PROJECT DOCUMENT

Country:	Socialist Republic of Viet Nam
Project No:	GCP/VIE/029/ITA
Project Title:	Integrated Management of Lagoon Activities (IMOLA) in Thua Thien Hue Province
Duration:	Three years
Implementing Agency:	Department of Fisheries (DOFI), under the Provincial People's Committee (PPC) of Thua Thien Hue Province
Executing Agency:	Food and Agriculture Organization of the United Nations (FAO)
Government Inputs:	VND 2,058 Million (± US$131 000) (in-kind)
Donor (Government of Italy) Contribution:	US$1 494 990

Brief Description: This project will provide support to people dependent on the lagoon system in Thua Thien Hue (Viet Nam). Its aim is to improve their livelihoods by promoting a participatory sustainable management of the hydro-biological resources in the lagoons, in accordance with the socio-economic and production systems requirements of the population and with particular emphasis on the gender roles, the achievement of food security and the alleviation of poverty. The immediate objectives are: 1) To understand the present issues in the lagoon, with respect to the hydro-biological resources status and use, human activities, current institutional responsibilities and management practices; 2) Based on the sustainable use of natural resources within the lagoon, to identify priority issues in an effort to support the existing, and develop new, management policies in order to improve people's livelihoods and reduce risks for poorer people who are dependent on the lagoon resources. These policies should be developed in a participatory way resulting in a draft Lagoon Management Plan which will provide, in a gender sensitive way, special attention to poverty alleviation amongst landless and lagoon communities; 3) To prepare for the implementation of the Management Plan, including preparation of the official enactment of the plan, implementating strategy at all levels, capacity building, as well as identification of credit, savings, insurance and organizational needs and investment requirements; 4) To strengthen the provincial institutional capacity in such a way that the Management Plan, once approved, will be implemented actively according to the strategies formulated and that the provincial institutions are able to formulate and implement policies related to the management of the lagoon system that are environmentally and socially sustainable; finally 5) To disseminate the findings and results of the project on a national and international basis, so that others may use this example in their formulation of Management Plans. By disseminating the knowledge gained it would most probably attract the interest of donors and government agencies for similar plans in other provinces in Viet Nam

United Nations official exchange rate at the date of signature of Project Document:
US$ 1.00 = VND 15,700.00

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Acronyms

ACIAR	Australian Centre for International Agricultural Research
ADB	Asian Development Bank
AIT	Asian Institute of Technology
APO	Associate Professional Officer
ASEAN	Association of South East Asian nation
AUSAID	Australian Development Cooperation Agency
CIDA	Canadian International Development Agency
CPUE	Catch Per Unit of Effort
CCRF	Code of Conduct for Responsible Fisheries
CTA	Chief Technical Advisor
DANIDA	Danish International Development Agency
DARD	Department of Agriculture and Rural Development
DOFI	Department of Fisheries
DOSTE	Department of Science, Technology and Environment
DOLISA	Department of Labour, Invalids and Social Affairs
FAO	Food and Agriculture Organization of the United Nations
GCP	Government Cooperative Programme
GIS	Geographical Information System
IDRC	International Development Research Centre
IUCN	World Conservation Union
IMOLA-HUE	Integrated Management of Lagoon Areas–Thua Thien Hue
LAPROCOF	Lagoon Projects Coordination Office
LEP	Law on Environmental Protection
MARD	Ministry of Agriculture and Rural Development
MOFI	Ministry of Fisheries
MOSTE	Ministry of Science, Technology and Environment
MOLISA	Ministry of Labour, Invalids and Social Affairs
MRC	Mekong River Commission
MT	Metric Tons
NACA	Network of Aquaculture Centres in Asia
NEX	National Execution
NORAD	Norwegian Development Agency
NPD	National Project Director
NPM	National Project Manager
PRA	Participatory Rural Appraisal
PPC	Provincial People's Committee
RIA No.1	Research Institute for Aquaculture No.1
RIMF	Research Institute Marine Fisheries
SAPA	Sustainable Aquaculture for Poverty Alleviation
SPS	Sector Programme Support
SME	Small and Medium Enterprises
SIDA	Swedish Development Agency
TOR	Terms of Reference
TPR	Terminal Project Review
UNDP	United Nations Development Programme
VND	Vietnamese Dong (currency)
VNICZM	Viet Nam Netherlands Integrated Coastal Zone Management

PART I. PROJECT AGREEMENT

1. Within the framework of its agreement with the Government of Italy (the Donor Government) and upon request of the Government of the Socialist Republic of Viet Nam (the Government), the Food and Agriculture Organization of the United Nations (FAO) will supply assistance for the execution of the following project once it is accepted by the Donor Government:

Project Title:	Integrated Management of Lagoon Activities (IMOLA) in Thua Thien Hue Province
Project Symbol:	GCP/VIE/029/ITA
Estimated Costs:	Donor Government's contribution: US$1 494 990
	Counterpart contribution: VND 2,058 Million (in kind)
Planned Duration:	Three years

A detailed description of project design, including background, purpose, budget and work-plan, is provided in Part II of the present document.

FAO OBLIGATIONS:

2. FAO shall be responsible for the recruitment, international travel, salaries and emoluments of the international staff shown in Part II (E2). Appointments of international staff shall be submitted to the Government for clearance. All international staff will work under the direction of the Chief Technical Advisor, who is responsible for the technical co-ordination and execution of the project.

3. FAO will provide the necessary equipment and supplies shown in Part II (E2) (detailed in Annex 2). The equipment will remain the property of FAO for the duration of the project. Its ultimate destination shall be decided by FAO in consultation with the Government.

4. FAO will arrange for yearly supervisory travel visit to the project, to be financed from project costs as shown in Part II (H) (detailed in Annex 3).

5. All FAO's obligations arising under this project document shall be subject to (i) the decisions of its governing bodies and to its constitutional, financial and budgetary provisions, and (ii) the receipt of the necessary contribution from the Donor Government. Any obligations assumed by FAO may, at any time, be taken over by the Donor Government.

6. FAO may, in consultation with the Government, execute part or all project by sub-contract. The selection of the sub-contractors shall be made, after consultation with the Government, in accordance with FAO's procedures.

GOVERNMENT OBLIGATIONS

7. The Government shall take all necessary measures to facilitate the execution of the project and to assist the FAO staff in obtaining such services and facilitates as they may require to fulfil their tasks. The Government shall apply to FAO, its property, funds and assets, its officials and to the persons performing services on its behalf, in connection with the project, the provisions of the Convention on Privileges and Immunities of the Specialised Agencies, the currency exchange rate established with the United Nations.

8. The Government shall deal with any claims brought by third parties against FAO, its personnel or other persons performing services on its behalf in connection with the project, except when it is agreed by FAO and the Government that such claims arise from gross negligence or wilful misconduct of such persons.

9. The Government shall be responsible for the recruitment, salaries and social security measures of the national staff. The Government shall also provide the facilities and supplies, as and when required for the project.

10. The Government shall grant to the staff of FAO and of the Donor Government and to persons acting on their behalf, access to the Project site and to any material or documentation relating to the Project and shall provide any relevant information to such staff or persons.

11. The Government is responsible for the cost of import and customs clearance of project equipment, its transportation, handling, storage and related expenses within the country; its safe custody, maintenance, insurance and replacement, if necessary, after delivery to the project site(s).

REPORTING

12. FAO will report on the project to the Donor and recipient Government as detailed in Part II (H). The financial reports to be issued by FAO will be limited to the contributions received from the Donor and the corresponding disbursements made by FAO.

13. The Government shall agree to the dissemination of information like descriptions of the project and of its objectives and results, for the purpose of educating the public opinion.

AMENDMENTS AND TERMINATION

14. This project document may be amended or terminated by mutual consent. Termination shall take effect sixty days after receipt by either party of written notice from the other party. In the event of termination, the obligation already assumed by the Government shall remain in force to the extent necessary to permit orderly withdrawal of the funds and assets of FAO and of personnel performing services on its behalf.

15. This project document shall enter into force upon signature by both parties.

The People's Committee of Thua Thien Hue Province	For the Food and Agriculture Organization of the United Nations
.....……	.....
Date:	Date: .....

PART II. PROJECT DESIGN

A. GENERAL BACKGROUND

A.1. Description of the sub-sector

Context

Fisheries is a very important sector for the development of Viet Nam when taking into account its contribution to the achievement of food security, the alleviation of poverty, sustainable livelihood creation, economic growth and in the generation of rural employment. Viet Nam has 3,260 km of shoreline with 112 estuaries, one million square kilometers of Exclusive Economic Zone including many islands, bays and lagoons. The total annual allowable and sustainable catch is estimated to be approximately 1.5 million tons. Next to the opportunities in the marine environment there are about 1.8 million ha of water-surface available and suitable for aquaculture in Viet Nam.

As a result of the Doi Moi policy, Viet Nam's fisheries sector presented during the last five years an average annual growth in production of between 5 and 12 percent, while the exported value increased by circa 20 percent per year during the same period. Fish production has been rapidly increasing from less than one million metric tons (MT) in 1990 to 2.2 million MT in 2001, which is 11 percent higher than in the year 2000. At present the fisheries sector contributes around nine percent to the GDP of Viet Nam. The export valued at almost US$1.8 billion in 2001, which is 20 percent higher than in the year 2000. The total export volume of fisheries and aquaculture products combined reached 359.000 MT in 2001.

Thus, the fisheries sector is very important for the Vietnamese Government, because of its contribution to the foreign export earnings, as third largest export commodity. In addition, fish accounts for approximately 30 percent of the animal protein in-take of the Vietnamese population, making it a commodity which plays a major role in the establishment of food security in Viet Nam.

The Ministry of Fisheries in Viet Nam estimates that the number of people employed in the sector is in the range of 3.4 million. However, the number of Vietnamese active in the sector is probably even higher when taking into consideration that large numbers of rice-farmers also grow fish (extensively) in their paddies, canals and in small ponds on their premises. Of the 3.4 million people employed in the sector more than 700 thousand people are involved in aquaculture activities. It is expected that the number of labourers in aquaculture related activities will increase further, and that in 2005 more than 45 percent of the total volume produced by the fisheries sector as a whole will derive from aquaculture.

The majority of the Vietnamese families involved in fisheries can be classified as small-scale family businesses, which struggle for existence around the poverty line. As coastal fish stocks decline their living standards will deteriorate even more unless they change the techniques they use, and manage their resources differently; or even switch to other activities such as aquaculture. Unemployment, or under-employment, is a danger which these families have faced increasingly more during the last few years, because their harvests are getting smaller. This is also indicated by the Catch per Unit of Effort (CPUE), which indicates an approximate level where, considering the costs and benefits of the activity, it does not pay economically to go fishing.

The restructuring of the fishing industry has created an enormous challenge to the poorer families involved in coastal fishery. Generally, they lack the possibility to invest in equipment to fish further offshore and are therefore often deemed to continue working in the same conditions. If nothing is done about the instream of people in the sector, and considering the depletion of the near-shore fishery stocks, it will be most difficult to guarantee a future for the coming generations inside the fisheries sector.

Coastal area management

Although many examples of coastal lagoon management exist world-wide, the situation in the Tam Giang-Hue Lagoon is very specific, taking into account the size of the lagoon (length 70 km) and the high population density, with about 300 000 people gaining part of their livelihood directly from activities in the lagoon area. With a substantial human impact and large variability in the lagoon environment, due to interaction of fluvial and tidal regimes, inlet instability and recurrent floods, planning and management must stem from a sound knowledge of the lagoon system and its functioning principles as a whole. In relation to the population which relies on lagoonal activities, it should be noted that there is an enormous pressure on the water-surface resources by different groups and for various activities, like fishing, aquaculture, transport and tourism. Furthermore, the farmers and industries in the area use the water for their own purposes, with the accompanying effluents that enrich sometimes but more often than not contaminate the lagoon water.

Due to the nature of fishing activities conflicts are common, both within the sector and as a cross-sectoral. Given the open access or common property status and f limited nature of the lagoon resources it is not always easy to avoid conflicts, but they can often be handled effectively and to general satisfaction. Conflicts within the sector, which already exist in the Tam Giang Lagoon, are for instance the incompatible use of fish gear and methods. Some fisherfolk use fixed gear; others mobile gear or electrically run fishing methods. Moreover, capture fisheries is in conflict over site location and other reasons related to the fish farming practices.

The fisherfolk sometimes also have conflicts with other resource users, including those from the agriculture and forestry sectors, but also with tourism and local authorities, when roads and ports are envisaged. Some conflicts involve locally identifiable actors, while others may involve parties that are difficult to pin down (e.g. situation resulting from erosion provoked by distant deforestation)

It is most important to establish strong and effective mechanisms for conflict resolutions and this should be one of the concerns of this project which will produce the Integrated Management Plan, including clear administrative procedures, policies and regulations on how to deal with arisen conflicts.

A.2. Host country strategy

A coastal management programme which takes into consideration the fishery and aquaculture activities does not exist yet in Viet Nam. Although recently a number of initiatives have been taken which address the prevention of floodings and the reforestation of the mangrove areas within the coastal wetlands, and which try to conserve the natural resources. The fisheries sector has, to date, not been highly involved in these initiatives. This does not imply that the Ministry of Fisheries is not committed to the development of coastal aquaculture and fisheries in relation to the alleviation of poverty and the sustainable exploitation of the coastal resources. Rather, it is a result of the fact that funds and capacity are lacking at MOFI for the establishment of a sustainable programme in this area. The “Master Plan for Fisheries to the Year 2010” of the Ministry of Fisheries expresses the following objectives for the fisheries sector:

1. Maximizing the sustainable contribution of fisheries to the national economic and social development, including social stability and national security.

2. Maximizing employment and improving the incomes and living standards of rural communities dependent on fisheries for their livelihood and sustenance.

3. Improving the nutritional standards of the population by increasing the supply of aquatic products to domestic markets and improving the access of people to aquatic products.

4. Ensuring that all fisheries and fishery related activities are sustainable for this and future generations to continue benefiting from fisheries.

5. Increase the export of aquatic products and the net foreign exchange earnings that may derive from such exports.

6. Accelerating modernization and industrialization of the fisheries sector and its associated industries to improve the economic and financial efficiency of the sector and to establish and maintain comparative advantages.

