization/public relations (BL 52.02) and charge these lines as actual expenses are incurred. However, for accessing the budget line for the national execution (NEX) support costs (BL 54.01), UNDP shall not require any such authorization.

4.2.1 International Personnel

A long term Development Advisor (DA) will be recruited through FAO to assist the national project team in planning and coordinating all project activities. The duration of the ADA assignment will be 36 months.

Three Trainers/UNV-Specialists will be recruited for an initial period of two years (with an option for the third year extension) to support central and provincial counterparts in specific training activities related to their fields of specialization. Since the UNV's will have different specializations, they will not be permanently assigned to single provinces, but will be a mobile resource that all participating provinces can access.

There are three fields of specialization for the Trainer/UNV specialists described in Annexes XIII to XV. Depending upon capabilities, particularly language and previous experience, the choice of Trainer/UNV specialist will be decided following receipt of applications. More than one post harvest/aquaculture trainer might be appointed and only one rural development/information specialist required if suitable applicants cannot be found.

Other specialised expertise will be availed through FAO under the Support for Technical Services (STS) provision.

4.2.2 Training

The training components of the project will be aimed at central, provincial and district level staff. In contrast to LAO/97/007, the project will more directly address training needs in terms of reporting, information analysis, synthesis and presentation, aimed to address the need to affect policy and procedures at national and provincial level.

Follow-up, specialized training in subject areas previously initiated under LAO/97/007 (i.e. Fish processing and post harvest consultancy, including marketing and credit issues; Participatory rural development tools – consultancy) will be provided where necessary. Since it is not yet clear which organization will mobilize the consultants, the terms of reference for these will be developed by the project as needed.

Three approaches will be employed to the training of counterparts and target groups; on-the-job training, short-courses and exposure tours. Descriptions and purpose of the types of training to be undertaken during the project are presented in Annex IX.

4.2.3 Equipment

Both expendable supplies and non-expendable equipment will be required to support the initial activities with farmers' groups. Significant upgrading of central office facilities is required for it to perform its co-ordination role. After three years of field use, the 4 wheel vehicles are likely to require significant repairs to their suspension and steering systems in

order for them to continue to be used effectively. Motorbikes will also require some basic repairs.

- (i) Non-expendables: Vehicles for fry distribution and provincial backstopping of district level activities, motorcycles for extension agents. Computer and communication equipment for the central office
- (ii) Expendable supplies: blue-mesh netting for nursing cages, fine-mesh netting for hapas and mini-hatcheries, broodstock of native species (as fry) for renewing provincial stocks, post harvest fish preparation equipment, nets and basic cage materials for reservoir cage culture, nets for harvesting and collection of brood stock and netting community ponds.

Details of the equipment requirements are given in Annex VIII.

5 Prior Obligations and Prerequisites

5.1 Prior Obligation(s)

DLF - the Executing Agency of the Government of Lao PDR - will undertake the obligation to follow the procedures for national execution as outlined in the National Execution Manual for UNDP Programme and Projects in the Lao PDR (Version 1.0, November, 1996). This would mean that DLF will authorize UNDP country office for project input mobilization and for the related accounting, disbursements and financial reporting.

5.2 Prerequisites

1. The Government will, apart from the contributions enlisted in kind, commence to commit funds towards the actual project activities (e.g. extension activities, operation and maintenance of equipment and vehicles) in appropriate national budget to begin the takeover by the government of those project activities suitable for the government.
2. The Government will designate a National Project Director (NPD) and a Deputy NPD and required core staff (national support staff and provincial and district counterparts) immediately upon the signing of the project document.
3. The Government will ensure that availability of Project counterpart staff is such that project activities are not compromised.

6 Project Reporting, Reviews and Evaluation

The following reporting, review and evaluation methods and procedures will be followed by the project throughout the implementation.

1. The National Project Director (NPD) with the assistance of the Development Advisor (ADA) assistance will prepare, and submit, quarterly content-wise progress report and financial report to the Government of Lao PDR and UNDP.
2. The project will be subject to tripartite reviews (TPR) - joint reviews by the Government, Donor Agency (UNDP) and Implementing Agency (FAO) at least once in every 12 months; the first such meeting to be held within the first 12 months of the start of full

implementation. Two weeks prior to each TPR meeting the NPD shall prepare and submit an Annual Project Report (APR) to all parties.

3. A project terminal report will be prepared by the NPD for consideration at the terminal TPR meeting. It shall be prepared in draft sufficiently in advance to allow review and technical clearance by the Government and the Donor.
4. The project shall be subject to a mid-term evaluation 18 months after the start of implementation and prior to the second annual TPR in order to adjust its direction and reorient its activities as appropriate.

7 Legal context

This Project Document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of the Lao People's Democratic Republic and the United Nations Development Programme, signed by the Parties on 10 October, 1998.

The Government Implementing Agency shall, for the purpose of the Standard Basic Agreement, refer to the Government Co-operating Agency described in that Agreement.

The following types of revisions may be made to this project document with the signature of the UNDP Resident Representative only, provided he or she is assured that the other signatories of the project document have no objections to the proposed changes:

1. Revisions in, or addition of, any of the annexes of the Project Document.
2. Revisions which do not involve significant changes in the objectives or outputs of the project caused by rearrangement of inputs already agreed to or by cost increases due to inflation.
3. Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility.

Changes to the logical framework of the project (primarily revisions of existing and additions of new indicators) are to be proposed at the annual TPR and revised accordingly with agreement of all parties.

An implementing agency agreement will also be signed between the Government of Lao PDR and the Food and Agriculture Organization (FAO) for activities to be implemented by FAO.

8 Budget

The external contribution to the project is US\$ 1,380,100 over three years. The Government contribution is Kip 468.5 million. Detailed budgets are presented in Annex VI (external contribution) and VII (Government contribution).

Project Budget (external contribution).

	Budget Line		Project Total	W/m
11-99	Aquaculture Development Advisor (Line total)	FAO	\$540,000	36
13-99	Local staff (Line total)	NEX	\$21,600	36
14-99	Trainers/UNV Specialists (Line total)	UNV	\$324,000	36
15-99	Travel (Line total)		\$68,500	
16-99	Evaluation and supervision (Line total)		\$33,000	
	019 Summary total		\$987,100	
21-99	Office management (Line total)		\$28,000	
	029 Summary total		\$28,000	
32-99	Consultancy and study tours (Line total)		\$80,500	
33-99	Training and Meetings (Line total)		\$62,400	
	039 Summary total		\$142,900	
45-99	Equipment and maintenance (Line total)		\$126,000	
47-99	Vehicles (Line total)		\$52,000	
	049 Summary total		\$178,000	
52-99	Reporting (Line total)		\$8,500	
53-99	Sundries (Line total)		\$34,500	
54-99	Direct cost (Line total)		\$1,100	
	059 Summary total		\$44,100	
	Projected			
	099 Budget total		\$1,380,100	

Annexes

ANNEX I - Broadening the scope of activities supported at village level

Aquatic resources production and management

The first phase of the project focused on the promotion of small-scale (robust) aquaculture, suitable for a substantial proportion of rural households. However, the project has all along argued that aquaculture is not accessible to everyone. To become involved there is a minimum requirement of suitable resources, land, water, some access to fry/fingerlings and ideally some available inputs. Not only are these assets needed, they need to be available in the right context. Aquaculture will never be as widespread such as rice cultivation or even chicken raising (over 72% of all rural households¹⁷), it does however have great linkages to aquatic animal production as a whole.

