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Report of the

NATIONAL WORKSHOP ON MICRO-ENTERPRISE DEVELOPMENT IN COASTAL COMMUNITIES IN THE PHILIPPINES: SHARING OF EXPERIENCES AND LESSONS LEARNED

Davao City, Philippines, 7–10 March 2006

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PREPARATION OF THIS DOCUMENT

This is the report of the National Workshop on Micro-enterprise Development in Coastal Communities in the Philippines held in Davao City, Philippines, on 7–10 March 2006. The report was prepared by Jessica Muñoz, Project Director, Fisheries Resource Management Project, Bureau of Fisheries and Aquatic Resources, Department of Agriculture (Philippines), and Raul G. Roldan, Consultant. The chapter on the Pilot Project on Micro-enterprise Development in Southern Iloilo and Banate Bay is based on a report prepared by Carlos C. Baylon, College of Fisheries and Ocean Sciences, and Benmar B. Panaguiton, College of Management, University of the Philippines in the Visayas. Susana Siar, Fishery Industry Officer, FAO Fisheries and Aquaculture Department, Rome, and Uwe Tietze, Consultant, edited the document and wrote the introductory chapter.

The appendices contain the list of participants of the National Workshop on Micro-enterprise Development in the Philippines, the list of resource persons and facilitators of the Pilot Project on Micro-enterprise Development in Southern Iloilo and Banate Bay as well as the business plans for the micro-enterprises promoted by the project.

Distribution:

Participants in the workshop
FAO Fisheries and Aquaculture Department
FAO Fisheries Officers in Regional and Subregional Offices
FAO Representation in the Philippines
Directors of Fisheries
Multi- and bilateral development agencies and financial institutions

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ABSTRACT

The goals of the National Workshop on Micro-enterprise Development in Coastal Communities in the Philippines were to exchange experiences and good practices and to identify financial and institutional support services and facilities to sustain livelihoods and micro-enterprise development in coastal areas. The workshop was attended by 45 participants from people's organizations, fisherfolk cooperatives, non-governmental organizations, national government agencies and financing institutions. The discussions at the workshop showed that livelihood diversification and the improvement of income and employment opportunities in coastal fishing communities are crucial for their participation in the conservation and management of aquatic resources.

Key elements of sustainable micro-enterprise development as identified by the workshop include capability building of fisherfolk organizations such as cooperatives and associations to implement livelihood projects, the preparation of feasibility studies and business plans, technical skills development, sound financial management practices, development of innovative and high quality products, access to new markets including urban and regional markets and the full participation of fisherfolk in the identification of livelihood activities and micro-enterprises.

The Pilot Project in Support of the Development of Micro-enterprises in Banate Bay, Iloilo and Southern Iloilo was implemented by the University of the Philippines in the Visayas in cooperation with the Banate Bay Resource Management Council Inc. and the Southern Iloilo Coastal Resource Management Council with support from FAO. A number of micro-enterprises were introduced and supported in the municipalities of Banate Bay and Southern Iloilo including fish ball production, shrimp paste production, oyster and mussel culture, salt production and iodization, fish marketing and fish sauce production. Training programmes were conducted for fisherfolk on product development and marketing of their products. Good coordination with local government units, active participation of all stakeholders and conduct of appropriate training programmes are considered essential for the sustainability of the micro-enterprises. The involvement of fisherfolk in livelihood activities and micro-enterprises is strengthening their participation in the fisheries and aquatic resources management councils of Banate Bay and Southern Iloilo. The experiences of the pilot project also suggest that in order to make various income generating livelihood initiatives sustainable and stand on their own feet, many of these need to develop further into full-fledged micro-enterprises.

Considerable scope lies in farming of aquatic organisms such as seaweed, shellfish and various fish species as well as in fisheries related value adding activities such as fish processing and marketing. As far as the relationship between the conservation of aquatic resources and the generation of income is concerned, the quality of the aquatic environment and the economic success of mariculture micro-enterprises and activities are directly related. This should create a strong motivation for fisherfolk enterpreneurs involved in such type of enterprises to be strong advocates and stewards of a healthy coastal ecology. In the long term, fisherfolk will benefit from the development of various micro-enterprise initiatives. It is clearly in their interest.