7. Adapting an outward oriented industry environment to fully integrate Viet Nam's fishing industries into the economic system of the region and the world. Including the adaptation and compliance with regional and international fisheries related agreements and provisions that are in existence and that might be approved from time to time.

These objectives were translated in the following cross cutting issues which need to be considered and incorporated in all development efforts carried out by the ministry, donor agencies and institutions active in the sector:

- Improve the social and socio-economic conditions of fisheries, aquaculture and coastal communities depending on fisheries for its subsistence and social well being. Special strategic focus will be put on supporting poverty alleviation and strengthening the role of women in society.

- Improve the technological base with respect to the conduct of fisheries, aquaculture and related activities. Technologies will also be enhanced to improve the monitoring and management of the environment and the ecosystems forming the basis for fisheries. Management technologies will be improved and enhanced to support an overall improvement in the management capabilities of the Ministry, its agencies and entities involved with fisheries and aquaculture.

- Improve the management of the environment, the countries natural resources and ecosystems. Appropriate legislation will be introduced and enforced. These will be supported by improved resources surveys, monitoring of fishing and aquaculture activities to ensure compliance with administrative provisions and legislation.

- Improve and develop the human resources to effectively participate in the benefit from the opportunities in fisheries and aquaculture. This will be supported through extensive training and other efforts aimed at strengthening the human resources of the country. A special emphasis will be put on seeking to establish educational and information systems to support improved management and use of the environment and coastal ecosystems.

- Improve the support given to the commercial sector, including promotion of private sector participation in the development process. A key feature of the strategy is to ensure that the legislative, administrative and infrastructural framework is improved to support private sector initiatives and enterprises.

The aquatic resources and the wider environment
The FAO "Code of Conduct for Responsible Fisheries" (CCRF) is actively used by MOFI as base for its aquatic resource management policies and activities. It has just recently been translated into Vietnamese and has several guidelines related to it.

The current work of MOFI/FAO and NORAD on the new national fisheries law and related regulations, which started in 1999, will most likely terminate in early 2003. The adoption of the law in 2003 will open the way for improvements in national aquatic resources management.

In 1994 the Law on Environmental Protection (LEP) came into effect which has been further elaborated in various decrees and regulations. The Ministry of Science, Technology and

Environment (MOSTE) is the responsible national agency for the coordination of the environmental protection and is the only agency in Viet Nam so far involved in Environmental Impact Assessments (EIA). Additionally, the Ministry of Agriculture and Rural Development (MARD) has produced several decrees in the area of sustainable agricultural development to complement the LEP.

Poverty alleviation
MOFI, as national agency responsible for the sustainable development of the fisheries sector, also takes in consideration the role of the sector in poverty alleviation. Activities such as the Sustainable Aquaculture for Poverty Alleviation (SAPA) strategy and implementation programme, developed in a participatory way in 2000- 2001, show the interest of the provincial and national policymakers, bilateral and multilateral institutions and agencies in this regard.

SAPA is now an official government sub-programme under the national Hunger Eradication and Poverty Reduction (HEPR) Programme, which guarantees a considerable government contribution to the sector. In addition, MOFI together with FAO assured that fisheries and aquaculture issues were incorporated as part of the Government/World Bank Comprehensive Poverty Reduction and Growth Strategy (GPRS) paper. On the basis of this paper the World Bank and IMF will provide development loans to the Vietnamese Government.

Moreover, projects such as the UNDP/FAO/MOFI which executed VIE/98/009/NEX in three Northern provinces has proven that that aquaculture can play a major role in rural poverty alleviation if the poor and small scale farmers are trained in aquaculture techniques and by demonstration how to construct ponds.

Gender
In the fisheries sector, the role of women's day to day activities are generally under-rated. They are considered "active" in repairing gear, pond preparation and maintenance, fishing and aquaculture activities, transport processing and marketing of fishery products. The Vietnamese Government recognized the gender inequality in many sectors and responded with a National Platform for the Advancement of women to the year 2000. This platform outlined amongst others the following objectives: increased participation of women in leadership positions, better training opportunities, and increase the role of women in the management of natural resources.

Decentralization
In Viet Nam the provinces have their own provincial departments of Ministry responsible for the overall management of the execution of the national and provincial policies which are in their area of responsibility. In other words the provincial Department of Fisheries (DOFI) receives administrative and technical guidance from MOFI. However, the provincial People's Committee manages the everyday activities of the DOFI and establishes the goals set during the ark of five years for example "Five Year Plan 2001-2005" for the provincial fisheries sector and the "Fisheries Export Development Program of Thua Thien Hue to the year 2005". Each provincial department has a five year plans; coordination exists among the various provincial departments but could be increased, especially with regard to the lagoon management, where departments have a great opportunity to produce together a sustainable outcome, by actively participating in the elaboration of the Integrated Management Plan.

A.3. Provincial context

Thua Thien Hue is a coastal province in central Viet Nam. The province has a coastline of 126 km and contains the Tam Giang – Cau Hai lagoon system; the largest coastal lagoon system in Southeast Asia. This lagoon system covers five coastal districts and forms a source of livelihood for more than 300 000 people, i.e. nearly one-third of the provinces' population.

The lagoon system is very large and consequently complex from a hydrological and geomorphologic standpoint. Five large rivers, the Huong, Bo, O Lau, Dai Giang and Truoi rivers discharge their waters and sediment loads in different lagoon compartments, providing nutrients and organic matter and contributing to the high aquatic productivity of the lagoon. The lagoon has three inlets, Thuan An, Tu Hien and Lang Co, with an average depth of 1.5 metres. The deepest region is more than ten metres at Tan My, near Thuan An inlet. The lagoon is separated from the sea by a long and extensive beach barrier complex and coastal sand dunes. It is surrounded on the inshore areas by rice fields and mountains. Due to fluctuating tidal conditions and seasonal climatic changes the estuarine system is very dynamic, with significant daily and seasonal fluctuations in environmental conditions, fish catches and topography.

The production of food through aquaculture and capture fisheries from the lagoon constitutes an activity of major economic and social importance to the province. The total fisheries catch from the lagoon, including aquaculture, was estimated to be around 4 600 tonnes in 2001, an increase of 12 percent in comparison to the year 2000. About one third of the fisheries sector lagoon production is produced by the aquaculture sub-sector. The 300 000 people living on and around the lagoon, many of who are very poor are involved in fishing and aquaculture or undertake various agricultural activities along the shores. There are estimated to be 100 000 people whose livelihoods are directly dependent on fishery and aquaculture, and 200 000 people whose livelihood drives from various activities including agriculture and part-time aquaculture and capture fisheries. There are also an estimated 1 500 households living on boats within the lagoon; these households are known to be extremely poor. They are heavily dependent on aquatic resources for food and income. Their livelihoods are threatened by various activities, including declining fish catches and increasing difficulties in accessing fishing grounds.

The human and ecological significance of the lagoon goes beyond those people immediately involved in fishing and aquaculture, as the lagoon is an important nursery area for inshore and offshore fish species, thus indirectly supporting the livelihoods of people living along the coastal area in the central part of Viet Nam. The lagoon system is also attractive for tourism in Thua Thien Hue and therefore offers potential contribution to economic development within the province as a whole. The ecologically important and unique nature of the lagoon system is also internationally recognised and the wetlands on the northern shore will become an official RAMSAR site in the near future.

Needless to say that with such a diversified range of interests and activities concentrated on the lagoon, efficient planning must stem from the detailed knowledge of the natural system functioning principles; including its natural and anthropogenic threats, its vulnerability and its regeneration potential. Protection strategies of sensible areas along with intensive usage of natural and biological resources must derive from a comprehensive understanding of the lagoonal system, being aware that each part of it is an integral constituent of the natural system as a whole. The lagoons of Thua Thien Hue, their ecological condition and capacity to support human development, are threatened by various activities (fishing, aquaculture, agriculture, tourism, transport and industry development). The changes are thought to be due to overfishing and loss of nursery areas, due to the reclamation of land for agriculture and poorly planned aquaculture development in some locations. Information on the impacts is scarce and understanding of underlying causes and strategies to improve the situation is extremely limited. For these reasons, a) rationalization of existing information, b) development

of a coherent research programme, and 3) development of a lagoon model is a pre-requisite for any integrated management planning.

A.4. Prior and on-going assistance

Currently only five projects are being implemented that incorporate activities related to Thua Thien Hue Lagoon system. Two projects are research driven and attempt to gather data about the biological and socio-economic situation of the lagoon and the population dependent on the lagoon:

IDRC project: Management of Biological Resources in Tam Giang (Viet Nam)
This project started in 1995 and used a community based natural resource management research to collect data and develop a base for sustainable aquaculture production and addressing technological, organizational and regulatory issues. This project worked together with two universities in Hue City (University of Science and the University of Agriculture and Forestry) and the provincial DOFI and DOSTE and focused on two communes Quang Thai and Phu Tan. In 2001 the project closed, as funds ran out. However, should FAO proceed with the IMOLA-Hue project, IDRC has already agreed to assist with technical advice on participatory issues.

LAPROCOF project: Program for knowledge and valorization of the lagoons of Thua Thien (1997-2001). This project was executed by the University of Science, University of Lille (Nord Pas de Calais region in France) and the provincial DOSTE and DOFI. The objectives were to build a database on water quality parameters and provide a scientific follow-up to the experimental programmes of the University of Science which were carried out on three sites (Loc Dien, Loca Hai and Dien Hai) in the lagoon. The LAPROCOF office is officially closed, but information is still available. The database continues to be maintained by the University.

Two other projects aimed at the improvement of aquaculture practices in the area are:

FAO-TELEFOOD project: Establishment of a small scale shrimp hatchery in Thuan An Commune, Phu Vang District, Thua Thien Hue(TFD 99/VIE/003). This small project, which started in October 2000, supports the poor shrimp farmers that after the floodings of November 1999 did not have access to new shrimp larvae anymore. The provincial DOFI is the executing agency that supports a group of shrimp farmers with technical advice. This project officially closed in March 2002, however the benefits still continue to reach the target group as the hatchery is still operating.

VIE/97/030/NEX UNDP/DANIDA project: Environmental Management of Coastal Aquaculture. This project started in 2000 in three provinces: Thanh Hoa, Nghe An and Thua Thien Hue and its objectives were: 1) to develop and disseminate improved environmental management systems for coastal aquaculture; 2) produce coastal aquaculture development plans which take into consideration the environment; and 3) strengthen the capacity of provincial and district aquaculture workers. FAO received funds from UNDP to technically assist this project in the organization of shrimp farmers and provision of policy advice to provincial authorities.

VNICZM pilot project The Netherlands. This project started in 2001 in the province and formed part of the long term Viet Nam Netherlands Integrated Coastal Zone Management (VNICZM) 2000+ Programme. The VNICZM Pilot Project in Hue, funded by the Netherlands, was part of the larger Viet Nam-Netherlands ICZM project, which has been implemented in 3 provinces (Thua Thien Hue, Baria- Vung Tau and Nam Dinh). The main objectives of the larger project were: 1) to establish the required institutional structures at national and provincial level for ICZM; 2) to expand institutional and professional capacity to apply ICZM and raise awareness about ICZM issues and opportunities; 3) to develop long term Strategy and Action plans for ICZM at national and provincial level, and 4) to initiate short term application of ICZM

in three selected provinces through practical problem solving approaches. The activities of the project in Thua Thien Hue focused mainly on the training of institutions and universities, capacity building of future ICZM managers, pollution monitoring, legislation, wetland protection and flood prevention analyses and activities. The project stopped temporary in late 2001, as the interests of the project partners differed too much and redefinition of goals needs to take place; however in 2002 it re-initiated its activities and is now (2004) near a successful closure. Preparations for a second phase are on-going.

Prior projects in Thua Thien Hue with relation to Aquaculture, Fisheries and Coastal Area Management are the following according to the UNDP Development Co-operation Viet Nam 1999 Report:

VIE/AGR/0098 UNDP/FAO project: Seaweed Culture and Processing (1989 –1993).

VIE/DIS/0047 AUSAID/UNDP Sea dikes, planning design, construction and quality control (1993-1998).

VIE/AGR/0356 ICDS Fishing village development (1992-1993).

At the national level several donors supported projects related to Coastal Management:

VIE/AGR/0454 CIDA Living coastal resources, ASEAN (1994-1995) which included workshops to improve the effectiveness of resource management.

VIE/AGR/0462 ADB/MARD Coastal aquaculture study (1995-1996) study to formulate a framework for sustainable aquaculture development in Viet Nam.

VIE/NAT/0294 SIDA Coastal sensitivity mapping (1995-1996) study of environmental conditions of Vietnamese coastline

VIE/NAT/0298 SIDA Provincial coastal management (1995-1997) Integrated Coastal Management Pilot project in Nghe An and Quang Binh.

VIE/NAT/0318 SIDA (1997-1998) Development of multi-sectoral planning for coastal research

VIE/NAT/0397 World Bank (2000- ongoing) Coastal Wetlands Protection and Development Project.

The IUCN is assisting the provincial DOSTE to designate a small part of the north of the Tam Giang lagoon, where the O Lau River enters the lagoon, as RAMSAR site. At the national level the RAMSAR administrative authorities of Viet Nam, especially the National Environmental Agency (NEA), are positive that the site will become a reserve for bird life and a breeding place for aquatic animals. DOSTE approved the creation of the site but funds are limited to cover all costs involved in its establishment. Apart from this, IUCN launched in 2002 a project for the sustainable management of the Perfume River, which streams into the Tam Giang Lagoon and thus is very relevant for the activities under this project.

At present DANIDA, the World Bank and ADB are involved in mangrove reforestation programmes to protect the coastline of Viet Nam, mainly in the southern provinces.

In the year 2000, at the Ministry of Fisheries in Hanoi, DANIDA started the Fisheries Sector Program Support (SPS). Two of the components in this program dealt with sustainable aquaculture development namely: the project Sustainable Freshwater Aquaculture (SUFA) and the Sustainable Marine and Brackish Water Aquaculture (SUMA). These projects have at present no plans for activities in Thua Thien Hue, but coordination with them could probably take place in a later stage, as both will run until 2005.