One change in the second phase of the project will be to shift the emphasis from identifying where aquaculture can be successful to a needs/opportunity assessment of aquatic animal production. In this way the target group that can be reached by the project is greatly increased and is of relevance for most of the rural population in Lao PDR.

Post Harvest processing – food security, income generation & health

Post-harvest processing is an area not solely confined to aquaculture that has opportunities for households that engage in fishing activities¹⁸. In one survey of a Luang Prabang province, 95% of households in 63% of villages engaged in fishing and collection of aquatic animals for subsistence (MRC 2000). Post harvest processing is predominantly a woman's activity in Lao PDR and women would certainly form the majority of participants in these types of activities. Pilot activities in Sayaboury province attracted a large number of women during an aquaculture training course. Other farmers groups have expressed a desire to become involved in processing since it presents income generating potentials. It is notable that some ethnic groups do not have a tradition of fish preservation or processing and lack the basic knowledge to become involved.

The prevalence of human liver fluke infection in Lao PDR is extremely high (36 – 60% results of three studies 1991 & 1999) and can lead to debilitation, susceptibility to other disease and liver disease. Although easy to treat, re-infection is almost immediate due to poor food preservation techniques (insufficient fermenting), preference for raw fish and lack of latrines. Effective processing coupled with hygiene messages could positively impact this health issue. Preliminary inter-department (Livestock & Fisheries and Health Department) collaboration has already taken place during a recent one year FAO technical co-operation project.

Preservation of aquatic products during times of plenty ensures food security during periods of low food availability. Food preservation also provides significant opportunities for income generation and women are predominantly involved in this aspect of aquatic resource

¹⁷ Chicken raising was found in over 82% of all households engaged in livestock raising.

¹⁸ According to Lao Agricultural Census 1998/99, 71% of rural households are engaged in fishing other than agriculture, and 56,000 holdings have some form of aquaculture (8 %) (Agricultural Census 2000).

utilization. Women's involvement can be greatly enhanced through a more holistic approach to the role of aquatic resources in rural livelihoods.

Widespread capacity to organize and train women in post harvest processing does not currently exist in Lao PDR but partnerships with institutions such as Lao Women's Union could develop such capacity.

Marketing – processed aquatic products, fingerlings, table fish

Farmers groups that have been established for several years and which have increased the numbers of ponds and their production output are increasingly interested in the potential for income generation. Many groups are in locations that are not easily accessible to provincial markets, although they could reach district markets. Marketing support to these groups could enable groups to develop small regular (weekly, monthly) marketing days for their products (fresh fish preserved fish) and attract buyers. Such markets would also offer the spin-off opportunities for marketing other products.

Fingerling and fry producers do not generally have problems in marketing their product due to high local demand. The fry and fingerling producers are natural extension channels as are fry traders (although currently limited in number in Lao PDR, there are fingerling traders in Savannakhet that the LAO/97/007 counterparts have identified for assistance). Trading networks for fingerlings are essential for further development of aquaculture in rural Lao PDR.

Since marketing capacity does not exist in the livestock & fisheries sections, it will be necessary to form partnerships with other government institutions to deliver these services. Through the LAO/97/007 marketing support and post-harvest processing can all be introduced as components within the LAO/97/007 framework.

Credit access

The diversification from purely subsistence livelihoods into some form of income generating activity is often accompanied by a requirement for credit. Generally, the type of credit which is required is for the further development of an activity that is already income generating and relatively low risk. Examples of this in the aquatic resource sector are food processing, fingerling production and intensified fish pond production.

It is part of the Ministry of Agriculture and Forestry's strategy to strengthen state owned banks' (SOCB's) credit services and a broadened framework of LAO/97/007 would be an appropriate channel to facilitate credit access. It cannot be expected that Provincial Livestock and Fisheries sections administer credit, but the ability to form groups, identify individuals and facilitate access to banking services could be a potential role. As with other cross-sectoral activities, the identification of suitable partner's at provincial and national level will be critical.

ANNEX II - Summary of LAO/97/007 project

The Provincial Aquaculture Development Project (LAO/97/007) is funded as part of a UNDP country programme for rural development that responds to the Government's Rural Development initiative, one of the eight national priorities under the National Socio-Economic Development Plan. It is one of the first fully national-execution (Nex) projects under the Department of Livestock and Fisheries (DLF), with technical assistance supported by Food and Agriculture Organisation (FAO). This first phase of the project has a duration of three years up to the end of the year 2000.

The main justification of the project is that it is addressing relevant food security issues, potentially providing income generation and adds to the diversification of the farming system. Rural aquaculture can also be seen as a significant entry point into other rural development initiatives.

Since its inception in November 1997, LAO/97/007 has developed experiences gained from previous UNDP/FAO aquaculture development projects that had rehabilitated a number of hatchery stations, established model fish farmers and started fish culture at the village level. LAO/97/007 operates in five provinces: Xieng Khouang, Oudomxay, Sayaboury, Savannakhet and Sekong covering 14 districts and including 98 farmer groups with a total number of 1,072 families.

The Project aims to improve the income and nutrition of low-income farmers¹⁹ with special consideration towards gender and ethnic groups through the introduction of fish culture. The ultimate objective of the Project is to facilitate a self-sustaining aquaculture development programme that is within the capabilities of the executing agency to replicate within provinces that are not included in this Project. Institutional capacity strengthening and human resource development of both the government staff and the village community are considered to be an essential part of this process.

The Project, nationally executed, utilises existing government mechanisms and emphasises an effective extension interface between the district technicians and selected fish farmers. It has been successful in its pragmatic people-centred consultative approach in responding to their perceived needs, instead of applying strict scientific solutions. The provincial capacity in providing technical and management supports to the district has been the Project major priority item. Examples of concrete and potential accomplishment at the national level include:

- successful try-out of a transferable aquaculture development technology that is within the capability of the fish farmers to adopt,
- substantial increase in awareness in the target and adjacent provinces through the development and dissemination of aquaculture extension materials,
- first-time establishment of a comprehensive aquaculture training programme that forms the basis of the aquaculture extension appropriate to the unique conditions of rural Lao PDR,

¹⁹ Since most rural farmers are "low-income" due to lack of markets and their subsistence farming livelihoods; for project purposes target groups are divided as 30% should be in resources poor category, 50% in resource sufficient and 20% in resource secure.

- establishment of a linked process of fry production, fingerling distribution and table-fish production through providing supports to state hatcheries and private smallholders.

A mid-term evaluation of the project (1999) recommended future project activities focus on:

- further develop and support a self-sustaining farmers group network specialising in fry production and nursing,
- provide further intensive training in project management to the provincial and district staff,
- explore the prospect of utilising aquaculture as the entry point for integrated rural development activities,
- develop documentation in the form of notes or guides from stakeholder analysis and consultative approaches at the field level, as part of the national aquaculture extension programme.
- establishment of a participatory impact monitoring and evaluation system based on RRA and development of a concise logical framework matrix.