CONTENTS

ACRONYMS AND ABBREVIATIONS

AAPMPCI	Aringay Aquaculture Producers' Multi-purpose Cooperative Inc.
AFC	Association of Fishery Cooperatives
AFMA	Agriculture and Fishery Modernization Act of 1997
AMPCO	Anonang Farmers' and Fishermen's Multi-purpose Cooperative
ATI	Agricultural Training Institute
AUL-CRES	Aquinas University Legazpi Center for Research and Education Services
BBRMCI	Banate Bay Resource Management Council Inc.
BFAD	Bureau of Food and Drugs
BFAR	Bureau of Fisheries and Aquatic Resources
BFARMC	Barangay Fisheries and Aquatic Resources Management Council
BIR	Bureau of Internal Revenue
BLRC	Barangay Learning Resource Center
BODECO	Bolo Development Cooperative
BOT	Board of Trustees
CAO	City Agriculture Office
CBCRMP	Community-based Coastal Resource Management Project
CBTD	Community-based Training Enterprise Development
CCTF	Compulsory Center Training Fund
CDA	Cooperative Development Authority
CDW	Community Development Worker
CFC	Common Fund for Commodities
CFOS-IFPDS	College of Fisheries and Ocean Sciences – Institute of Fisheries Policy and Development Studies
CISP	Cooperative Insurance of the Philippines
CMFA	Cogon Marine Fish Cage Association
COFMCO	Consuelo Fisherfolk Multi-purpose Cooperative
COMAT	Cooperative Management Committee
CLET	Composite Law Enforcement Team
CRM	Coastal Resource Management
CRMC	Coastal Resource Management Council
CUP	Cooperative Union of the Philippines
CVRP	Central Visayas Regional Project
DA	Department of Agriculture
DAC	Development Assistance Centre
DBP	Development Bank of the Philippines
DENR	Department of Environment and Natural Resources
DOH	Department of Health
DOLE	Department of Labour and Employment
DOST	Department of Science and Technology
DPWH	Department of Public Works and Highways
DSWD	Department of Social Welfare and Development
DTI	Department of Trade and Industry
EDF	Economic Development Foundation
FAO	Food and Agriculture Organization of the United Nations
FARMC	Fisheries and Aquatic Resources Management Council
FETCD	Fisheries Extension, Training and Communications Division
FMU	Fisheries Management Unit
FRMP	Fisheries Resource Management Project
FSI	Fundacion Santiago Inc.
FSP	Fisheries Sector Programme
GFI	Government Financial Institution

GMP-SSOP	Good Manufacturing Practices with Standard Sanitation and Operating Procedures
HACCP	Hazard Analysis Critical Control Point
ICF	International Co-operative Fisheries Organization
ICM	Integrated Coastal Management
IFARMC	Integrated Fisheries and Aquatic Resource Management Council
IFPT	Institute of Fish Processing Technology
INFOFISH	Intergovernmental Organization for Marketing Information and Technical Advisory Services for Fishery Products in the Asia and the Pacific Region
KALIPI	Katipunan Ng Liping Pilipina (National Organization of Filipino Women)
JEP-ATRE	Jerry E. Pacturan Consultants and Trainers – Alternative Technology for Resource Enhancement Company
JVOFI	Jaime V. Ongpin Foundation Inc.
LAICOR	Lanao Industrial Corporation
LBP	Land Bank of the Philippines
LGC	Local Government Code
LGU	Local Government Unit
MAO	Municipal Agriculture Office
MAPPAI	Magsikap Pagasa Paraiso Association Inc.
MFARMC/CFARMC	Municipality/City Fisheries and Aquatic Resource Management Council
MFFWMPC	Mambuquiao Farmers', Fisherfolk's and Women's Multi-purpose Cooperative
MFMPC	Maloro Fisherfolk's Multi-purpose Cooperative
MFO	Municipal Fishery Ordinance
MOA	Memorandum of Agreement
NBATRC	National Brackishwater Aquaculture Technology Research Center
NDCC	National Disaster Coordination Council
NFARMC	National Fisheries and Aquatic Resource Management Council
NGA	National Government Agency
NGO	Non-governmental Organization
NHA	National Housing Authority
OIDCI	Orient Integrated Development Consultant Inc.
OMI	Organizational Maturity Index
PANC	Philippine Article Numbering Council
PANRO	Provincial Agriculture and Natural Resources Office
PCU	Provincial Cooperative Union
PFWC	Philippines Federation of Women Cooperatives
PhilHealth	Philippine Health Insurance Corporation
PHP	Philippines Pesos
PIU	Project Implementing Unit
PLDT	Philippine Long Distance Telephone Co.
PMO	Project Management Office
PNP	Philippines National Bank
PNP	Philippines National Police
PO	People's Organization
PPIU	Provincial Project Implementation Unit
QUEDANCOR	Quedan & Rural Credit Guarantee Corporation
RAAC	Risk Asset Acceptance Criteria
ROI	Return on Investment
RFTC	Regional Fishermen's Training Center
RIC	Rural Improvement Club