Despite the fact that intense research activities have been carried out in the past decades on the lagoon environments, integration of information into a coherent lagoonal natural systems model is still lacking. Two major problems are considered to limit the effects of scientific investigation carried out so in the Tan Giam-Cau Hai lagoon: firstly, most projects aimed to respond to local and immediate practical needs. They were too focused and missed the general perspective, indispensable to understand a complex and interconnected natural system. An integration of information and translation into a coherent database and model is thus very much in demand at this point in order to support efficient planning. Secondly, most of the investigation and planning activities aimed to respond to sociological and economic issues, not considering sufficiently the deeper interactions of the natural system as a whole and its basic functioning principles. This is a necessary step to undertake in order to conduct a successful integrated management plan. Integrated management must include a) knowledge of the natural system and its functioning principles, b) monitoring the natural system for short-term and long-term changes, c) integrating existing information in computerized GIS-based databases, d) modeling the natural system and understanding functionality of each integral constituent.

Although none of the above-mentioned projects are dealing with Integrated Lagoon Management, the various projects provide good opportunities for positive information exchange and cooperation with this project to maximize its impacts and effectiveness of activities.

A.5. Institutional framework for the sub-sector

Since 1978 the Ministry of Fisheries in Viet Nam is in charge of the overall management of the Vietnamese fisheries sector. The administrative system, at the national level, of the ministry consists of 10 departments: 1) Planning and Investment; 2) Science and Technology; 3) Fisheries Management; 4) Fisheries resource conservation; 5) Finance and accounting; 6) Personnel and Labour; 7) International cooperation; 8) Administration; 9) Legislation; 10) Extension, and 11) Inspection.

At the provincial level the decisions, policies and regulations made at national level are implemented by the Provincial People's Committees, which are the administrative authorities who can make resolutions, decisions, standards and quotas on fisheries within the provinces. However, these should not be in conflict with national regulations. The Provincial People's Committees are allowed to establish a provincial department of fisheries (DOFI) as well as departments of other ministries such as Science, Technology and Environment (DOSTE), etc. At present, only some provinces without any coastline do not have a DOFI. The following tasks can be accounted as responsibilities for the Provincial People's Committees: define fisheries potential and resources of the province, formulate fisheries strategies and plans, undertake actions to protect fisheries resources and the environment, issue fishing licenses, setup standards and procedures for local fisheries, organize the fisheries sector within the province, setup safety measures for vessels, inspect and monitor the preservation of resources and implement the regulations and policies on local fisheries, be responsible for quality and hygienic standards of fisheries products, identify and adjust appropriate policies and regulations, and organize and conduct training of cadres and other activities in planning, investment, finance and accounting.

At the district level there are in general one or two staff/ per district responsible for fisheries extension services. At the commune level one or two Commune People's Committee members are appointed to be in charge of the fisheries and aquaculture management. These people receive advice and are assisted by the fisheries extension officers at district level. Sometimes this system works well, however for large changes in the management of the resources, as is the case with this proposed Integrated Management Plan, more staff is needed (on a temporary basis) in order to increase the speed and quality of communication between the various levels.

Research institutes under the Ministry of Fisheries
There are three Research Institutes for Aquaculture RIA (1, 2, 3) of which the project area is based in the geographically assigned area to the RIA No.1. This research institute is not only specialized in research into freshwater aquaculture but also in marine and brackish environments. Moreover, there is the Research Institute Marine Fisheries (RIMF), the Fisheries University in Nha Trang and the University of Can Tho, south of Ho Chi Minh City which all work in the fields of aquaculture and fisheries. To assist these institutes on economic aspects there was established an Institute of Fisheries Economics and Planning in Hanoi, at the premises of MOFI.

Within Thua Thien Hue province the main research institutes in the field of aquatic research and aquaculture are the Universities of Science and the University of Agriculture and Forestry. Furthermore, assistance in the sector to fisherfolk, fish/shrimp farmers, middlepersons and processing companies is provided by the DOFI.

B. PROJECT JUSTIFICATION

B.1. Problems to be addressed: the present situation

The Tam Giang lagoon system in Thua Thien Hue province, Viet Nam, with its 70 km length along the coast and its 22 000 hectares of water surface is one of the largest systems of its kind in the world. The lagoon is considered to be very important for the development of the province as a whole. The lagoon resources provide food security opportunities to the generally very poor people living in small boats (sampan people) on (about 1 800 households) and near the shores of this lagoon. Most of the hundreds of thousands of people living in the area are largely dependent of the activities they can carry out on the lagoon as aquaculture (shrimp, seaweed, and carp), fisheries, transport and tourism. However, all these activities put a high pressure on the lagoon system and the natural resources it offers. The uncontrolled construction of shrimp ponds and the establishment of fixed gear make it more and more difficult to reach all areas of the lagoon; neighboring agriculture land is affected by the salinity which increased as a result of the removal of primary dykes to create shrimp ponds. Farmers and fisherfolk are competing for the access of land and water resources because both want to diversify their activities and be less vulnerable in case of floodings or bad harvests. Government Decree 64/CP allows the local authorities to allocate land with “aquaculture potential” to individuals, however the resulting property rights are distributed very unequally. Another key problem in the lagoon is electric fishing, practiced extensively by many fisherfolk over whole the lagoon. Although there exists a ban on this type of activity by the local government the enforcement has proven to be ineffective so far.

Every year, around October/November, in the middle of the Tropical Monsoon season, central Viet Nam and especially the Thua Thien Hue province has to cope with some serious floodings. Fisheries, aquaculture and many other activities are paralyzed for some weeks. In most years some damage is caused to fishery equipment and the existing aquaculture ponds in the lagoon area. However, the floodings are some years worse than in others.

For example, in November 1999, floods devastated large parts of the Thue Thien Hue province. Districts and people living adjacent to the Tam Giang lagoon in particularly were severely affected. The flood destroyed the dyke separating the lagoon from the sea at three locations, causing major damage and loss of lives. More than 200 people died in these floods, 100 houses were lost and many more severely damaged, many kilometres of road, electricity pylons, fishing boats, aquaculture ponds and four fish/shrimp hatcheries were lost with the flood. The Provincial Department of Fisheries estimated that 80 percent of the ponds, seaweed culture areas, and shrimp pens were lost, resulting in an economic loss to aquaculture of US$850 000. Fortunately the shrimp cultivated that season had already been harvested in September so the damage was less than would have been the case with a standing stock. The sand bar separating the lagoon from the sea was also breached in several places; a new opening appeared near the Con Dau estuary at Hai Duong commune,

leaving a 200m wide break of one to four metres depth. In the Hon Duan estuary at Thuan An commune a 700m wide gap of three to seven metres deep was made; and in Vinh Hai estuary near Vinh Hai commune a 50m wide and two to five metres deep gap was the result. Although the fish culture harvests and catches in the first semester of the year 2000 increased compared to the year before, many households were still recovering from the floodings. Apart from the direct damage to people's livelihoods, the effect of the accompanying environmental changes on the lagoon's ecological environment are poorly understood. The new opening near Hai Duong commune has been closed in November 2000 but the consequences for the environment (hydro-biological resources) are not well understood yet.

In October 2001 again various serious floods hit the coastal provinces in central Viet Nam. Damage to arable crops, fishing equipment and infrastructure was again considerable, but less than in 1999.

In July-August 2002, hundreds of shrimp farmers active in and around the lagoon lost large parts and sometimes even their complete production as a result of the drought. Hundreds of MT of shrimp were lost due to the increased salinity that came with the drought and the sector asked government assistance to rehabilitate and restart.

The recent floods and droughts in the province have highlighted the vulnerability of people living around the lagoon and the need for urgent action to deal with the present situation and plan for the improving the overall future management of the system. An efficient managing programme must take steps from full comprehension of the lagoon functioning principle so that each physiographic element of the system and ecosystem will be evaluated for its economic potential, vulnerability, value as a natural defence and capability to support the impact of a living community. The consequences of not taking further action would be an overall deterioration of lagoon sub-environments, with repercussions on the natural coastal environment as a whole and this would translate in further lowering of the quality of people's livelihoods and hydro-biological resources in the lagoon in the long run. The Provincial authorities of Thua Thien Hue recognise the need for effective formulation and implementation of a management strategy for the lagoon system. However, the authorities do not have the capacity and funds to carry out a project like this with all its implications in the way of improving education on environmental issues, raising awareness for natural resources conservation, promoting scientific investigation on the coastal environment and investments for monitoring. Therefore the IMOLA-Hue project will assist the Provincial People's Committee (PPC) and especially the Fisheries Department under the PPC in the participatory development of a strategy for the lagoons management, based on an understanding of the current status of the ecological and physical system and livelihoods of people in and around the lagoon. It will support the efforts of the PPC and provide the means, (as there are technical advice, training and funds), to strengthen the capacity of the institutions, which will implement the Integrated Management Plan, and for identifying key follow-up actions.

B.2. Expected end of project situation

At the end of the project the following can be expected.

- A full understanding of the principles upon which the lagoon functions, with each lagoon's sub-environments and physical element properly evaluated for conservation, economic development (fisheries, aquaculture, tourism, etc.) defense potential and vulnerability to human impact. Multi-temporal analysis of the natural system will help in forecasting short term variations of the environment and quality deterioration. A detection system will have been set up to monitor the quality of the environment.

- A detailed assessment of the impacts of the yearly floodings and the continuous pressure on the hydro-biological environment and the livelihoods of the lagoon people will have been supported; and all data will have been incorporated in the improved database system of

LAPROCOF which will run at low costs, be updated continuously. The database system will be located at one of the local institutions and accessible by all stakeholders.

- An Integrated Management Plan for the lagoon will have been drafted in a participatory way, which will meet the identified opportunities to improve the livelihoods and reduce risk for people dependent on the lagoon's aquatic resources, whilst conserving where possible the natural resource base within the lagoon. The management plan would further build on the existing provincial policies and will propose required government strategies and include institutional responsibilities, informal or community laws, conflict management solutions, capacity building and other necessary requirements to support its future implementation.

- The population living near and on the lagoon will have an increased awareness of the state of the hydro-biological resources and also on how they could participate meaningfully in the management of the resources.

- Fisherfolk, aquaculturists and fish trading middlepersons will have benefited from the training received. In particular, women will have been encouraged to take advantage of the training offered. Fisherfolk, aquaculturists and fish trading middlepersons will be more professional and will produce a higher quality and larger quantity of products. These, in turn, will generate an increased income and provide better livelihoods.

- Investment and credit/saving opportunities will have been identified for fisherfolk, aquaculturists and fish trading middlepersons that will contribute to the sustainable use of the resources and the quality of the lagoon production.

- Existing grass-root organizations of fisherfolk and aquaculturalists will have been strengthened to increase the sustainability of the lagoon management. By having a clear idea of the different interests in the lagoon resources these organizations will be able to create better opportunities by joint activities dealing with problems, at the same time decreasing the dependency on middlepersons and processing companies for the marketing of their products.

- A proposal for a follow up project, which will include the approval of the Management Plan by the authorities, the implementation arrangements, the monitoring and surveillance aspects, training needs, investment and credit programme opportunities.

- The provincial DARD, DOFI, DOSTE, DOLISA and other local institutions that support the management plan, like universities, will have a clear understanding of the role of different local level interest groups in using and managing the lagoon ecosystem including informal practices, local regulations and de facto (not official) practices. They will have the capacity to deal with conflicting interests of the various stakeholders and to carry out the execution of the Management Plan in a dynamic way. Moreover, they will have a better understanding on how to use participatory methods for engaging local people in the management of the lagoon system. Training of local level trainers will have increased the efficiency and effect of extension services delivered in the field of fisheries and aquaculture.

- The findings of the project will be disseminated upon completion of the project, at least at the national and international level, so that MOFI, other provincial governments and even other national governments, that have to deal with similar situations may learn from the experiences of this project.

B.3. Target beneficiaries

Target beneficiaries are the 300 000 people living on and around the lagoons, and the future generations which will live in that area. These people, who are dependent to a larger or smaller extent on the hydro-biological resources, will benefit from the sustainable use of these resources that will be created by the Integrated Management Plan.

Other immediate beneficiaries among the people living on and around the lagoon are the poor fisherfolk, poor aquaculturalists and small scale fish trading middlepersons which will benefit from the training received, credit/savings and insurance opportunities identified and the competent support and advice by the provincial institutes which deal with fisheries. The livelihood of the poorest households of these people will increase as a result of their more efficient income generating activities. The project will have a pro-poor focus which will guarantee access of especially the poorest of the poor to the project benefits.

The local institutions, universities and DOFI in the fisheries sector will benefit from the project with equipment, information and training received and with the new method (PRA) when working with the communities.

At the national level MOFI, other stakeholder institutions and interested people will benefit from the information distributed regarding the experiences drawn from the project; based on this they will be able to decide what can be used for other areas in Viet Nam and eventually other parts of the globe.

Socio-economic monitoring during the project will assure that no households are worse off, and will take into consideration the long-term perspectives, and will bear in mind that intra-household relations are positively affected by the changes, guaranteed by a gender sensitive approach.

B.4. Project strategy

This project will focus its activities on the entire Lagoon system of Thua Thien Hue. The objective is to improve the livelihoods of the people dependent on the lagoon system in Thua Thien Hue (Viet Nam) by improving the quality of the environment and promoting a sustainable management of the hydro-biological resources in the lagoons. For this purpose the project will make use of the existing participatory methods, which have proven to be successful in most parts of the world, to produce an Integrated Lagoon Management Plan. Key players in this approach are the local institutions and social structures. These will be used instead of the artificial creation of a parallel structure, and they will promote and support a participatory process which will be more effective with regard to the sustainable use of the hydro-biological resources and the improvement of the livelihoods of the poor in the area.

The timeframe for the implementation is three years, divided into three phases. However, it is foreseen that an extension phase will be needed to consolidate the achievements, to support the implementation strategy and to distribute the “model” of this Integrated Lagoon Management Plan” to other areas of Viet Nam.