LAO/97/007 is building government capacity at three levels: central planning and management, provincial extension planning and implementation and district development officers. This capacity is principally the ability of the Lao government to target and direct appropriate livestock extension services to rural subsistence farmers.

Throughout the agriculture and forestry sector, most government officers training has been confined to specialized technical areas. General extension skills²⁰ have never been taught, or officers have lacked the opportunity to develop the skills and experience. Through on-going activities and training, key skills that are now being routinely used by the government counterparts include participatory methods for the analysis of problems and the development of solutions. Mechanisms for participatory planning and monitoring are also being established. These methods enable participating farmers to identify their requirements and make plans for achieving them. This farmer-driven extension service (now policy in MAF) is appropriate to their needs and reduces reliance on external assistance by finding locally available solutions. This is a strong sustainability feature of LAO/97/007, *and the project is in line with the current sector policy of the government.*

As part of this process, farmers are empowered with knowledge and skills to develop fish culture further and overcome the constraints that limit other farmers' ability to diversify out of rice farming into the livestock and aquaculture sector. The formation and empowerment of farmers groups is the starting point for community strengthening since this requires the development of skills such as planning and analysis of problems together with some degree of problem solving. The ability of district staff to facilitate this process with farmers' groups is still in its earliest stages and requires additional reinforcement.

The strength and sustainability of the farmers groups developed under LAO/97/007 activities varies between groups according to the extent to which they share a common interest. Social and ethnic factors are also involved in some cases with social-cohesion a primary factor. Typically it is not expected that the group continue activities together after the project ceases routine backstopping support, this is because the individually owned fish pond is not a

²⁰ This is now part of the Government policy, particularly at the district level, but also as a back-stopping specialism at the provincial level.

common resource and does not require the existence of the group for its success. Should the group need to be contacted then it can be reformed when required. Equally, if the old members of the group have a problem or require further support it is likely that they would act together to request support from the district. This would be the context for further activities in the fields of post harvest processing, marketing or credit training. Should the group develop as a producers/marketing group or access credit as a group then it could be expected for the group to retain its cohesion.

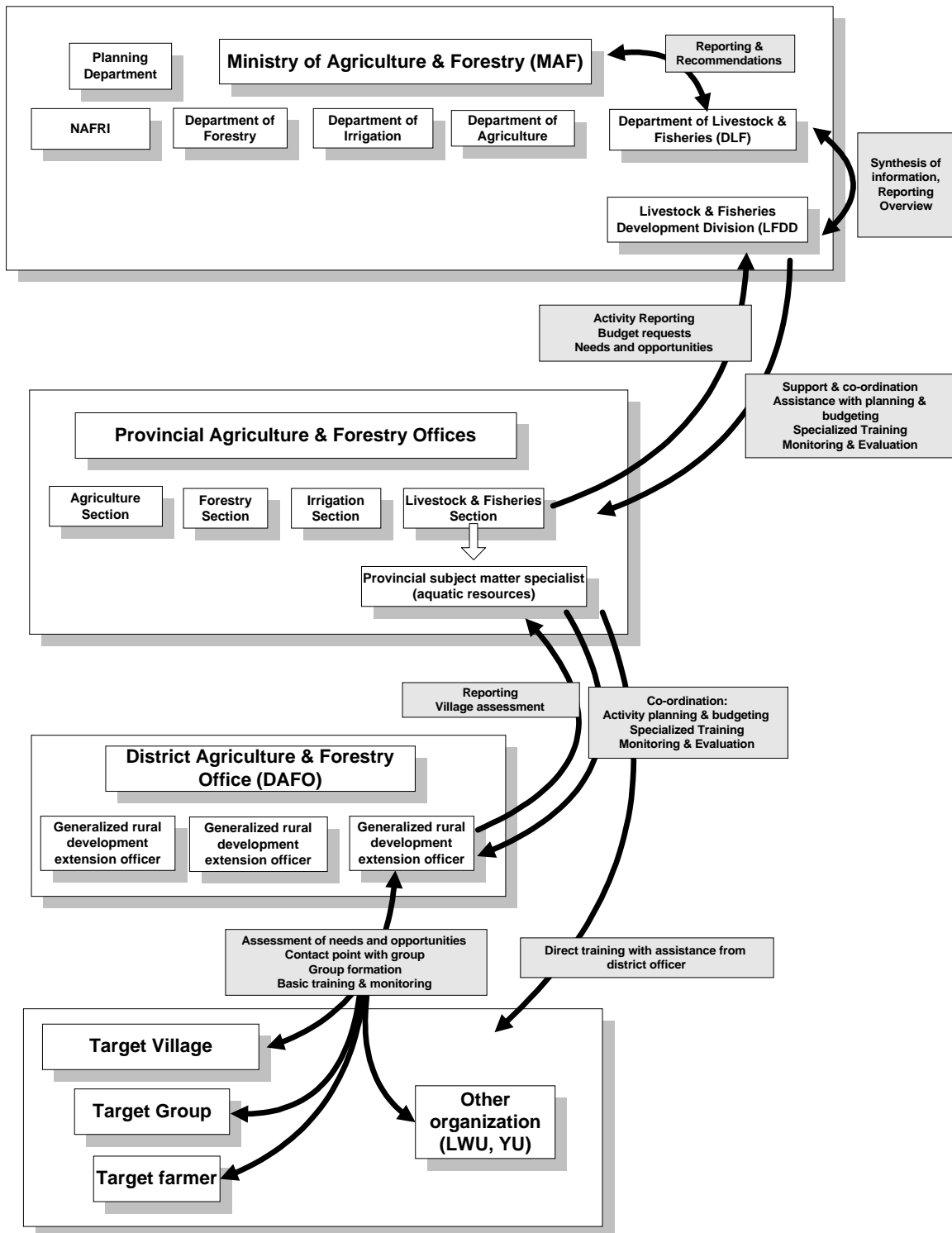
LAO/97/007 is not the only intervention that has developed and used participatory approaches in rural agriculture and livestock extension. There are many examples of this in Lao PDR, however most are relatively local, confined to a district or province perhaps with the exception of RDC which operates in the six southern provinces in Laos²¹. LAO/97/007 differs from these other interventions because it is the only case which involves and works through all levels of the government system, from centre to farmer. Government execution ensures ownership, sustainability, and by working through existing government structures, provides a strong potential for institutionalisation of the LAO/97/007 approaches.

LAO/97/007 has been promoting the use of native species, principally by facilitating the production and availability of the common silver barb. This species is preferred by many farmers but hatcheries have not been able to produce this fish in significant quantities. Promotion of the ease of culture of silver barb and discouragement of the less suitable exotic species has seen a dramatic change in hatchery and farmer attitudes and choice of species for culture. This emphasis is also slowly being recognized as provincial feedback to the centre increasingly emphasizes the suitability of smaller fast growing, native species.

²¹ RDC focuses on coordinating the development of livestock and aquatic resources.

ANNEX III - Organisational Structure

Diagrammatic representation of the project's interface with the Lao Government agencies in supporting the development and strengthening of the government's decentralised approach to rural development in the agricultural sector.



ANNEX IV - Project Logical Framework Matrix

Project Description:

The project is a capacity building initiative that addresses issues of better governance through assisting the government to implement a decentralised support service for the agriculture sector.

Logical framework validity: 01-Jan-01 to 31-Dec-03

Last revision: 28-Aug-2000

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Risks and Assumptions
DEVELOPMENT OBJECTIVE			
Enhanced food self sufficiency, improved nutrition and increased income capability among rural poor ²²	<ul style="list-style-type: none"> - Fish (aquatic animal) availability increased/improved among participating households - In those households engaged in, or entering into, income generation activities, by the second year of involvement, income generated from fish production and related activities will significantly contribute to the households cash income (>20% of total) 	<ul style="list-style-type: none"> - Random surveys of participating households - Random surveys of participating households 	
IMMEDIATE OBJECTIVE			
Improved capacity of the government to promote sustainable aquatic resources use for poverty alleviation by rural communities and individual households	<ul style="list-style-type: none"> - In second year of involvement, working procedures of district level counterparts incorporates participatory procedures for; assessment of needs and opportunities in aquatic resources management; problem solving; monitoring and evaluation - By 2003 provincial staff have capacity to technically backstop district staff in aquatic resources management and have knowledge of where to find/request support or information on issues where their specific knowledge is lacking - Timely delivery of central level support to the provinces 	<ul style="list-style-type: none"> - Documented working procedure (manual or guidelines and random field visits) - Provincial reporting and dialogue with district staff (central level monitoring) - Quarterly reporting, mid term evaluation 	

²² The target group is more clearly defined in Annex II among the various levels of poverty, resource poor, resource sufficient and resource secure.

OUTPUTS			
<p>1. Improvement of planning and management²³ capacity among participating government staff.</p> <p>2. Improved flow of information and communication between village, district, province and central level affecting policy and procedures in the livestock and fisheries sub-sector</p> <p>3. Improved activity monitoring and reporting capacity²⁴ of province and district level agencies</p> <p>4. Improved capacity among district staff to identify and assess needs and opportunities in aquatic resources management in target villages</p>	<ul style="list-style-type: none"> - Annual activity plans and budgets developed for each participating province and province and implemented without major delays or budget revisions - By end of 2002 Central level staff are providing regular (quarterly) reports to DLF summarising the current status of aquaculture and fisheries (primarily based on information from provinces cooperating with the project) and synthesised recommendations on current issues and trends (based on analysis of reporting and monitoring data) - By end of 2002 an Aquatic Resources Management Advisory group, involving MAF, DLF, NAFRI and other institutions involved in the sub-sector, has been established and is holding regular meetings and provide advice to DLF and MAF on aquatic resources development and management - District staff are able to report efficiently on project supported activities that are incorporated into routine reporting to the province (move from verbal to written reporting) - By mid 2002 provincial reporting of activities is regular and on time, clearly based on a synthesis of district level reporting and provincial level activities related to backstopping the district level work - Provincial level monitoring systems for aquatic resources development established and implemented by 2003 - Needs and opportunities for aquatic resources development identified in target villages in collaboration with stakeholders 	<ul style="list-style-type: none"> - Annual plans and progress reports (annual basis) - Reports to DLF - Meeting outputs including summaries and recommendations - Quarterly reports - Semi-annual reports - Documented system, monitoring information - Activity plans, impact evaluation of selected activities 	

²³ This is taken to include financial planning and management as well.

²⁴ This refers to human capacity (staff) as well as systems and development procedures.

5. Identification and development of sustainable aquatic resources management mechanisms and production technologies that benefits the rural poor	<ul style="list-style-type: none"> - Aquatic resource production and management methods, appropriate for the rural poor, identified and tested (through collaborative trials, etc.) - By mid-2002 at least three collaborative initiatives with LaRReC in developing and/or monitoring rural poor resource management strategies are completed or in progress. 	<ul style="list-style-type: none"> - Reports and working examples - Reports 	
6. Identification and development of cash income generating activities based on aquatic animal production that benefit the rural poor.	<ul style="list-style-type: none"> - By 2001 the specific requirements for training in post harvest fish processing in target provinces/groups established, and by 2002 all participating District officers and 10 target groups (women) receive preliminary training in fish processing/post harvest techniques - By 2003, target groups generate income from fish processing (>30 % of all participating households marketing products) amounting to >20% of household income among those marketing production 	<ul style="list-style-type: none"> - Needs assessment report, Quarterly reports - Evaluation of impact of selected households 	
7. Improved fish production technologies and management options developed and implemented by participating communities and individual households	<ul style="list-style-type: none"> - By mid-2003 fish fingerling production from farmer based hatcheries and nursing network exceeds 2,000,000 in the four target provinces - The proportion of fingerlings from provincial government hatcheries is less than 25% of the total provincial production by end of 2003 - By mid-2003 the estimated table fish production from participating households exceeds 200 tonnes - By 2002 provincial plans for broodstock movements and management have been prepared and are to be implemented - By end of 2002 fingerling trading networks are reaching outside the districts the fry are produced in, into neighbouring districts which are lacking fingerling production - By end of 2002 the role of credit for households/groups with fish culture experience have been assessed and where found suitable access to credit has been facilitated 	<ul style="list-style-type: none"> - Monitoring of fingerling sales - Monitoring of fingerling sales - Estimate from amount of fingerlings sold/stocked and average production among participating households - Plans produced - Fingerling sales records and tracer studies - Reports 	

GENERIC ACTIVITIES			
<ul style="list-style-type: none"> - Project planning and management process - Workshops and meetings - Training of government staff through both on-the-job and specific courses in rural development skills - Training of government staff through both on-the-job and specific courses in administration, reporting and management skills - Study tours for participating staff and farmers - Selection of target villages and formation of groups - Training and support for aquatic resources development (aquaculture, community fisheries, etc.) in targeted areas - Monitoring and surveys (impact on selected households, credit needs assessment) - Collaborative trials of 'new' aquatic resources management methods (at farmer/community level and in cooperation with LaRReC, etc.) - Extension materials production and dissemination 			

ANNEX V - Work plan

Indicative project work plan. This implementation schedule will be modified through regular planning meetings and TPR meetings.

	Activity	Responsibility	Year 1				Year 2				Year 3			
			1	2	3	4	1	2	3	4	1	2	3	4
1.0	Project startup activities													
1.1	Upgrade project office	GOVT												
1.2	National meeting for project counterparts	GOVT												
1.3	Equipment purchasing / renovation	UNDP/GOVT												
2.0	Training for Project counterparts													
2.1	Needs assessment training	GOVT												
2.2	Monitoring and evaluation	GOVT												
2.3	Reporting skills	GOVT												
2.4	Participatory rural development skills	GOVT												
2.5	Credit needs	GOVT												
2.6	Marketing and trading	GOVT												
3.0	Target group identification & needs assessment	GOVT												
4.0	Evaluation of project impact													
5.0	Postharvest and processing													
5.1	Needs assessment	GOVT												
5.2	Training courses for target groups	GOVT												
5.3	Assistance with small equipment items	GOVT												
5.4	Monitoring	GOVT												
5.5	Evaluation	GOVT												
6.0	Small-scale hatcheries													
6.1	Small-scale hatchery training	GOVT												
6.2	Assistance with broodstock, small equipment items	GOVT												
6.3	Monitoring	GOVT												
6.4	Evaluation	GOVT												
7.0	Community ponds													
7.1	Target group identification	GOVT												
7.2	Exchange trips to working community ponds	GOVT												
7.3	Stocking of ponds/fingerling production	GOVT												
7.4	Monitoring	GOVT												
7.5	Participatory evaluation	GOVT												
8.0	Cage culture													
8.1	Target group identification	GOVT												
8.2	Training in cage culture	GOVT												
8.3	cage construction/stocking	GOVT												
8.4	Monitoring	GOVT												
8.5	Participatory evaluation	GOVT												
9.0	Workshops and meetings													
9.1	6 monthly co-ordination meeting	GOVT												
9.2	Quarterly working group, aquatic resources	GOVT												
9.3	National workshop	GOVT												
10.0	Exposure tours & exchange visits													
10.1	Cage culture in Thailand	FAO												
10.2	Inter province exchange visits	GOVT												
11.0	Extension material production													
11.1	Develop material with counterparts	GOVT												
11.2	Print and distribute pamphlets	GOVT												
11.3	Produce training video	GOVT												
12.0	Technical assistance													
12.1	Development Advisor	FAO												
12.2	Trainer / UNV Specialists	UNV												
12.3	Post harvest/Processing consultancy	FAO												
12.4	Cage culture consultancy	FAO												
12.5	Mid term and final evaluations	FAO												