Survey phase

The project will start with the identification of the stakeholders which should be included in the process of formulation and implementation of the activities needed for the Integrated Lagoon Management. The project office, which will be based in the province of DOFI, will establish a good relationship with the other local and national institutions and projects in the sector. Institutions will be selected by the project staff in close collaboration with DOFI staff for alliances to support the DOSTE initiated LAPROCOF in carrying out the tasks of hydro-biological and socio-economic information collection, and the analysis and the systematisation of the data into a database. The collection of environmental parameters and setup of a monitoring system, along with geophysical surveys and analysis of remotely sensed images will be performed in this survey phase in order to characterize the lagoon sub-environment as a prerequisite for such an

evaluation. The alliances will be formalised by mutual agreements and funds will be disbursed to buy equipment, assign project members and carry out the research. The socio-economic research will be carried out by specialists in a Participatory Rural Appraisal (PRA), which will continue the IDRC project initiated activities, prepare a detailed background for the Integrated Lagoon Management Plan, and find out the problems and existing opportunities in order to improve the livelihood of the target beneficiaries. The project will identify the needs for training of the various groups, the needs for credit/savings and insurance and for organizational support.

Management Plan Formulation phase

In the second year the project will continue to support LAPROCOF in the collection of hydro-biological data, to compare the results later with those of the first year and refine the knowledge about the processes going on within the lagoon system. The information of the first year will be analysed and together with the outcomes of the PRA's be processed in the draft Integrated Lagoon Management Plan. This draft will be discussed extensively in a participatory way with all stakeholders: fisherfolk, farmers, aquaculturalists, middlepersons, tourism entrepreneurs, transporters, local institutions etc. and compromises are to be made to agree on the plan. Training will be given to the stakeholders in areas where needs were identified and with relation to the future implementation of the plan.

The Management Plan Preparation phase

During the third year of the project, the equipment and personnel will be identified to carry out the tasks of implementation at a later stage. Training institutes will be contracted to carry out extension services and to train the target beneficiaries in subjects like pond preparation, net repair, navigation, handling of the product, marketing, accounting, maintenance of motors, SME management, etc. The people who will carry out the future implementation will be trained in the tasks they need to fulfil, for example monitoring, control and surveillance. The draft Management Plan will be tested in some pilot sites (communes) with activities in the field of promotion of the regulation of the Plan and the introduction of Better Management Practices. An implementation strategy will be prepared in a participatory way, thus in close consultation with all stakeholders. Fisherfolk and aquaculturalists activities will be supported with training and advice from the project in formalization of their organizations, accounting, and the establishment of the organizations.

The results from the project should be evaluated, published and distributed to MOFI at the national level and institutions and PCC's interested in the establishment of a similar Management Plan. Upon termination of the project Thua Thien's PPC will have an organizational structure at its disposal, consisting of the provincial departments of fisheries, environment, agriculture, transport, tourism and industry and other provincial institutes. The PPC will have the capacity to start the implementation of the Integrated Management Plan, by use of the prepared strategy in a dynamic and active way. Preferably, the organizational structure under the PPC will be sustainable without donor funds and be capable of giving advice with respect to the implementation of the plan and strategy. Local capacity in the fisheries sector will have been increased in such a way that others will come to Thua Thien Hue for advice.

Follow-up scenario

Nine months before the end of the project a follow-up scenario will have been identified for the implementation phase of the Integrated Lagoon Management Plan, including consolidation and expansion and/or replication of the results obtained. The identification, formulation and design of the follow-up project or extension phases should be carried out in conjunction with the evaluation mission.

B.5. Implementation arrangements

The project will be provincially implemented under the overall responsibility of the Provincial People's Committee (PPC) of Thua Thien Hue. Project implementation will be the responsibility of the Department of Fisheries (DOFI) under Thua Thien Hue's PPC. A part-time National Project Director (NPD) will be appointed by the PPC and be based in Hue City. The NPD will be paid for by the PPC and function as the official counterpart contact person for FAO during the implementation of the project. A full-time National Project Manager (NPM) will be recruited by the budget holder (FAO Vietnam) and paid for under the project. The selection of the NPM will be carried out by FAO in close coordination with the NPD and other project partners. The NPM will be responsible for the daily management of the project in absence of the CTA. Additional technical and support staff will be provided and assigned as required. The Terms of Reference of the NPD and NPM can be found in annexes 1 c and 1 d of this document.

The Food and Agriculture Organization of the United Nations (FAO) will provide a full-time Chief Technical Advisor (TA) for 18 months who will be based in the project area, to directly supervise project execution in close cooperation with the NPD. Moreover, FAO will try to provide two full-time Associate Professional Officers (APOs) who will be based for two years in the project area and work under the direct supervision of the CTA (or the NPM after the 18 months of the CTA assistance have passed), and under the responsibility of the FAO Representative in Hanoi. Additional technical backstopping, international and national consultants will be provided by FAO whenever needed. The Terms of Reference of the CTA and APOs can be found in Annexes 1 and 1 a/b of this document.

The work carried out at the provincial, district and commune level will require an estimated local support staff of 20 persons, working on different aspects of the project (secretary, drivers, biologists, laboratory technicians, extensionists, socio-economic researchers, guards, etc.). Use will be made wherever possible of the relevant local institutions like the University of Science and the University of Agriculture and Forestry, the VNICZM project, the LAPROCOF project, the Provincial Women's Union and the Provincial Farmers Union for studies and applied research in the form of contractual services. For specialized training in the fields of aquaculture and fisheries which is available at national level contractual arrangements will be made with RIA No.1, RIMF, The University of Nha Trang and the University of Can Tho. As international partner in hydro-biological research issues the University of Ancona (Italy) will be involved; this university started to collect hydro-biological data in the lagoon area in 2003.

B.6. Reasons for assistance from FAO/Government Cooperative Programme

Viet Nam has a very long coastline and many inland aquatic resources which make the country especially suitable for the development of the fisheries sectors. As a result of the Doi Moi policy, Viet Nam's fisheries sector has presented, over the last three years an impressive growth in production compared to other sectors.

For FAO, as well as for the Vietnamese Government, the contribution of fish to the daily diet (in particular the protein intake) of the Vietnamese population is considered very important. In the establishment of food security and the alleviation of poverty in Viet Nam the fishery sector could play a major role. The fishery sector offers employment for landless and poor (in fishing activities and processing plants) and an alternative to agriculture in coastal areas with less fertile sandy soils. In the development of the rural areas of Viet Nam, fish produced by fishery and aquaculture activities, can provide not only a higher income to the rural households than common rice culture, but also enrich the households own food consumption pattern.

In several areas of Viet Nam, FAO contributes to the development of sustainable fisheries and aquaculture with the aim of poverty alleviation and food security. In this respect, the FAO/UNDP project VIE/98/009 is trying to improve and promote rice-fish culture in three Northern provinces of Viet Nam, namely Son La, Hoa Binh and Lai Chau. Two FAO Telefood

projects in Thai Binh and Thua Thien are supporting small-scale, poor fish and shrimp farmers in order to improve their livelihoods through the construction of hatcheries and fish ponds.

Moreover, following the floods of 2000, FAO has provided emergency assistance to poor and vulnerable flood affected farmers in the Mekong Delta. It has initiated and supported the Government's Sustainable Aquaculture for Poverty Alleviation Strategy and Implementation Programme. In July 2002, an agreement was signed with UNDP to provide technical advice to the Environmental Management in Coastal Aquaculture project (VIE/97/030/NEX), on shrimp production related issues. This project is partly active in the same area and FAO's involvement will guarantee the exchange of information and collaboration on certain issues.

Recently, in January 2002, FAO initiated a Technical Cooperation Programme (TCP) project entitled "Strengthening the Capacity of the International Cooperation Department (ICD) of the Ministry of Fisheries (MOFI)". The aim of the project is to strengthen the ICD capacity allowing it to play more effectively in relation to the Fisheries Sector Cooperation and Partnership Group (CPG), and enhance its role of external support coordination and orientation with an increased effect on the sustainable development and food security in the fisheries sector. This will attract foreign technical assistance and investment, rationalize their use and increase their efficiency with more suitable support to the various producers and population group's. It will also greatly contribute to food security and livelihood improvement.

The rapid transition of Viet Nam's economy and the rapid increase of the population put more and more pressure on the natural resources. In this respect, sustainability in the management of the aquatic resources is a key environmental and social issue. Fully aware of the current situation, the Vietnamese Government is assigning high priority to the management of coastal areas, based on a participatory approach. FAO, with more than 3000 of its specialists in rural development world-wide, has extensive experience in the field of integrated lagoon and coastal management. The past and ongoing programmes in many countries, supported by UNDP, and several bilateral donors show that FAO is capable of implementing these programmes and is further developing its experience to distribute the information received worldwide to those interested.

The FAO Code of Conduct for Responsible Fisheries is recognized by many countries, including Viet Nam, as a major guide for the development of their fisheries sectors. Various articles are important in relation to the activities proposed under the IMOLA-Hue project. For example the following:

Article 7.1.1 States and all those engaged in fisheries management should, through an appropriate policy, legal and institutional framework, adopt measures for the long-term conservation and sustainable use of fisheries resources. Conservation and management measures, whether at the local, national, sub-regional or regional levels, should be based on the best scientific evidence available and be designed to ensure the long-term sustainability of fishery resources at levels which promote the objective of their optimum utilization and maintain their availability for present and future generations; short-term considerations should not compromise these objectives;

Article 8.1.1 States should ensure that only fishing operations allowed by them are conducted within waters under their jurisdiction and that these operations are carried out in a responsible manner;

Article 9.1.2 States should promote responsible development and management of aquaculture, including an advance evaluation of the effects of aquaculture development on genetic diversity and ecosystem integrity, based on the best available scientific information;

Article 9.1.3 States should produce and regularly update aquaculture development strategies and plans, as required, to ensure that aquaculture development is ecologically sustainable and to allow the rational use of resources shared by aquaculture and other activities; and,

Article 9.1.4 States should ensure that the livelihoods of local communities, and their access to fishing grounds, are not negatively affected by aquaculture developments.

The FAO FishCode Programme, to which the project will be largely linked, has the in-house expertise to make this project successful and its coordination unit at FAO Headquarters will make it possible to disseminate the findings of the project world-wide. The direct link with the FishCode Programme will assure that the project receives the latest information on CCRF related issues and experiences and the project will contribute to the development of practical guidelines on lagoon management under the same CCRF; thus both will benefit.

In addition, the project can make use of the experiences FAO gained in the field of conflict management under the Sustainable Fisheries Livelihoods Programme (GCP/INT/735/UK) which is active in Western Africa.

Although there exist many documents on integrated coastal management and on participatory rural appraisal, appropriate methods and techniques need to be developed that are suitable for hydro-biological, cultural and socio-economic conditions of the people living on and around Thua Thien Hue Lagoon systems. Therefore, the current situation requires a flexible and socially sensitive approach supported by technical and investment assistance through an externally funded project.

B.7. Special considerations

The project aims at the sustainable and thus environmentally sound use of the hydro-biological resources. The results drawn from development activities should therefore address both environmental conservation and biodiversity issues and the needs of the rural population dependent on the resources, in order that the latter may improve their livelihoods.

Gender roles were mainstreamed through the project formulation, and will do so in the preparation and implementation phase. The integration of women in all activities is vital for the projects' success, especially when participatory methods are applied. The role of women in the participatory process will not be limited to the side of the beneficiaries. The project will assign a substantial number of women among its staff, to work mainly in the promotion of the participatory process of formulation and implementation of the Integrated Lagoon Management Plan.

The achievement of food security and the alleviation of the existing poverty among the 300 000 people depending for their livelihoods on the lagoon will be kept in mind during all activities of the project, ensuring that no one will be worse off in the long run. The project will use a pro-poor approach and focus on all its activities.

Operational support from and coordination with the national and provincial government, NGO's, local institutions and other projects will be promoted wherever possible, also in view of continuity in assistance to the rural population living on and near the lagoon system.

Concerning the current activities taking place to turn the northern shore of the lagoon into a RAMSAR site, the project will be required to coordinate in order to integrate part of its activities with the RAMSAR Responsible agencies.

B.8. Coordination arrangements

Several provincial departments of the PPC of Thua Thien Hue will have a direct or indirect role in the formulation and implementation of the Integrated Lagoon Management Plan like DOFI, DOSTE, DARD, and DOLISA. The NPD, NPM and TA of the project will ensure both cooperation and coordination arrangements. During the project regular meetings will be held to inform the various provincial departments, local institutions, projects, communal and district authorities of the process and active participation will be welcomed in the discussions. The direct stakeholders in the process will participate in various ways such as the PRA's, workshops, meetings, training and by participation in local study tours.

The project will establish direct links with the VNICZM project, the LAPROCOF project, and with the Universities of Science and Agriculture and Forestry of Hue which work in the same area. Especially with the LAPROCOF project under the DOSTE and the Dutch funded VNICZM project coordination arrangements will be needed and both have already showed much interest in working together with the project. The activities of the VNICZM project fit nicely together with the IMOLA-HUE, where both projects will feed the LAPROCOF database with various data on different parameters, hence strengthening the capacities of different provincial institutions. Formal relationships and cooperation will be sought with the University of Ancona (Italy) which recently established, together with local institutions, a hydro-biological research initiative. In addition, the project will build further and link with the IUCN work in the Perfume River basin, exchanging data and searching collaboration in programme development, training and sensitivity.

Furthermore, in the area of aquaculture the project will coordinate its activities with the VIE/97/030/A/01/NEX "Environmental Management in Coastal Aquaculture" project, with other ongoing and planned development projects in Thua Thien Hue and with fisheries sector and Coastal management projects working in related fields elsewhere in the country such as NORAD, ACIAR, SIDA, DANIDA, ADB.

The project will also participate in and contribute to relevant information exchange and networking arrangements both in-country and in the region, such as GCP/RAS/175 "Sustainable Management of the Bay of Bengal large marine ecosystem" and NACA, AIT and MRC fisheries and aquaculture projects in the region. Moreover the project will be in close contact on aquaculture and aquatic resources management issues with the "Sustainable Aquaculture for Poverty Alleviation" SAPA Implementation Support Unit (ISU) at the Ministry of Fisheries in order to bring the project activities in line with SAPAs' development approach and to facilitate and increase the exchange of experiences between the project and others active in the Vietnamese aquatic resources management sector.

At the regional level, coordination will take place with the Support to Regional Aquatic Resources Management (STREAM) Programme of DFID/NACA/FAO and Voluntary Service Overseas (NGO based in the United Kingdom), Programme which has chosen Viet Nam as one of its core countries. Internationally, the close links with the FAO FishCode Programme will guarantee the latest information on CCRF related issues and will make sure that the project complies with the CCRF and even functions as a so called "reference case" for other similar areas elsewhere in the world. The joint organization of workshops and world-wide dissemination of the lessons learned would provide opportunities that should be taken advantage of.

C. DEVELOPMENT OBJECTIVE

The objective is to improve the livelihoods of the people dependent on the lagoon system in Thua Thien Hue (Viet Nam) by promoting a participatory sustainable management of the hydro-biological resources in the lagoons, in accordance with the socio-economic and production systems requirements of the population and with particular emphasis on the gender roles, the achievement of food security and the alleviation of poverty.

D. IMMEDIATE OBJECTIVES, OUTPUTS AND ACTIVITIES

D.1. Immediate objective one

To understand the present issues in the lagoon, with respect to the hydro-biological resources status and use. Also to understand in more detail human activities and current institutional responsibilities and management practices. The analysis should build further on the activities of IDRC and LAPROCOF in this field and include an assessment of the social, economic and environmental impact of the yearly floodings.

Output 1: Lagoon assessment.

Analysis of the present state of the lagoons natural resources, economic uses, exploitation levels (including fisheries, aquaculture, agriculture, and other activities), social and economic situation of people dependent on the lagoon resources, institutional responsibilities and management practices.

A detailed assessment of the impacts of the floodings in general and specifically the recent floodings of 1999 and the continuous pressure on the livelihoods of the lagoon people and natural environment would be included in the analysis by using an analysis and mapping information system for lagoon management and development. The scope and depth of the environmental assessment will be largely determined by the yearly floodings, while the socio-economic analyses will build on data collected by earlier projects (e.g. IDRC, LAPROCOF) and of the PRA methods used by the project management. One of the main subjects of the assessment will be the identification of the poor fishers/ aquaculturists and how to increase their visibility by prioritising their needs.

Moreover, the socio-economic surveys will produce gender desegregated data on the roles, rights, responsibilities and needs of women and men in (re)productive, households and community tasks. This will enable the project to monitor the impacts (positive or negative) of the changes inherent to the implementation of the Integrated Lagoon Management project and react in an appropriate, direct and efficient way to in order to avoid any negative socio-economic impacts.

The activities needed for Output 1 will be carried during the first two years months of the project and will result in a database and two documents (the first to be presented after 12 month and the other after 24 months). Continuously monitoring of the lagoon resources after this period will however be carried out by the local institutions with technical support, wherever necessary, provided by the project.

Activities required for Output 1:

1.1 A participatory workshop will be organized at the start of the project in coordination with LAPROCOF to identify with the various stakeholders in the future lagoon management the socio-economic, environmental and lagoon resources data available for collection.

1.2 Socio-economic surveys/Participatory Rural Appraisals (PRA)s with local communities (fishers, aquaculture producers, agriculture farmers) to evaluate the livelihood status of the lagoon communities, the economic and financial status (including savings, investment and borrowing and risk management habits and practices), resource use conflicts, problems and constraints and current management practices (what exists and how it works, weaknesses, successes, what are the objectives (e.g. fishing groups, farmers union, women's unions, fishing union etc).

1.3 Fishery and environment survey (physico-chemical condition, hydro-biological and fishery resources, ecosystem evaluation and zoning, coastal dynamics and beach erosion assessment, geophysical prospecting, gear used, current exploitation levels, opportunities and constraints in lagoon fishery development), using the Geographical Information System (GIS).

1.4 Geophysical and sediment type thematic mapping using GIS-based mapping tools. Building computerized GIS-based database for thematic mapping. Multi-temporal analysis of lagoon environment for short-term variation and vulnerability assessment, using remotely sensed images.

1.5 Aquaculture survey to determine the current status, opportunities and constraints for aquaculture development in the lagoon, using the Geographical Information System (GIS) and other methods necessary.

1.6 Provide assistance to the VNICZM project in institutional analyses in order to assess responsibilities, strengths, weaknesses of (local) government, non–government and financial institutions in planning and management of the lagoon, relations with users and other government departments. Special emphasis will be given to understanding the informal and formal structures currently used in the use of the lagoon resources.

1.7 Special assessment of the impact of the yearly floodings and production of possible future scenarios, looking at environmental aspects, salinisation, pollution (by pesticides, PCB's dioxins, etc.) changing estuary mouth and coastline, plant and animal communities (flora and fauna), changes in residential areas, aquaculture and agriculture areas, secondary data collected by various institutions/PRA and the GIS surveys.
1.8 Establishment of a local level monitoring system of the hydro-biological resources, to allow for a continuous cost-effective data collection and analysis. This will ensure that improvements (or deteriorations) of the hydro biological resources, as a result of the management policies introduced, can be measured.
1.9 Writing of the reports based on the data collected during the surveys and start of the improvement of the LAPROCOF database.

D.2. Immediate objective two

To identify priority issues in an effort to support the existing and develop new management policies for improving people's livelihoods and reduce risk for poor people dependent on the lagoon resources based on the sustainable use of natural resources within the lagoon. These policies should be developed in a participatory way resulting in a draft Lagoon Management Plan that gives, in a gender sensitive way, special attention to poverty alleviation among landless and lagoon communities.

Output 2: Draft lagoon management plan.

A draft Integrated Management Plan and recommendations for a future Implementation Strategy for the lagoon which meet the identified opportunities to improve the livelihoods and reduce risk for people dependent on the lagoon's aquatic resources, whilst conserving wherever possible the natural resource base within the lagoon.

The draft management plan would be formulated during the second and the beginning of the third project year in a participatory way with all actors involved in activities related to the lagoon management to create a broad support for future implementation. Therefore the project should identify, which suitable economic activities could be carried out in which areas, by whom, and how to support these activities. The draft management plan should take into consideration and build further on the existing and newly developed policies with regard to the use of the lagoon. The CCRF will serve as a guide in the introduction of good management practices; on the basis of which pertinent issues can be discussed in a participatory manner.

The draft management plan and recommendation for the implementation strategy would specifically address:

- Integrated planning of the different activities (fishery, aquaculture, agriculture, transport, and tourism) resulting in a spatial development plan, including the development of a plan for aquaculture, based on the suitable areas; a plan for fishery development (including gear and techniques to be used), based on exploitation levels, conservation areas *etc* as required; institutional and capacity building to improve lagoon management and support to small-scale infrastructure related projects for typhoon and flood protection as long as these are not addressed by other projects.
- Suggested methods for coping with the yearly floodings for lagoon people working in aquaculture and fisheries related activities, e.g. the construction of ponds systems which prevent the fish/shrimp from escaping in case of inundation.
- Contingency matters with respect to future floodings and their expected impact on the lagoon system and especially on the hydro-biological resources and the livelihoods of the people living on and around the lagoons.

This output would include a special assessment of the poverty status of landless communities living on boats on the lagoon, reasons for their poverty and identification of potential strategies for alleviation of this poverty, including recommended government strategies required to support poverty alleviation whilst conserving the natural resources base within the lagoon.

Activities required for Output 2:

2.1 Analysis to identify suitable areas/zones for aquaculture, capture fisheries, for (eco)-tourism and special areas/zones for conservation (e.g. nursery/breeding areas etc), taking into consideration the contingency matters. Data collected through GIS (under output 1) could be used here.

2.2 Livelihood analysis of landless and other poor people to identify specific livelihood opportunities for them, such as aquaculture, fishery and non-fishery alternatives whilst maintaining the resource base through surveys/PRAs, livelihood analysis to understand the economic activities of the poor, and allow the poor to voice their concerns and needs to their future development. This would analyze the current livelihood activities and causes of poverty and recommend future activities for improving livelihoods. These livelihood analyses would be used to drive the development of the management plan and implementation strategy.

2.3 Awareness creation at national, provincial and communal level of the state of the lagoon system resources.

2.4 Formulation of the draft Management Plan in a participatory way so that inputs from all concerned, including the poor, are guaranteed: fisherfolk, aquaculturists, middlepersons, sampan people, fish processing companies, farmers, transporters, tourism enterprises, universities, research institutes, local governments, people's committee's, other projects and private enterprises, and including (GIS) maps providing information on the suitable areas/zones for different activities and of special conservation concern.

2.5 Identification of required policies, institutional requirements and other activities to assist in improving livelihoods (including the possible settlement of the sampan people), by e.g. education, training, credit and infrastructure improvements.

D.3. Immediate objective three

To prepare for the implementation of the Management Plan, including preparation for the official enactment of the plan, an implementation strategy at all levels, capacity building, as well as identification of credit, savings, insurance and organizational needs and investment requirements.

Output 3: Preparation for the Implementation of the Management Plan

To prepare for the initial stages of the implementation of the management plan. Some typical communes will be selected for pilot activities, especially with respect to training aspects, like Loc Binh or Loc Dien Commune (Phu Loc district), Quang Loi or Quang Thai commune (Quang Dien district) and Vinh Ha or Phu Xuan commune (Phu Vang district). The draft management plan and suggestions for implementation would cover provincial strategies, institutional responsibilities, capacity building and other necessary requirements to support the future implementation of the lagoon management plan.

The preparation for the implementation would include a number of activities identified, which should, amongst others, address the following issues:

3.1 Preparation for the official enactment by the PPC of the draft Management Plan by creating agreement among the stakeholders.

3.2 Formulation of an Implementation Strategy of the Management Plan in a participatory way, including the activities that can be carried out under the present project. The remainder could be followed-up by another project, an extension phase of this project or by the provincial authorities

3.3 Improvement of livelihoods of lagoon people, including landless households and SME's, through e.g. training (educational) programmes based on training needs assessments.

3.4 Identification of credit, savings and insurance needs and organizational needs with respect to training in the establishment of cooperatives, associations or solidarity groups.

3.5 Awareness creation and training of (poor) lagoon people so they will take part actively in the management of lagoon resources.
3.6 Recommend management strategies for local/commune level implementation to guarantee the sustainable management of the lagoon, including the design of responsible aquaculture development and conflict resolution procedures.
3.7 Improvement in fishery and aquaculture management, through training, with particular emphasis on women and the active roles they play in the development of the fishery sector and on production methods to limit the damage in case of floodings.
3.8 The identification and formulation of small-scale infrastructure projects, especially in communes with many poor people living on sampans, in order to improve their livelihoods and typhoon and flood protection.

Note: It will not be possible to improve the livelihoods of the lagoon people and the fisheries and aquaculture management to the desired level during the limited period of the project. However, an initial and important step can be made in the right direction if adequate training is provided to selected groups.

D.4. Immediate objective four

To strengthen the provincial institutional capacity in such a way that the Management Plan once approved will be implemented actively according to strategies formulated and that the provincial institutions are able to formulate and implement policies related to the management of the lagoon system that are environmentally and socially sustainable.

Output 4: Strengthen the provincial institutional capacity

In order to make the implementation of the Management Plan, when approved, sustainable, the ownership of the provincial authorities of the process of formulation and implementation will not be sufficient to guarantee its success. The implementation of the Management Plan and the monitoring and surveillance of its embedded rules and regulations will require capacity. This is not yet available in the provincial departments of MARD, MOFI and MOSTE and the other local institutions and organizations involved.

Therefore the following activities are required for output 4:
4.1 Human resource development (HRD) training of provincial government officials, amongst others: conflict management, how to create partnerships with other institutions, how to implement monitoring, control and surveillance without spending large budgets, how to collect and manage information from different resources.
4.2 Support the inter-institutional coordination under Thua Thien Hue's PPC by contributing to the efforts of the VNICZM project in the establishment of a Provincial Advisory Committee for lagoon and coastal management issues with all stakeholders: local authorities, institutions, Women's Union, fisherfolk and aquaculture organizations, etc.
4.3 The project will seek close collaboration with the on-going research activities of the local institutions and projects such as LAPROCOF, VNICZM and other national and international projects that are related to the Universities of Science and Agriculture and Forestry of Hue City.

D.5. Immediate objective five

To disseminate the findings and results of the project on a national and international basis, so that others can use this example in their formulation of Management Plans. By dissemination of the knowledge gained it would be more likely to attract the interest of donors and government agencies for similar plans in other provinces in Viet Nam.

Output 5: Dissemination of findings and results.

It is important that at the end of the project the findings and result are disseminated, at least at the national level, so that other provinces/local governments that are in a similar situation learn from the experiences of this project. Secondly, it would be in the interest of the national

government to build further on the draft management plan and perhaps use a similar process at the national level, covering all lagoon systems of Viet Nam, or include the findings in VNICZM programmes and finally the dissemination of the results which will maintain a high interest and may possibly lead to further support from donors in these areas.

At the international level the lessons learned from the project will be disseminated under the FAO FishCode Programme to other governments and institutes dealing with similar lagoon management problems and opportunities. The set-up of the project and its methodologies used might also be of interest for other issues as e.g. mangrove shrimp resources management and river and reservoir management.

Activities required for output 5:

5.1 Organization of several workshops where all interested in the management of lagoon systems and issues such as conflict management in relation to aquatic resources are invited to discuss the findings of the project and future prospects in that area.
5.2 Elaboration of proposals for follow-up activities in Lagoon Management, including the preparation of a project document for the implementation phase and identification of future investment opportunities.
5.3 Production of a booklet on the process of participatory Lagoon Management planning and portraying such experiences on the worldwide web so that information is accessible for those who are interested.
5.4 Development of Code of Conduct for Responsible Fisheries related integrated lagoon management guidelines for international dissemination.

E. INPUTS

E.1 Government Inputs

Project Personnel

The following staff will be appointed:

(a) National Project Director (NPD), 36 p/m (but part-time/ four hours per day)
(b) Secretary, 36 p/m
(c) Accountant, 36 p/m
(d) Drivers, two persons, 72 p/m
(e) Watchman, 36 p/m
(f) Cleaner, 36 p/m

The secretary, accountant, drivers, watchman and cleaner will work full-time for the project; moreover, the Provincial People's Committees DOFI will also provide competent staff to the project on an *ad-hoc* basis.

General Operating Expenses:

DOFI will cover the costs of office utilities (water, electricity), two telephone connections, internet costs and calls within the country.