ANNEX VI - Project budget

Country: LAO P.D.R.

Project Title: Development of Fisheries Support Services

Project budget covering external contribution (US\$).

	Budget Line		Project Total	w/m	2001	2002	2003
11-01	Aquaculture Development Advisor	FAO	\$540,000	36	\$180,000	\$180,000	\$180,000
11-99	Line total		\$540,000				
13-01	Admin assistant	NEX	\$10,800	36	\$3,600	\$3,600	\$3,600
13-02	Driver	NEX	\$10,800	36	\$3,600	\$3,600	\$3,600
13-99	Line total		\$21,600				
14-01	Trainer / UNV specialist (Post Harvest/ Fisheries/Aquaculture)	UNV	\$108,000	36	\$36,000	\$36,000	\$36,000
14-02	Trainer / UNV specialist (Rural Development)	UNV	\$108,000	36	\$36,000	\$36,000	\$36,000
14-03	Trainer / UNV specialist (Information & reporting)	UNV	\$108,000	36	\$36,000	\$36,000	\$36,000
14-99	Line total		\$324,000				
15-01	Travel Development Advisor	FAO	\$10,000		\$3,000	\$4,000	\$3,000
15-02	Travel Official (Central)	NEX	\$15,000		\$4,000	\$6,000	\$5,000
15-03	Travel Official (5 Provinces)	NEX	\$12,000		\$3,000	\$5,000	\$4,000
15-04	Travel Official (>20 Districts)	NEX	\$12,000		\$4,000	\$4,000	\$4,000
15-05	Travel UNV	UNV	\$9,000		\$3,000	\$3,000	\$3,000
15-06	Rapid rural appraisal team	NEX	\$6,000		\$2,000	\$2,000	\$2,000
15-07	Travel Development Advisor (International/BKK)	FAO	\$4,500		\$1,500	\$1,500	\$1,500
15-99	Line total		\$68,500				
16-01	Mid-term Evaluation	FAO	\$15,000		\$0	\$15,000	\$0
16-02	Supervision Backstopping	NEX	\$3,000		\$1,000	\$1,000	\$1,000
16-03	Terminal evaluation	FAO	\$15,000		\$0	\$0	\$15,000
16-99	Line total		\$33,000				
	019 Summary total		\$987,100				
21-01	Auditing	NEX	\$7,500		\$2,500	\$2,500	\$2,500
21-02	Printing of extension materials, video	NEX	\$14,000		\$4,000	\$6,000	\$4,000
21-03	Office Upgrading	NEX	\$6,500		\$4,000	\$1,500	\$1,000
21-99	Line total		\$28,000				
	029 Summary total		\$28,000				
32-01	Consultancy (Post harvest and fish processing)	FAO	\$15,000	2	\$15,000	\$0	\$0
32-02	Consultancy (Cage culture)	FAO	\$15,000	2	\$0	\$15,000	\$0
32-03	Local consultancy (Rural Development skills)	NEX	\$28,000	2	\$14,000	\$14,000	\$0
32-04	Study tour (Thailand - cage culture techniques)	FAO	\$10,000		\$0	\$10,000	\$0
32-05	Study tour (in-country - community managed fish ponds)	NEX	\$3,500		\$2,000	\$1,500	\$0
32-06	Exchange tour (in-country between provinces)	NEX	\$9,000		\$3,000	\$3,000	\$3,000
32-99	Line total		\$80,500				
33-01	Training district officers in aquaculture technology	NEX	\$4,000		\$2,000	\$2,000	\$0
33-02	Training - fish processing, post harvest	NEX	\$9,000		\$3,000	\$3,000	\$3,000

33-03	Training - fish culture, rice fish	NEX	\$7,500		\$2,500	\$2,500	\$2,500
33-04	Training - small scale-hatchery technology	NEX	\$7,500		\$2,500	\$2,500	\$2,500
33-05	Training community managed fish ponds	NEX	\$4,000		\$2,000	\$2,000	\$0
33-06	Training district officers in participatory extension methods	NEX	\$4,500		\$1,500	\$1,500	\$1,500
33-07	Training - credit extension procedures	NEX	\$3,000		\$1,500	\$1,500	\$0
33-08	Training - monitoring & evaluation	NEX	\$4,000		\$2,000	\$2,000	\$0
33-09	Training - marketing and trading networks	NEX	\$4,000		\$0	\$2,000	\$2,000
33-10	Meeting - Provincial counterparts co-ordination (six monthly)	NEX	\$5,000		\$1,000	\$2,000	\$2,000
33-11	Meetings - Aquatic resources working group (quarterly)	NEX	\$900		\$300	\$300	\$300
33-12	Meetings - National workshops	NEX	\$9,000		\$4,000	\$0	\$5,000
33-99	Line total		\$62,400				
	039 Summary total		\$142,900				
45-01	Purchase (Office equipment)	NEX	\$26,000		\$18,000	\$4,000	\$4,000
45-02	Purchase (expendable equipment)	NEX	\$55,000		\$16,000	\$32,000	\$7,000
45-04	Operation and maintenance (Vehicles + Petrol)	NEX	\$18,000		\$6,000	\$6,000	\$6,000
45-05	Operation and maintenance (Motorbikes + Petrol)	NEX	\$15,000		\$5,000	\$5,000	\$5,000
45-06	Operation and maintenance (Office equipment)	NEX	\$12,000		\$4,000	\$4,000	\$4,000
45-99	Line total		\$126,000				
47-01	Vehicles (hi-lux x 2 - Central Project Office, Xieng Khouang)	UNDP	\$36,000		\$36,000	\$0	\$0
47-02	Motorbike off road x10 (new project districts)	UNDP	\$16,000		\$16,000	\$0	\$0
47-99	Line total		\$52,000				
	049 Summary total		\$178,000				
52-01	Reporting costs	NEX	\$3,000		\$1,000	\$1,000	\$1,000
52-02	Resource mobilization	NEX	\$2,500		\$500	\$500	\$1,500
52-03	FAO Reporting costs	FAO	\$3,000		\$1,000	\$1,000	\$1,000
52-99	Line total		\$8,500				
53-01	Sundries Centre	NEX	\$18,000		\$6,000	\$6,000	\$6,000
53-02	Sundries - Province	NEX	\$4,500		\$1,500	\$1,500	\$1,500
53-03	Sundries - district	NEX	\$4,500		\$1,500	\$1,500	\$1,500
53-05	NEX management support (3%)	UNDP	\$7,500		\$2,500	\$2,500	\$2,500
53-99	Line total		\$34,500				
54-01	Direct cost	UNDP	\$1,100		\$998	\$0	\$102
54-99	Line total		\$1,100				
	059 Summary total		\$44,100				

	Projected
099 Budget total	\$1,380,100

ANNEX VII - Government contributions

Country: LAO P.D.R.