Equipment and Premises

DOFI will make available an office, preferably on their compound, to promote interaction and coordination between Project and DOFI staff. This office will contain at least four rooms (NPM, TA, APOs, and Secretariat/administration). Appropriate training and workshop facilities will be provided without charge, within the city of Hue.

DOFI will provide all basic office furniture and fixtures for the premises.

E.2 Donor Inputs

International experts and consultants

One Chief Technical Adviser (CTA)/ Coastal Management Specialist will support the project for the first half of the project duration (18 p/m) and will be based at the duty station in Hue City. After that period, it is expected that the project will be running smoothly and that full-time NPM with assistance of FAO Technical Support Services (TSS) and International consultancy services will assume most of the tasks of the CTA and play a more prominent role in the project; The experience of the NPM obtained in the first 18 months of the project should be adequate to finalize the work, in consultation with the FAO Representation and the NPD, in a proper way. As the daily project management will be carried out by the NPM after the termination of the 18 months of CTA inputs, there is no risk that the project will lack management and direction for that period. The FAO Representation in Viet Nam will also take a more active role in the second half of this project; particularly with regards to the financial management side.

FAO headquarters will try to find two qualified APO's for the project. APO inputs cannot be guaranteed at this stage and will be financed outside the project budget. Inputs of the APOs will be additional and will not be essential for the achievement of the project objectives. They will assist in field implementation, research and technology development, documentation and networking functions of the project. The APO's will be one aquatic biologist and one socio-economist with experience in gender matters. They will be working under the direct supervision of the CTA and under the overall supervision of the FAO Representative in Hanoi.

In addition to the CTA the following FAO Technical Support Services (TSS) and international consultants (preliminary Terms of Reference can be found in annex 1) will support the project:

FAO Technical Support (Seven person months; US$123 000)

- Consultant specialized in fisherfolk and farmers' organization (FIRI) (1.5 p/m), to train project extension workers in the organization (solidarity groups, associations, cluster groups, cooperatives), establishment and development.

- Consultant specialized in rural credit, savings and insurance systems (FIIT) (1.5 p/m) to identify the needs and opportunities and to prepare the framework for a future programme.

- Consultant specialized in aquatic resources related to planning and policy development (FIPP) (two p/m), who will assist the project in the management plan and implementation strategy formulation.

- Consultant specialized in legislation (LEGN) (0.5 p/m), who will be responsible for bringing the draft Management Plan, with its regulations and laws incurred, into line with national and international standards.

- Consultant specialized in Monitoring and Evaluation of participatory approaches, training programme and Integrated Management Plans (FIRI/RAPI/FIPP) (1.5 p/m), who will visit at an interval of 12 months during the duration of the project. This input will provide the advice for the fine-tuning of project activities and will be carried out in missions of two weeks each.

International Consultants (Eight person months; US$100 000)

1) Consultant specialized in PRA/community development (1.5 p/m), who will be responsible for training the project extension workers in participatory methods. (Network of Aquaculture Centers in Asia-Pacific, Thailand)

2) Consultant specialized in Geographical Information System (GIS) (1.5 p/m), to lead the mapping of the lagoon resources and activities. (University of Siena, Italy)

3) Consultant specialized in biological and micro-biological, nutrient and in particular matter analysis (1 p/m) (University of Ancona, Italy)

4) Consultant specialized in physical environment assessment (one p/m) (University of Ancona, Italy)

5) Consultant specialized in Monitoring and Evaluation of the hydro-biological research components of the project (1.5 p/m) with expertise in biological analysis and research programme development. The Consultant will be expected to visit at intervals of 12 months during the duration of the project. This input will provide the advice for fine-tuning of the project activities and will be carried out in missions of two weeks each. (University of Ancona, Italy)

Unspecified consultancies (1.5 p/m) according to needs identified during project implementation (e.g. aquaculture development, processing and marketing)

TCDC Consultants (Two person months; US$7 000)
TCDC Consultant specialized in conflict management in relation to aquatic resources management (two p/m), to assist in the establishment of conflict resolution procedures. (via Asian Institute of Technology or NACA, Thailand)

Management, Administrative and Support Staff (144 person months; US$90 000)
The project will recruit one National Project Manager (NPM) (36 p/m) and one administrator (36 p/m) to assist the national counterpart and the project international staff in fulfilling the FAO administrative and operational requirements. Furthermore the project will assign two fulltime interpreters/translators (72 p/m) who will assist the international staff, consultants, and the administrator and ensure smooth implementation of the project activities.

National Consultants (28 person months; US$28 000)
The project will assign:

1) An Aquaculture Development Specialist (four p/m), to train the extension workers of the project and DOFI in this field.
2) An Artesanal fisheries Specialist (four p/m), to train the extension workers of the project and DOFI in this field.
3) A Rural credit and savings Specialist (two p/m), to assist the International consultant on credit in the preparation of the schemes.
4) Two local consultants specialized in PRA/community development (estimated 12 p/m), who will help in the training of the extension workers and with implementation of the PRA's and livelihood analyses required.
5) A Biocentric mapping and taxonomy Specialist (two p/m), to assist the local counterparts in these fields
6) A Biodiversity assessment Specialist (two p/m), to assist the local counterparts in these fields
7) Unspecified consultancies (two p/m) according to needs identified during project implementation (e.g. gender, training of trainers, fish diseases, environmental issues, processing and marketing)

National Technical Support Staff (300 person months; US$70 000)
Ten local extension workers (approximately 300 p/m) will be used to carry out the PRA's. They will be expected to assist also with the promotion of the project and assist in the collection of hydro- biological, fisheries and aquaculture data.

Official Duty Travel and Mission Costs (US$114 000)
The project will reserve an adequate budget for external and internal duty travel and will cover costs for backstopping missions from the FAO national office, headquarters and regional office. As much as possible, such travel will be coordinated in combination with other duties in the region to minimize the project's attributed travel costs.

Contractual Services (US$100 000)
In order to support the activities related to the Immediate objectives 1 and 3, Lagoon assessment and the implementation of the Integrated Management Plan the budget will provide for contractual services at the national level, e.g. with the Universities and projects in Hue to undertake hydro-biological surveys, PRA's, GIS and farm surveys and with e.g. RIA No1, RIMF, AIT Viet Nam and the University of Nha Trang to provide training in navigation, fisheries techniques, aquaculture, fishing gear and motor maintenance. Locally available expertise and technologies, e.g. GIS expertise available at DOSTE, will be used as much as possible in this respect. Through cooperation with local universities the University of Ancona (Italy) will be involved in the project as well with technical expertise in hydro-biological data collection and analysis.

Another part of the contractual services will be going through national and local entities for example the production of audio-visual material, driving and maintenance of the project boats, small scale infrastructure works and the production of promotional and didactical materials. Contracts with institutions will follow the standard format used for FAO letters of Agreement. The budget will be reserved to contract short-term individual services using the FAO service contract modality. This instrument will be applied in relation to specific studies and technical services not covered by expertise from institutional contractual services. (Details can be found in Annex 3)

General Operating Expenses (US$75 000)
This budget line will cover regular expenses for the project operation and maintenance, fuel, insurance and maintenance of the project means of transport (boats, cars, and scooters). Other cost will be those for international telephone and fax communications, field-office communication through mobile phones, office documentation, training manuals and other consumables. Funds for the final report are included in this budget line relating to the last year of the project.

Supplies and Materials (US$60 000)
Funds are provided for supplies and materials required by all project activities.

Equipment (US$157 000)
For detailed description of costs, see Annex 2.

<u>General</u>
- two new four-wheel drive vehicles.
- two fiberglass open boats (capacity 15 persons) for training and extension work in the field.
- two outboard motors of 75–100 Hp.
- ten motorbikes (scooters), for extension work in the field
- ten mobile phones, for field-office communication
- one portable generator (for extension work in the field)

Office and training equipment

- six personal computers (multimedia)
- software
- six UPS
- three printers
- one photocopier
- one fax
- one VCD/DVD/video recorder
- one TV
- one video camera
- one digital photo/video camera
- two overhead projectors with screen
- one multimedia projector for presentations
- five air conditioners
- three GPS

Laboratory equipment

Basic equipment is required to establish a facility to measure, process and analyze the hydro-biological data needed for the assessment of the lagoon situation. The laboratory will be situated at the University of Science in Hue, which will provide a laboratory room for the duration of the project. A detailed description of the necessary equipment is also available in Annex 2.

Physical location of all office and training equipment will be at the Project premises unless the TA decides elsewhere. The equipment will formally remain the property of FAO until the project terminates, after which a transfer will take place with regard to the follow-up project or the institutions involved in the after project Integrated Management Plan Implementation.

Training (US$142 000)

Fellowships

A total of three months of fellowships will be made available in relevant subject matters, such as data processing, policy analysis, monitoring, surveillance and control of coastal resources. Fellowships need to be arranged at institutions in Asia.

Study tour

Funds are provided for an international study tour for senior and mid-level project staff, including some staff from local partner institutions, to observe Integrated Coastal Area Management projects in other countries in the Asian region.

In-country training

Training of national staff and local beneficiaries will take place through on the job training, participation in workshops, seminars and in-country exchange visits. In general, actual training design and delivery will be covered under contractual arrangements. However, additional material cost, transport, accommodation and occasional compensation and fees will be covered under this training budget line.

Consultants of the University of Ancona will (during their missions), together with the local counterparts and some national consultants, provide on-the-job training to local counterpart organizations that work with the project in Hue. Issues that will be covered in these training sessions are, among others:

1) GIS-based geo-technologies and all management capability connected with GIS-based databases (interrogation strategies, Arc Info programming, Arc View Mapping etc.)
2) Environmental monitoring, sampling techniques and analysis, and
3) Geologic/geo-morphological mapping.

Jointly with other projects/institutions several workshops will be organized at the end of the project to disseminate the project results and findings.

F. RISKS

SN	Risk	Effects	Probability
1.	Delayed recruitment of national and international staff	Slow project start resulting in less than appropriate operations.	Low to medium – depending on timing of the appointments
2.	Competition between provincial departments instead of cooperation	Delay in agreements, resulting in a later preparation for the implementation of the Management Plan and strategy.	Medium – at present few coordination between departments
3.	Failure to reach agreement among and between stakeholders	Delay in the formulation of and preparation for the Management Plan.	Low – based on showed interest in matter by communes
4.	Inadequate technical level of staff	Reduced awareness among stakeholders of the possible impact of a Management Plan and less technological development in sector	Low – technical staff will receive intensive training within project
5.	Language and cultural barriers between International and national staff	Communication levels are low, resulting in less coordination and mal management of project.	Low – interpreters/ translators will be experienced
6.	Low rate of institutionalization and replication of successful project approaches	Failure of the project to impact the long-term relationship between the institutions and between the institutions and the beneficiaries of the project.	Low – based on experiences by other projects working in the same area and field

G. PRIOR OBLIGATIONS AND PREREQUISITES

Prior Obligations
None

Prerequisites

1) The Provincial People's Committee should agree officially with the conditions and arrangements written down in the project document.
2) Office, laboratory and training facilities should be available and access guaranteed.
3) The PPC will provide qualified personnel (NPD, accountant, etc.) immediately upon the signing of the project document.

H. REVIEWS, REPORTING AND EVALUATION

Reports
Project reporting will take place in conformity with the standard requirements of FAO, the executing agency. Reports to be produced include: 1) an inception report, not more than two months after the implementation of the project;, 2) an overall workplan and annual workplan report on basis of the institutional and participatory planning processes; 3) semestral progress reports including the findings of the monitoring missions, 4) a terminal report to be submitted no later than six months before completion of the project. All reports will pass through the regular processing channels of FAO, before being forwarded to the PPC and the Donor. In addition to regular reporting duties, management will submit technical reports to the FAO national and regional offices and headquarters for review and distribution to both the PPC and Donor.

Reviews
A tri-partite meeting involving the PPC, the Donor and FAO will be organized at the end of each project year to review the progress and principal outstanding issues of the project. The discussions during the TPR will be based on a Project Performance Evaluation Report (PPER) prepared by the project prior to the meeting. Responsibility for the preparation of this report lies with the NPD. A Terminal Project Review (TPR) will be called to discuss the project terminal report.

Evaluation
The project will undergo an in-depth and comprehensive external evaluation during the third year. This evaluation will assess all key aspects of the project, including its rationale, objectives, design, implementation achievement, output and impact. The evaluation will be carried out jointly by representatives of the PPC, the Donor and FAO. One of the main objectives of the evaluation is to draw relevant and pertinent conclusions with regard to the potential of successful project aspects, which include policy and institutional arrangements. Preparation of the detailed terms of reference for a project evaluation will be initiated by the project at the end of the second year of the project. Detailed TOR contents will be mutually agreed on by all parties involved. In case any of the parties deem it necessary to introduce a formal intermediary evaluation of the project, this issue may be decided during a Tri-partite Review meeting.

I. BUDGET

Description	Account	Total
Staff costs (salaries)		
Total Staff Costs	5011/5012	**322 000**
Consultants	5013	
Total Consultants		**205 000**
Contracts	5014	100 000
Travel	5021	114 000
Training	5023	142 000
Equipment/materials and supplies		
Total Equipment and Supplies		**217 000**
Technical Support Services (TSS)	5027	
Total Technical Support Services		**148 000**
General Operating Expenses	5028	75 000
Sub-total Project Inputs		**1 323 000**
Support Costs (13 percent)	5029	171 990
Total Budget		**1 494 990**

See also Annex 4 for a detail annual expenditure plan

ANNEX 1

Name of Position: **Chief Technical Adviser (P-4 level)**
Duration of Assignment: **18 p/m** (Contract will be initially one year)
Duty Station: **Thua Thien Hue, Viet Nam**

Responsibilities:
Under the overall guidance and supervision of the FAO Representative, the technical supervision of the FAO technical services at FAO Headquarters (FIPP and FIRI) and the Regional Office (RAPI), and in close collaboration with the National Counterpart, he/she will be responsible for supervising the international and domestic consultants/experts, the incumbent will:

1) Ensure regular co-ordination with the national authorities and institutions involved with the implementation of the project.

2) Provide guidance to all planning, organizational, management and technical implementation related to the project.