Project Title: Development of Fisheries Support Services

Project budget covering national contribution (In millions of Kip, Exchange rate \$1 = 7,800)

UNDP Budget Line		No.	Total		Year 1		Year 2		Year 3	
			w/m	Kip	w/m	Kip	w/m	Kip	w/m	Kip
17-00	PROJECT PERSONNEL									
	National Professionals									
	National Project Director	1	36	6.5	12	0.18	12	0.18	12	0.18
	Assistant Project Director	1	36	5.0	12	0.14	12	0.14	12	0.14
	Technical officer 1	1	36	5.0	12	0.14	12	0.14	12	0.14
	Technical officer 2	1	36	4.7	12	0.13	12	0.13	12	0.13
	Provincial Counterpart Officers	5	180	21.6	12	0.12	12	0.12	12	0.12
	District Extension Officers	14	504	60.5	12	0.12	12	0.12	12	0.12
	Component Total		828	103.3	276	34.44	276	34.44	276	34.44
47-00	EQUIPMENT (in kind)									
	Hilux 4-wheel drive (x 2)			250.0		150.00		100.00		50.00
	Component Total			250.0		150.00		100.00		50.00
45-00	Operation & maintenance									
	Office Buildings			82.8	12	2.30	12	2.30	12	2.30
	Electricity & water			32.4	12	0.90	12	0.90	12	0.90
	Component Total			115.2		38.40		38.40		38.40
	GRAND TOTAL		828	468.5	276	222.84	276	172.84	276	122.84

ANNEX VIII - Equipment requirements

The list of equipment required for the project is listed below. The detailed specifications will be set by the Project Manager in consultation with FAO staff and consultants. Prices in US \$.

Item No.	Description	Qty.	Location	Unit Price	Cost
<u>Non-expendable equipment</u>					
1.	Pick up truck, 4WD	2	HQ, PLFO/XK	18,000	36,000
2.	Motorcycle, off road	10	DLFO	1,600	16,000
3.	Computer – desktop	5	HQ/UNV	1,500	7,500
4.	Computer – laptop	1	HQ	2,000	2,000
5.	Computer peripherals	N/A	HQ	3,000	3,000
6.	Data projector	1	HQ	5,000	5,000
7.	Overhead projector and screen	1	HQ	2,000	2,000
8.	Office renovation	N/A	HQ	N/A	6,500
Subtotal					78,000
<u>Expendables</u>					
9.	Vehicle renovation	6	HQ, PLFO	1,000	6,000
10.	PVC piping and fittings for small-scale hatchery development	N/A	TG		10,000
11.	Post harvest processing equipment	N/A	TG		4,000
12.	Happas	500	TG, FP	20	10,000
13.	Fish fry	600,000	TG	0.02	12,000
14.	Brood stock	2,000	PH, FP	1	2,000
15.	Orlon spawning happa	500	PH, FP	21	10,500
16.	Printed material (including lamination)	4,000	TG, DLFO	2	8,000
17.	Video production and copying (extension)	N/A	HQ, PLFO		8,000
18.	Fish feed for cage farmers & nursers	1,000	TG/FP	0.5	500
Subtotal					71,000
TOTAL					149,000

TG = Target groups; PH = Provincial fish hatchery; FP = fingerling producers formed under project; HQ = Livestock and Fisheries Development Division, Vientiane; PLFO = Provincial Fisheries and Livestock Office; DLFO = District Livestock and Fisheries Office

ANNEX IX - Training programmes

The following are brief descriptions of training to be supported under the proposed project:

- i. Specific technical training provided to district counterparts as part of a comprehensive programme to upgrade skills in aquaculture and fish processing technologies

A series of one week courses (two per year) for district counterparts in collaboration with the forthcoming JICA supported “Aquaculture technology and extension project” or organized by the project as necessary.

- ii. Assistance to farmers in developing appropriate aquaculture and fisheries management techniques.

Following on from assessment of aquatic resources management opportunities in target districts, relevant training or study tours will be provided to participating villages. Where necessary external training resources will be mobilized to address capacity shortfalls.

- iii. In-country study tours for to review community managed fish ponds

Province counterparts will be taken to Savannakhet and/or Khammouan province to be given opportunity to meet with communities engaged in community management of fish ponds to review constraints and opportunities for management of communal resources.

- iv. In-country training on hatchery technology for private hatchery operators.

Training in farmer based fingerling production will be held annually as demand warrants.

- v. Study tour to Thailand to review cage culture techniques to assess its applicability to the Lao context.

A study tour to Thailand will be organized selected project counterparts.

- vi. Provincial workshops on participatory extension methodology

A series of workshops for project staff to develop participatory skills in extension methodology targeting resource poor farmers. This is expected to draw on local training organizations under a Letter of Agreement (LOA) as has been used in the past with LAO/97/007..

- vii. Training on methods for credit extension for project staff

Training will be provided to provincial and district level staff on credit opportunities, delivery and monitoring procedures.

- viii. Semi-annual coordination and review workshops on results of provincial activities

These workshops will provide the opportunity to review individual provinces activities and exchange experiences. These workshops will be facilitated by the provincial counterparts themselves.

- ix. Short courses for development of monitoring and reporting systems for project staff.

These courses arranged in response to needs at provincial and district levels for project implementation. The Trainers/UNV specialists will develop and facilitate these courses.

ANNEX X - Project Counterparts and Subjects of their competence

List of Proposed Project counterparts/ Experience & competence

Central level	Provincial level (Agriculture & Forestry Service Office)			
(Department of Livestock & Fisheries)	Oudomxay	Sayaboury	Sekong	Xieng Khouang
<p>Mr. Bounthong SAPHAKDY (Project Co-ordination/ Fishery/ National Project Director LAO/97/007)</p> <p>Mr. Soukhine KEOMANIVANE (Project Management/ Fishery/ Project Manager LAO/97/007)</p> <p>Ms. Nouhak LIEPVISAY (Training/ Co-ordination/ Gender Issues/ Aquaculture/ Post-harvest/ National Project Director TCP/LAO/8823)</p> <p>Ms. Doungdavanh SIBOUNTHONG (Fishery/ Training/ Post-harvest/ Technical Officer TCP/LAO/8823)</p>	<p>Mr. Somnhot PHONGSAVATH (Livestock & Fishery - Provincial co-ordinator LAO/97/007) (Trainer - Subject Matter Specialist)</p> <p>Mr. Phayvane VILIDETHPOMTHONG (Fishery - Assistant Provincial co-ordinator LAO/97/007) (Trainer - Subject Matter Specialist)</p>	<p>Mr. Somneug XAYGNATHI (Fishery - Provincial co-ordinator LAO/97/007) (Trainer - Subject Matter Specialist)</p> <p>Mr. Thongsalop (Fishery) Hatchery Manager Wang Wah Provincial hatchery</p> <p>Mr. Feng PHOMMAKOUN (Fishery - Assistant Provincial co-ordinator LAO/97/007) (Trainer - Subject Matter Specialist)</p>	<p>Mr. Bounseum SOULITHA (Fishery - Assistant Provincial co-ordinator LAO/97/007) (Trainer - Subject Matter Specialist)</p> <p>Mr. Sunthone PHIMMVONGSAH (Livestock & Fishery - Provincial co-ordinator LAO/97/007) (Trainer - Subject Matter Specialist)</p>	<p>Mr. Vandy BOUDAVONGSY (Livestock & Fishery - Provincial co-ordinator LAO/97/007) (Trainer - Subject Matter Specialist)</p> <p>Mr. Sithone MANOTHAM (Fishery - Assistant Provincial co-ordinator LAO/97/007) (Trainer - Subject Matter Specialist)</p>

ANNEX XI - Job Description for National Project Director (NPD)

Duty station: Vientiane (with travel to the project provinces)

Estimated starting date: January, 2001

Duration: 3 years

Qualifications:

1. University degree in fisheries and/or aquaculture
2. At least 5 years experience in fish culture
3. Previous experience as a project manager
4. Demonstrated communication skills
5. Working knowledge of English

Terms of Reference

Under the supervision of the Director General of the Department of Livestock and Fisheries, the incumbent shall be responsible for the implementation of the project in consultation with the Development Advisor (DA) and UNDP. The incumbent's duties will include, but not be limited to the following:

1. Establish the project office.
2. Develop strategies for implementing the work plan.
3. Coordinate project activities with the Provincial and District Agriculture and Forestry Services in the target provinces.
4. Organize workshops and training courses.
5. Liaison with the implementing and funding agencies.
6. Preparation of reports for tripartite reviews, including the final report.
7. Approval of candidates selected for national and international training and workshops.
8. Represent the project at tripartite review meetings.
9. Prepare tenders for subcontracts and select subcontractors on the basis of criteria agreed to by all parties to the project agreement.
10. Approve payment requests for project inputs for submission to UNDP.
11. Supervise project office staff.
12. Ensure effective project delivery in accordance to NEX modality.
13. Establish effective linkages and coordinating mechanisms where appropriate with other ongoing and pipeline projects within the sub-sector.
14. Promote the project to missions, journalists, conferences and other donors for resource mobilization; ensuring cost-sharing/parallel financing donors the credit and attention.

ANNEX XII - Job Description for Deputy National Project Director/Project manager

Duty station: Vientiane (with travel to the project provinces)

Estimated starting date: January, 2001

Duration: 3 years

Qualifications:

1. University degree in fisheries and/or aquaculture
2. At least 3 years experience in fish culture
3. Previous experience of working in a fisheries project
4. Demonstrated managerial skills
5. Working knowledge of English

Terms of Reference

Under the supervision of the National Project Director (NPD), the incumbent shall be responsible for the day to day management of the project. The incumbent's duties will include, but not be limited to the following:

1. Responsibility for project financial management following NEX procedures
2. Prepare and certify payment requests for approval from the NPD and submission to UNDP.
3. Supervise the Administrative assistant
4. Assist in preparing quarterly content-wise progress reports, PPER and final report.
5. Assist in smooth functioning of the project office.
6. Represent the project at different meetings.
7. Assist the NPD in establishing the project office.
8. Implement the work plan.
9. Assist in organizing workshops and training courses.
10. Assist in preparing tenders for subcontracts.

ANNEX XIII - Terms of reference for Development Advisor

Duty station: Vientiane (with travel to the project provinces)

Estimated starting date: January, 2001

Duration: 3 years

Qualifications:

1. At least a Master's Degree in Fisheries or Aquaculture or its equivalent.
2. A minimum of 10 years experience in developing countries in SE Asia, on various fields related to aquaculture or fisheries
3. Demonstrated skills in management of fisheries or aquaculture development project with emphasis on participatory development skills.
4. Work experience in some of the following fields:
 - Development project management
 - Participatory development skills
 - Experience in organizing and conducting training at field level
 - Fish culture/fisheries extension in developing countries
 - Fisheries-related income generating activities
 - Subsistence fish culture systems
 - Culture-based fisheries, artisanal fisheries
5. Proven interpersonal skills in a multi-cultural setting; a good 'team worker'.
6. Fluency in both spoken and written English (official working language) and working knowledge of Lao and/or Thai Language is essential.

Duties and Responsibilities:

The Development Advisor (DA) will report directly to the National Project Director (NPD) of the project. (S)he will:

1. Provide assistance to NPD and Deputy NPD in the following aspects of project management:
 - Prepare/update/implement the project work plan as and when needed
 - Plan, mobilize and coordinate all project activities and assure timely delivery of the Government as well as UNDP/FAO inputs, like project personnel, procurement, (sub)contracting, arranging in-country or overseas training and study tours..
 - Prepare financial forecasts based on the work plans.
 - Co-ordinate project personnel (national counterparts and Trainer's/UNVs) in execution of their tasks.
2. Facilitate project meetings and dialogues between the project and government.
3. Identify training needs and facilitate the training of Central, Provincial and District counterparts:
 - Participatory rural development skills (needs assessment, monitoring and evaluation, facilitation of group meetings etc.)
 - Post harvest fish processing
 - Marketing
 - Monitoring and evaluation
 - Planning and Reporting
 - Financial management
4. Assist in identifying income generating activities in the fields of fish production, fish processing, fingerling production.

5. Develop, with the participation of Province and district offices, a fisheries sector monitoring and information system that is relevant to the information requirements of government (central and provincial)
6. Within the context of the above (4), set up an effective project monitoring and evaluation system at the district, provincial and national levels.
7. Assist in the preparation of periodic progress and financial reports as required by UNDP & FAO.
8. Assist in the preparation of technical papers and reports by the national and international staff.
9. Assist in the mobilisation of resources to complement project activities through liaison with prospective donors and other potential partners.
10. Ensure visibility of the project via; project briefs, pamphlets and news stories for public information; assisting the NPD in visits by missions and journalists; also ensuring the cost-sharing/parallel financing donor the credit and attention.

ANNEX XIV - Terms of reference for Trainer/UNV-Specialist (Participatory rural development)

Duty station: Based in one province (Oudomxay or Sayaboury - to be specified), with frequent travel to all other project provinces.

Estimated starting date: June 2001

Duration: 24 months (initial)

Qualifications:

1. A Master's Degree or proven experience, in rural development/development related field .
2. A minimum of 7 years of experience in developing countries, preferably Asia / SE Asia.
3. Demonstrated ability to train/facilitate learning in the use of participatory methods for the following rural development skills:
 - needs assessment
 - wealth ranking
 - monitoring and evaluation
 - facilitation of group discussions (government level as well as farmer s)
 - gender issues
 - participatory learning and action (or equivalent)
4. Hands-on experience in the following areas is extremely desirable and can substitute for lack of experience in the above categories.
 - community-based fisheries
 - artisanal fisheries/culture-based fisheries
 - rural small-scale aquaculture
 - subsistence farming systems
5. Proven ability to work well in a hardship posting, be willing to learn and must be a good 'team worker' .
6. Must be able to use a computer for word processing and spreadsheets.
7. Fluency in both spoken and written English (official working language)
8. Due to the requirements of working in remote areas with Lao speaking counterparts it is essential that applicants have a working knowledge of the Lao or Thai languages.