3) On a regular basis, lead and participate in the drafting of annual work planning documents, project progress and project performance evaluation reports as well as technical papers.

4) Prepare terms of reference, identify candidates, and arrange for recruitment of project staff and consultant inputs required by the project.

5) Ensure the production of the Integrated Lagoon Management Plan and an Implementation Strategy.

6) Draft and negotiate agreement on contractual arrangements for national institutional inputs required in the sphere of research, management, technical and implementation support to the project.

7) Supervise and ensure satisfactory standards of implementation of institutional contracts and short-term Technical Assistance inputs to the project.

8) In close collaboration with the FAO representation, supervise on behalf of the executing agency all project financial and administrative matters.

9) Actively contribute to policy discussions that take place at the national level in the sphere of the project intervention areas.

10) Take a leading role in the project national and international networking development and specifically in the integration of other FAO Technical Assistance initiatives with the projects field activities.

11) Produce project progress reports in line with FAO and donor requirements, PPER, technical reports, Terminal Report and other relevant documentation as required by FAO.

Qualifications: University degree in agricultural economics and/or fisheries management.
Minimum of seven years experience in project planning and management relevant to the fisheries and coastal management sectors. Moreover the CTA should have multiple experiences with PRA's and must be able to work under tropical conditions. Well-established organizational, analytical and policy skills are a strong requirement. Other qualities to be matched are proven excellence in cross-cultural development situations through excellent inter personal skills and a proven ability to report and document in a clear and concise manner. Knowledge of the Vietnamese language will be an advantage.

Language: English

EOD: As soon as possible

ANNEX 1 a

Name of Position: **APO – Aquatic Biologist**
Duration of Assignment: **24 p/m**
Duty Station: **Thua Thien Hue, Viet Nam**

Responsibilities:
Under the general guidance of the Operation Division at FAO Headquarters and the Regional Office, under the direct supervision of the FAO Representative and CTA, the incumbent will work in close collaboration with the National Project Director, the National Project Manager, international and national consultants and other national project staff. The APO is to provide technical assistance to provincial institutions involved in the hydro-biological research component, in lagoon management and environmental protection. Duties will specifically concentrate on the introduction of environmental quality parameters measurement methods and analysis. The incumbent will need to possess specific skill in GIS-based database building and management and experience. Specific duties will entail:

1) Under guidance of the CTA, assist the project in all aspects of participatory research with local institutions and local capacity building for the sustainable management of the hydro-biological resources;

2) Assist in the development of the Integrated Lagoon Management Plan, with respect to the biological and environmental components in the plan, taking into account the sustainable use of the resources.

3) Assist the University of Science in Hue with the hydro-biological data collection, by regularly joining in field trips, and the management of the project laboratory.

4) Assist in the establishment of a database for hydro-biological and socio-economic data, which can be maintained at low cost.

5) Assist the project to network with other similar ongoing national and international assisted initiatives in the country and the region.

6) Contribute to workshops and seminars through contribution in the documentation of project experiences and preparation of technical papers.

7) Carry out additional tasks in the line of duty, which may be assigned from time to time by the direct supervisor.

8) Produce and end-of assignment report

Qualifications: The APO should have a university degree in aquatic biology or marine biology. Capability to work in tropical conditions and excellent report writing skills

Language: English, (with willingness to learn Vietnamese during a four week training course in Hanoi at the start of the assignment)

EOD: As soon as possible.

ANNEX 1 b

Name of Position: **APO – Socio-economist**
Duration of Assignment: **24 p/m**
Duty Station: **Thua Thien Hue, Viet Nam**

Responsibilities:
Under the general guidance of the Operation Divisions at FAO Headquarters and the Regional Office and under the direct supervision of the FAO Representative and CTA, the incumbent will work in close collaboration with the National Project Director, the National Project Manager, international and national consultants and other national project staff. The APO will provide technical assistance to provincial institutions in development of the PRA methodology and the adoption of fisheries extension methodologies and technical support services of the project. Specific duties will entail:

1) Under the guidance of the CTA, assist the project in all aspects of PRA, fisheries extension and services including aquaculture development and marketing of fisheries products.

2) Through networking with national institutions, international assisted programs and projects inform and update information in the field of extension methodology and technology.

3) Assist the project in the preparation of contractual arrangements for training and research support and follow-up on the implementation of such contracts.

4) Conduct regular field visits to project areas in order to monitor project extension activities and attend local meetings as an observer.

5) Assist the (international) consultants in the establishment of a credit, savings and insurance programme and follow up on the recommendations of these consultants.

6) Assist the preparation of the Integrated Lagoon Management Plan.

7) Provide advice and support in the organizational strengthening activities of the project, which aim at strengthening the fisherfolk and aquaculturist organizations.

8) Contribute towards the organization and contents of project and non project workshops through preparation of case studies and technical papers.

9) Carry out additional tasks in the line of duty, which may be assigned from time to time by the direct supervisor

10) Produce and end-of assignment report

Qualifications: The APO should have a university degree in agricultural economics or agricultural marketing, interest in the fisheries sector, experience in PRA and gender matters and excellent report writing skills.

Language: English, (with willingness to learn Vietnamese during a four week training course in Hanoi at the start of the assignment)

EOD: As soon as possible.

ANNEX 1 c

National Project Director (NPD)

Duration of Assignment: Three years (part-time).
Duty Station: Hue City, Vietnam.

Qualifications:

The NPD must have a university degree in fisheries, preferably at Masters level. Moreover he will have at least ten years practical experience in lagoon and fisheries issues in Vietnam, and extensive knowledge of fisheries and aquaculture development, management and administration in Vietnam. He should understand English and be able to express him/herself in English language as well.

Responsibilities:

1. Promote, liaise and maintain close working cooperation with the PPC, DOFI (other provincial departments under the PPC), MOFI, and FAO to ensure smooth implementation of all aspects of the project.
2. Guarantee and maintain good contacts with other stakeholders in the sector in order to increase their commitment to the project objectives and participation in project activities;
3. Facilitate the recruitment of national and international consultants, including visas for the latter.
4. Ensure that all Government inputs into the project (among others, office, laboratory and training accommodation, secretarial, accountancy, drivers, guarding and cleaning assistance, equipment, training and support personnel) are available when required and are used by the project.
5. Assist in the negotiation of contracts with parties specified in the Project Document.
6. Assist the CTA in liaising with other projects that be active in assisting in the implementation of the research, training, coordination and planning activities of the project.
7. Facilitate access to data and information for the project team in the central government institutions and lower level agencies and institutes;
8. seek assistance for a follow-up under the umbrella of the Government and/or another donor;
9. Assist and actively participate in Tri-Partite Review meetings, evaluations and monitoring missions, as required by the Project Document, including the preparation of the terminal report.
10. Perform any other duties to assure successful implementation of the project.

Recruitment: The National Project Director will be selected and appointed by the Government.

ANNEX 1 d

National Project Manager (NPM)

Duration of Assignment: Three years (full-time).
Duty Station: Hue City, Vietnam.

Qualifications:
The NPM must have a university degree in fisheries or aquaculture, preferably at Masters level. Moreover he will have at least five years practical experience in lagoon, aquaculture and fisheries management issues in Vietnam, and extensive knowledge of fisheries and aquaculture development, management and administration. He should have development project management experience, be able to communicate clearly in English and have excellent report writing skills. Moreover, he should have experience with participatory methods, livelihoods analysis and be able to deliver and monitor training in a range of fisheries and aquaculture issues.

Responsibilities:
Under the supervision of the CTA, and in his/her absence under the guidance of the FAO Representation in Hanoi, and in close coordination with the NPD, FAO Technical Support, international and national consultants and other national project staff, the NPM will:

1. Assist the CTA in all duties as specified in the Terms of Reference of the CTA (annex 1), and assume the duties of the CTA in his/her absence.

2. Implement project work plans in accordance with work plan requirements. In close coordination with FAO and the CTA, ensure timely delivery of equipment, recruitment, placement of consultants and reporting by them, selection of personnel for fellowships, study tours and other training activities, arrangement and conduct of research and extension activities and project reporting.

3. Ensure that all reports, manuals and other documentation prepared by consultants are of high quality.
4. Plan and supervise the effective establishment and implementation of participatory planning, implementation and monitoring processes.
5. Provide technical guidance to project staff and counterparts on participatory methods, livelihoods analysis and training methodologies, materials and approaches in a range of fisheries and aquaculture issues.
6. Arrange internal travel in Vietnam for consultants and visiting missions to project sites as required.
7. Arrange and supervise all workshops, training courses, seminars and field days that are required for project implementation.
8. Assume responsibility for the submission of all project reports to the PPC and MOFI in a timely manner.
9. Assist with monitoring and evaluation missions.
10. Take the lead in the formulation of follow-up project proposals and the search for potential donors to finance follow-up activities.
11. Prepare brief progress notes as required by the CTA and the budget holder and an end-of-assignment report providing activity-output indicators including clear recommendations.
12. Perform any other duties to assure successful implementation of the project.

Recruitment: NPM will be selected and recruited by FAO

ANNEX 1 e

FAO Technical Support Services

Fisherfolk and farmers' organization specialist (FIRI)

Duration of Assignment: 1.5 months (over the course of the project)
Duty Station: Hue City, Vietnam.

Responsibilities:

- Develop training and extension materials on the organization fisherfolk and aquaculturists (e.g. solidarity groups, associations, cluster groups, cooperatives),.
- Train local extension workers and project staff in organizational skills
- Assist in the first training sessions delivered by extensionists
- Evaluate and further improve the training approach in this field
- Assist and advise on aquaculture resource issues when required
- Advise on the aquaculture survey approach and contents
- Technically assist in the formulation of the second phase of the project and other follow-up proposals
- Read and review report/s of the national consultants and project staff in relation to the aquaculture survey
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Fisheries credit, savings and insurance specialist (FIIT)

Duration of Assignment: 1.5 months (over the course of the project)
Duty Station: Hue City, Vietnam.

Responsibilities:

- Identify the needs and opportunities for fisheries (including aquaculture) credit, savings and insurance
- Prepare a framework for a future credit, saving and insurance programme in assistance of the fisheries and aquaculture sector in Thua Thien Hue
- Develop training and extension materials that suit training of fisherfolk and aquaculturist organizations on credit and savings issues.
- Assist and advise on credit, savings and insurance issues when required
- Technically assist in the formulation of the second phase of the project and other follow-up proposals
- Read and review report/s of the national consultants and project staff in relation to credit and savings issues
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Aquatic resources planning and policy development specialist (FIPP)

Duration of Assignment: Two months (over the course of the project)
Duty Station: Hue City, Vietnam.

Responsibilities:

- Assist in the recruitment of the CTA, NPM and various international consultants
- Be technically responsible for the 1st project workshop in which the project logical framework will be amended and completed for the first year and the project activities will be brought in line with latest developments in the province
- Assist in the drafting of the first annual workplan
- Technically assist in and provide advice on the formulation of the management plan
- Provide technical guidance in the participatory formulation of the implementation strategy
- Advise on the PRAs and socio-economic surveys
- Carry out the backstopping tasks that relate to the functions of a Lead Technical Unit
- Read and review report/s of the international and national consultants and project staff in relation planning and strategy formulation and the various surveys
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Fisheries law and regulations specialist (LEGN)

Duration of Assignment: 0.5 months (over the course of the project)
Duty Station: Hue City, Vietnam.

Responsibilities:

- Identify the areas in which the management plan is conflicting with the existing laws and regulations and propose solutions for the regulatory problems identified
- Make sure that the management plan is in line with national and international regulations and standards
- Advise on legal and regulatory issues
- Read and review report/s of the national consultants and project staff in relation to legal and regulatory issues
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Fisheries project monitoring and evaluation (FIRI/RAPI/FIPP)

Duration of Assignment: 1.5 months (over the course of the project)
Duty Station: Hue City, Vietnam.

Responsibilities:

- Monitor the project progress, results, achievements and impact against the logical framework and the initial resource and socio-economic surveys
- Evaluate the participatory approaches used, training programme effectiveness and the sustainability of the Integrated Management Plan
- Contribute to and join in tri-partite reviews and assist in the overall project evaluation when required
- Provide advice and recommendations for the fine-tuning of project activities
- Read and review project reports
- Technically assist in the formulation of the second phase of the project and other follow-up proposals
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

ANNEX 1 f

International Consultancy Services

PRA/community development specialist (NACA)

Duration of Assignment: 1.5 months (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the FAO FIPP and RAPI services, the Participatory Rural Appraisal/community development specialist from the Network of Aquaculture Centers in Asia-Pacific (NACA) will be responsible for the following tasks:

- Training of the project extension workers in participatory methods
- Develop PRA tools that are suitable for the project situation
- Prepare the outline for the socio-economic surveys/PRAs including an evaluation of the livelihood status of the lagoon communities, the economic and financial status (including savings, investment and borrowing and risk management habits and practices), resource use conflicts, problems and constraints and current management practices (what exists and how it works, weaknesses, successes, what are the objectives (e.g. fishing groups, farmers union, women's unions, fishing union etc).
- Provide advice on the responsibilities, strengths, weaknesses of (local) government, non–government and financial institutions in relation to planning and management of the lagoon system.
- Technically assist in and provide advice on the formulation of the management plan from the view point of the community development side.
- Review and finalize the reports resulting from the PRAs
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

GIS specialist (University of Siena)

Duration of Assignment: 1.5 months (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the FAO FIPP service, the Geographical Information System (GIS) specialist from the University of Siena, Italy, will be responsible for the following tasks:

- Lead the mapping of the lagoon resources and activities
- Build a computerized GIS-based database for thematic mapping.
- Carry out a multi-temporal analysis of lagoon environment for short-term variation and vulnerability assessment, using remotely sensed images.
- Technically advice on the application of GIS in the fishery and environment survey and the aquaculture survey
- Develop training materials on GIS and resource mapping for use by the project
- Training of local university and counterpart staff in the use of GIS
- Review the use of GIS tools in the reports resulting from the surveys
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

Biological and micro-biological, nutrient and in particular matter analysis specialist (University of Ancona)

Duration of Assignment: One month (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the FAO FIPP, RAPI and FIRI services the consultant will have the following responsibilities:

- Lead the biological and micro-biological, nutrient and in particular matter analysis exercises of the project
- Report on the analyses carried out
- Train local staff and university counterparts in the analyses, using training materials that suit the local circumstances
- Provide biological advice with respect to the contents of the fishery and environment survey (e.g. on the physico-chemical condition, hydro-biological and fishery resources, ecosystem evaluation and zoning) and review the survey reports from a biologist point of view
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

Physical environment assessment specialist (University of Ancona)

Duration of Assignment: One month (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the FAO FIPP, RAPI and FIRI services the consultant will have the following responsibilities:

- Lead the Physical environment assessment exercises of the project
- Report on the assessments carried out
- Train local staff and university counterparts in the zoning analyses and planning issues, using training materials that suit the local circumstances
- Provide environmental advice with respect to the contents of the fishery and environment survey (e.g. fishery resources, ecosystem evaluation and zoning) and the aquaculture survey and review the survey reports from a environmentalist point of view
- Assist in the formulation of the management plan with advice on where the various activities currently carried out in the lagoon should be carried out best
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

Monitoring and Evaluation of the hydro-biological research specialist (University of Ancona)

Duration of Assignment: 1.5 months (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the FAO FIPP, RAPI and FIRI services the consultant will have the following responsibilities:

- Provide advice on the research programme that the project carries out with the local counterpart universities, communities and research institutes.
- Monitor and evaluate the hydro-biological research components of the project.
- Advice on the purchase of laboratory equipment and laboratory and resource monitoring techniques
- Train local project staff and university counterparts in hydro-biological data collection, analyais and reporting
- Provide technical inputs in the formulation process of the management plan and the implementation strategy as far as hydro-biological resource issues concern
- Design a research framework that will be sustainable after the projects termination
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

ANNEX 1 g

TCDC Consultancy Services

Fishery sector conflict management specialist (NACA)

Duration of Assignment: Two months (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the FAO FIPP, RAPI and FIRI services the Technical Cooperation between Developing Countries (TCDC) consultant specialized in conflict management in relation to aquatic resources management, from the Network of Aquaculture Centers in Asia-Pacific (NACA) will be responsible for the following tasks:

- Assist the project in the establishment of conflict resolution procedures that are affecting the formulation of the management plan and the implementation strategy
- Training of the project extension workers in conflict management issues
- Develop conflict management tools that are suitable for the project situation
- Prepare a specific conflict management guidebook that can be used in the process of solving future conflicts in the lagoon about aquatic resource use.
- Assist in the PRAs on conflict management issues
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

ANNEX 1 h

National Consultancy Services

Aquaculture Development Specialist

Duration of Assignment: Four months (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the FAO RAPI and FIRI services the national aquaculture development specialist will be responsible for the following tasks:

- Technically advise on and assist in the aquaculture survey to determine the current status, opportunities and constraints for aquaculture development in the lagoon,
- Review and finalize the aquaculture survey report
- Assist the project in the formulation of the management plan and the implementation strategy on aquaculture specific issues
- Provide training of DOFI and project staff on specific aquaculture issues as required
- Provide training to the target group on a variety of aquaculture issues (e.g. feeding, pond and cage management, reproduction, fish health management)
- Develop simple aquaculture training materials to be used in the training and dissemination of project findings and results
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

Artisanal fisheries Specialist

Duration of Assignment: Four months (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the FAO RAPI and FIRI services the national artisanal fisheries specialist will be responsible for the following tasks:

- Technically advise on and assist in the fisheries resources and environment survey to determine the current status, opportunities and constraints for artisanal fisheries in the lagoon,
- Review and finalize the fisheries resources and environment survey report
- Assist the project in the formulation of the management plan and the implementation strategy on artisanal fisheries specific issues
- Provide training of DOFI and project staff on specific artisanal fisheries issues as required
- Provide training to the target group on a variety of artisanal fisheries issues (e.g. gear reparation, gear selection, maintenance of vessels/boats, marketing of fish)
- Develop simple artisanal fisheries training materials to be used in the training and dissemination of project findings and results
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

Rural credit and savings specialist

Duration of Assignment: Two months (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the FAO FIIT service the national rural credit and savings specialist will be responsible for the following tasks:

- Assist the FIIT officer in the identification of the needs and opportunities for fisheries (including aquaculture) credit, savings and insurance
- Assist the FIIT officer in the preparation of a framework for a future credit, saving and insurance programme in assistance of the fisheries and aquaculture sector in Thua Thien Hue
- Assist the FIIT officer in the development of training and extension materials that suit the training requirements of fisherfolk- and aquaculturist organizations on credit and savings issues.
- Assist and advise on credit, savings and insurance issues in the process of the formulation of the management plan and the implementation strategy when required
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

Two PRA/community development specialists

Duration of Assignment: 12 months in total (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the International consultant on PRA/community development the two national PRA/community development specialists will be responsible for the following tasks:

- Training of the project extension workers in participatory methods
- Assist the international consultant in the preparation of the outline for the socio-economic surveys/PRAs including an evaluation of the livelihood status of the lagoon communities, the economic and financial status (including savings, investment and borrowing and risk management habits and practices), resource use conflicts, problems and constraints and current management practices (what exists and how it works, weaknesses, successes, what are the objectives (e.g. fishing groups, farmers union, women's unions, fishing union etc)
- Assist in the implementation of the surveys and PRAs
- Provide advice on the responsibilities, strengths, weaknesses of (local) government, non–government and financial institutions in relation to planning and management of the lagoon system.
- Technically assist in and provide advice on the formulation of the management plan from the view point of the community development side.
- Review and assist the international consultant in the finalization of the reports resulting from the PRAs
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

Biocentric mapping and taxonomy specialist

Duration of Assignment: Two months (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the international consultant on monitoring and evaluation of the hydro-biological research the national consultant will have the following responsibilities:

- Advice the local university counterparts on biocentric mapping
- Be technically responsible for setting up the taxonomy research of the project in such a way that it can be easily maintained by the universities after the project termination
- Develop training tools and materials on biocentric mapping for use by the universities in Hue.
- Evaluate the use of the training materials developed
- Provide advice with respect to the contents of the fishery and environment survey and support the inclusion of the biocentric mapping work in the survey reports
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

Biodiversity assessment specialist

Duration of Assignment: Two months (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the technical supervision of the international consultant on monitoring and evaluation of the hydro-biological research the national consultant will have the following responsibilities:

- Provide technical advice to the project and its counterparts on biodiversity assessment issues
- Support the assessments carried out by the project
- Train local DOFI and DOSTE staff and university counterparts in biodiversity assessment methodologies and help to establish a cost-effective and sustainable framework to continue with the assessments
- Provide advice with respect to the contents of the fishery and environment survey (e.g. fishery resources, ecosystem evaluation and zoning) and the aquaculture survey on biodiversity issues and contribute to and review the survey reports on these aspects
- Assist in the formulation of the management plan with advice on where the various activities currently carried out in the lagoon should be carried out best
- Prepare comprehensive reports containing the outcomes of the missions and work accomplished and submit these to the CTA and FAO/FIPP in both hard copy and electronic formats (in Microsoft Word 6)

Recruitment: Consultant recruitment will be arranged by FAO

ANNEX 1 i

National Technical Support Staff (Ten)

Duration of Assignment: 300 months (over the course of the project)
Duty Station: Hue City, Vietnam.

Under the overall supervision of the CTA and the NPM, the technical supervision of the various FAO Technical Support Services and international consultants and in collaboration with counterpart staff and national consultants the ten national technical support staff will assist in the general implementation of the project activities and will have the following tasks:

- Assist in carrying out the PRAs, socio-economic surveys, fishery and environment survey and the aquaculture survey; particularly in the field work, such as data collection, organization of meetings, training sessions and visits.
- Attend and actively contribute to training courses of the project, in order to be able to replicate the training in other communes (training of trainers)
- Assist in hydro-biological research and environmental monitoring activities of the project
- Contribute to the organization of meetings and workshops
- Assist in the distribution of project materials (leaflets, reports, books, etc) for the promotion of the project and the awareness raising on its achievements
- Assist when necessary the institutions and organizations which collaborate with the project through joint activities and under contract.
- Assist in the promotion, awareness raising and dissemination of the management plan and the implementation strategy
- Perform any other duties as required by the project management

Recruitment: National technical support staff recruitment will be arranged by FAO

ANNEX 2

Non-expendable equipment list

General Equipment

	Item	Unit price in US$	Quantity	Amount in US$
1	new four-wheel drive vehicles	20 000	2	40 000
2	fiberglass open boats	7 000	2	14 000
3	outboard motors of 75 –100 Hp	6 000	2	12 000
4	motorbikes (scooters)	2 000	10	20 000
5	mobile phones	200	10	2 000
6	portable generator	500	1	500
	Total			**88 500**

Office and training equipment

1	personal computer (multimedia)	1 500	6	9 000
2	Software (unspecified)	1 000	set	1 000
3	UPS	100	6	600
4	printers	300	3	900
5	photocopier	2 500	1	2 500
6	fax	400	1	400
7	VCD/DVD recorder	800	1	800
8	TV	500	1	500
9	digital photo/video camera	1 500	1	1 500
10	overhead projector with screen	400	2	800
11	multimedia projector	3 500	1	3 500
12	air conditioner	1 000	5	5 000
14	manual GPS	1 000	2	2 000
15	differential GPS	10 000	1	10 000
	Total			**38 500**

Laboratory equipment

	Item	Unit price in US$	Quantity	Amount in US$
1	pH meter (model 210A)	600	1	600
2	Oxygen meter	680	2	1 360
3	Conducti meter	360	2	720
4	6 criteria water analysis meter	5 850	1	5 850
5	Ss-meter	170	1	170
6	Multi analysis photometer + test-kit and refill	5 000	1	5 000
7	BOD track equipment	3 320	1	3 320
8	Trinobicular microscopes with photo-camera (model 993ES)	2 630	1	2 630
9	Microbiological environment lab	1 500		1 500
10	Water flow speed meter	3 020	1	3 020
11	Tide meter	470	1	470
12	Salinity meter	520	1	520
	Miscellaneous lab materials needed (estimation)	4 840	1	4 840
	Total			**30 000**

ANNEX 3

Contracts

Contractual agreements will be signed for the following tasks:

- Mapping and monitoring of the coastal environment and identification of sensible areas for coastal erosion and wash-over breeching (University of Ancona in joint collaboration with the University of Science of Hue) US$10 000
- Multi-temporal analysis of lagoon evolutionary trend and short-term forecasting. (University of Ancona in joint collaboration with the University of Science of Hue) US$10 000
- Geophysical prospecting and mapping ecosystems (University of Ancona in joint collaboration with the Hai Phong Institute of Oceanology and the University of Science of Hue) (US$12 000).
- Biocenotic mapping and ecosystem evaluation and zoning (University of Ancona in joint collaboration with the Hai Phong Institute of Oceanology and the University of Science of Hue) (US$10 000).
- GIS-based thematic mapping (University of Ancona in joint collaboration with the Research Institute for Aquaculture No.1) (US$8 000)
- Training in navigation and fisheries techniques (University of Nha Trang) (US$5 000)
- Training on aquaculture issues (Research Institute for Aquaculture No.1) (US$10 000)
- Training on fisheries technology issues, gear and motor maintenance. (US$10 000)
- Various studies (e.g. socio-economic impact, gender, etc) (US$5 000)
- Production of audio-visual materials (US$10 000)
- Small scale infrastructure works (US$5 000)
- Production of promotional and didactical materials (US$5 000).

Total US$100 000

ANNEX 4

Project Budget in ORACLE format
DRF Project No. GCP/VIE/029/ITA
Budget holder: FAO Representative in Viet Nam
Name: Integrated Management of Lagoon Activities in Thua Thien Hue Province, Viet Nam
Org: FAO

Description	Account	Year 1	Year 2	Year 3	Total	p/m
Staff costs (salaries)						
Professional (CTA –P4 level)	5011	152 000	80 000	0	232 000	18
General Service (NPM + Administ. + 2 Interpreters)	5012	30 000	30 000	30 000	90 000	144
Total Staff Costs		**182 000**	**110 000**	**30 000**	**322 000**	**162**
Consultants	5013					
International		57 000	22 000	21 000	100 000	8
TCDC/Retired Experts		7 000			7 000	2
National		14 000	10 000	4 000	28 000	28
National technical support staff		20 000	25 000	25 000	70 000	300
Total Consultants		**98 000**	**57 000**	**50 000**	**205 000**	**345**
Contracts	5014	50 000	25 000	25 000	100 000	
Travel	5021	38 000	42 000	34 000	114 000	
Training	5023	22 000	55 000	65 000	142 000	
Equipment/materials and supplies						
Expendable	5024	20 000	20 000	20 000	60 000	
Non-expendable	5025	120 000	27 000	10 000	157 000	
Total Equipment and Supplies		**140 000**	**47 000**	**30 000**	**217 000**	
Technical Support Services (TSS)	5027					
Technical Services		30 000	30 000	63 000	123 000	7
Project Evaluation Costs		0	0	19 500	19 500	
(Terminal) Report Costs		0	0	5 500	5 500	
Total Technical Support Services		**30 000**	**30 000**	**88 000**	**148 000**	
General Operating Expenses	5028	25 000	25 000	25 000	75 000	
Sub-total Project Inputs		**585 000**	**391 000**	**347 000**	**1 323 000**	
Support Costs (13 percent)	5029	76 050	50 830	45 110	171 990	
Total Budget		**661 050**	**441 830**	**392 110**	**1 494 990**	

ANNEX 4 a

Contribution by Thua Thien Hue's Provincial People's Committee to the project (in millions of VND).

Description	Year 1	Year 2	Year 3	Total
Salary of staff				
1 NPD	12	12	12	36
1 Secretary	10	10	10	30
1 Accountant	10	10	10	30
2 Driver	20	20	20	60
1 Watchman	10	10	10	30
1 Cleaner	10	10	10	30
Travel				
Duty travel	30	30	30	90
General Operating Expenses				
Office Utilities	100	100	100	300
Premises				
Upgrading office space	430			430
Upgrading laboratory	250			250
Construction of boat house	180			180
Office premises	84	84	84	252
Training premises	60	140	140	340
Total Budget	**1 206**	**426**	**426**	**2 058**