Duties and Responsibilities:

For activities in Provincial duty station and other provincial project locations, the Trainer / UNV will work closely with the respective Provincial counterpart and report to the Head of the Provincial Livestock Office. At the same time, the UNV/Trainer will also co-ordinate with and report to the National Project Director/Development advisor regarding national, project-related issues. (S)he will :

1. Assist Provincial and district counterparts in planning, budgeting and effective implementation of project work plans.
2. Provide training/facilitate learning with provincial and district level staff in:
 - Needs assessment
 - Wealth ranking
 - Monitoring and evaluation

- Facilitation of meetings/group discussions (government level as well as farmer s)
 - Gender issues
 - Participatory learning and action (or equivalent)
 - Group formation, organization and group dynamics,
3. Assist in development of methods for facilitation access to institutional credit for fisheries activities.
 4. Establish, as instructed by the NPD, regular professional contacts with any other project (on-going or pipeline) related to fisheries development.
 5. Facilitate the ongoing establishment of an aquaculture and fisheries information system between the district, provincial and national levels.
 6. Assist in the preparation of periodic progress reports as required by UNDP.
 7. Assist in the preparation of technical papers and reports by the national and international staff and prepare reports required by the donor and FAO.

ANNEX XV - Terms of reference for Trainer/UNV-Specialist (Information and reporting)

Duty station: Based in one province (Oudomxay or Sayaboury - to be specified), with frequent travel to all other project provinces.

Estimated starting date: June 2001

Duration: 24 months (initial)

Qualifications:

1. At Master's Degree in rural development/development related field or proven experience in simple information systems, rural extension, rural development.
2. A minimum of 7 years of experience in developing countries, preferably Asia / SE Asia.
3. Previous experience should include ability to train/facilitate learning in the following skills:
 - Activity planning
 - Simple information systems
 - Basic financial management (budget planning, accounting, reporting)
 - Facilitation of meetings
 - Monitoring & evaluation
 - Reporting
4. Hands-on experience in the following areas is extremely desirable and can substitute for lack of experience in the above categories.
 - Rural development
 - Rural small-scale fisheries and aquaculture
 - Subsistence farming systems
 - Logical framework analysis/goal oriented planning
5. Proven ability to work well in a hardship posting, be willing to learn and must be a good 'team worker'.
6. Must be able to use a computer for word processing and spreadsheets.
7. Fluency in both spoken and written English (official working language)
8. Due to the requirements of working in remote areas with Lao speaking counterparts it is essential that applicants have a working knowledge of the Lao or Thai languages.

Duties and Responsibilities:

For activities in Provincial duty station and other provincial project locations, the Trainer / UNV will work closely with the respective Provincial counterpart and report to the Head of the Provincial Livestock Office. At the same time, the UNV/Trainer will also co-ordinate with and report to the National Project Director/Development advisor regarding national, project-related issues. (S)he will :

1. Assist Provincial and district counterparts in planning, budgeting and effective implementation of project work plans.
2. Provide training/facilitate learning with provincial and district level staff and farmers in:
 - Activity planning
 - Simple information systems
 - Basic financial management (budget planning, accounting, reporting)
 - Facilitation of meetings

- Monitoring & evaluation
 - Reporting
3. Facilitate Provincial and district staff in developing their capacity in:
 - Needs assessment
 - Wealth ranking
 - Monitoring and evaluation
 - Facilitation of meetings/group discussions (government level as well as farmer s)
 - Gender issues
 - Participatory learning and action (or equivalent)
 - Group formation, organization and group dynamics,
 4. Assist in development of methods for facilitation access to institutional credit for fisheries activities.
 5. Establish, as instructed by the NPD, regular professional contacts with any other relevant projects (on-going or pipeline).
 6. Facilitate the ongoing establishment of an aquaculture and fisheries information system between the district, provincial and national levels.
 7. Assist in the preparation of periodic progress reports as required by UNDP.
 8. Assist in the preparation of technical papers and reports by the national and international staff and prepare reports required by the donor and FAO.

ANNEX XVI - Terms of reference for Trainer/UNV-Specialist (Post harvest and fisheries/aquaculture)

Duty station: Based in one province (Oudomxay or Sayaboury - to be specified), with frequent travel to all other project provinces.

Estimated starting date: June 2001

Duration: 24 months (initial)

Qualifications:

1. A Degree or proven experience in fish post-harvest techniques, fisheries, aquaculture or equivalent discipline.
2. A minimum of 7 years of experience in developing countries, preferably Asia / SE Asia.
3. Ability to train/facilitate learning using participatory methods for the following skills:
 - Small-scale fish processing
 - Rural small-scale aquaculture
 - Culture-based fisheries
 - Rice-field fisheries
 - Artisanal fisheries
 - Income generation aspects of the above
4. Hands-on experience in the following areas is extremely desirable and can substitute for lack of experience in the above categories.
 - Subsistence farming systems
 - Monitoring & evaluation of extension activities
 - Rural credit issues
 - Simple information systems
5. Proven ability to work well in a hardship posting, be willing to learn and must be a good 'team worker'.
6. Must be able to use a computer for word processing and spreadsheets.
7. Fluency in both spoken and written English (official working language)
8. Due to the requirements of working in remote areas with Lao speaking counterparts it is essential that applicants have a working knowledge of the Lao or Thai languages.

Duties and Responsibilities:

For activities in Provincial duty station and other provincial project locations, the Trainer / UNV will work closely with the respective Provincial counterpart and report to the Head of the Provincial Livestock Office. At the same time, the UNV/Trainer will also co-ordinate with and report to the National Project Director/Development advisor regarding national, project-related issues. (S)he will :

1. Assist Provincial and district counterparts in planning, budgeting and effective implementation of project work plans.
2. Provide training/facilitate learning with provincial and district level staff and farmers in:
 - Small-scale fish processing
 - Rural small-scale aquaculture
 - Culture-based fisheries

- Rice-field fisheries
 - Artisanal fisheries
 - Income generation aspects of the above
3. Facilitate Provincial and district staff in developing their capacity in:
 - needs assessment
 - wealth ranking
 - monitoring and evaluation
 - facilitation of meetings/group discussions (government level as well as farmer s)
 - gender issues
 - participatory learning and action (or equivalent)
 - group formation, organization and group dynamics,
 4. Assist in development of methods for facilitation access to institutional credit for fisheries activities.
 5. Establish, as instructed by the NPD, regular professional contacts with any other project (on-going or pipeline) related to fisheries development.
 6. Facilitate the ongoing establishment of an aquaculture and fisheries information system between the district, provincial and national levels.
 7. Assist in the preparation of periodic progress reports as required by UNDP.
 8. Assist in the preparation of technical papers and reports by the national and international staff and prepare reports required by the donor and FAO.

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