RSMT-IGCT-CF	Rapid Savings Mobilization Technique – Informal Group Consolidation Technique Cooperative Formation
SDP	Seaweed Development Programme
SEC	Securities and Exchange Commission
SG	Savings Group
SIAP	Seaweed Industry Association of the Philippines
SICRMC	Southern Iloilo Coastal Resource Management Council
SMC	San Miguel Corporation
SME	Small and Medium Enterprise
SMMSR	Samahan ng Maliliit na Mangingisda ng San Roque
SMPC	Storum Multi-purpose Cooperative
SSS	Social Security System
TESDA	Technical Education and Skills Development Authority
TIN	Tax Identification Number
TLRC	Technological Livelihood and Resource Center
TSKI	Taytay Sang Kauswagan
UCPB	United Coconut Planters' Bank
UPLB-IPB	University of the Philippines at Los Baños – Institute of Plant Breeding
UPV	University of the Philippines in the Visayas

PART 1: INTRODUCTION

1. Conservation of aquatic resources and livelihoods diversification

Nearly two-thirds of the population of the Philippines is concentrated in the coastal zone, which is the base for major industrial, commercial, social as well as recreational activities. Among the economic activities carried out in the coastal zone, the fisheries sector plays an important role. In 2005, the fishery sector contributed PHP116 billion or 2.1 percent to the gross domestic product (GDP) of the Philippines in current prices.[1] In 2003, the Philippines ranked eight among the top fish producing countries in the world with a total production of 4.16 million tonnes of fish, crustaceans, molluscs and aquatic plants like seaweeds.

As far as employment in fishing and fish farming is concerned, 1 614 368 persons are involved in fishing in municipal waters extending up to 15 km offshore, while 16 497 fishers are involved in commercial fishing operations in waters beyond 15 km. In addition to those who are involved in fishing operations, there are 226 195 aquaculturists, who are involved in various types of farming of fishes, molluscs, seaweeds and other aquatic organisms.

The concentration and increase of the population in the coastal zone and the related urbanization and industrialization has many negative impacts on the coastal and aquatic environment, ecology and resources. Pollution and contamination of coastal waters can be commonly observed. Deforestation in watersheds has resulted in coastal erosion and siltation of coastal streams and waters. Only five percent of coral reef areas in the Philippines are still in an excellent condition. Sixty percent of mangrove areas have been lost over the last four decades. Many seagrass beds, which serve as nursery grounds for fish species, have disappeared. Destructive aquaculture and fishing methods have contributed to the decline of fish stocks. Overfishing and depletion of aquatic resources can be observed in many municipal waters.[2]

Efforts to rehabilitate and conserve fisheries and aquatic resources and the coastal environment in the Philippines encompass the diversification of livelihoods of coastal fishers through generation of alternative sources of income and employment in fisheries related as well as in non-fisheries sectors. It is in this context that the diversification of livelihoods and development of micro-enterprises is discussed in this report.

Reference to these issues was also made by the twenty-sixth session of the FAO Committee on Fisheries (COFI), held in Rome from 7 to 11 March 2005. The COFI noted a range of issues, which need to be addressed so that small-scale fisheries can make a greater contribution to rural development, sustainable livelihoods, poverty alleviation and food security. These include the lack of rural infrastructure and services, access to credit and microfinance services[3] as well as the reduction of post-harvest losses, better access to markets and adding value to fish and fish products through improved practices in the field of fish handling, preservation, processing and marketing.

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[1] Bureau of Fisheries and Aquatic Resources. 2006. *Philippine Fisheries Profile 2005*.Manila, Philippines. 2006.

[2] For a detailed account of the state of fisheries resources and the enviroment in the Philippines see Part 4.

[3] Tietze, U. & Villareal, L. 2003. *Microfinance in fisheries and aquaculture - guidelines and case studies*. FAO Fisheries Technical Paper 440. FAO, Rome, Italy, and Dorsey, J.F., Ryhanen, J.A. & Tietze, U. 1989. *Revolving loan funds and credit programmes for fishing communities – management guidelines*. FAO, Rome, Italy.

2. Fisheries and coastal management policies: the legal framework

As elsewhere, the livelihoods, income and employment opportunities of fishers and other coastal residents and related enterprise and micro-enterprise development in coastal areas of the Philippines are dependent on the state of the coastal and aquatic environnment and ecology as well as on national and local coastal management policies and regulations. The national policy and legal framework for coastal management in the Philippines consists of national laws, administrative rules and regulations and international treaties and agreements, which define the responsibilities for the management of coastal resources.[4]

Coastal management incorporates local government responsibilities such as planning, protection, legislation, regulation, revenue generation, enforcement, intergovernmental relations, relations with people and non-governmental organizations (NGOs) as well as extension and technological assistance. Coastal management and government responsibilities are directly concerned with the well-being and the livelihoods of coastal residents with special reference to fisherfolk.

The 1987 Constitution of the Philippines is the apex of the hierarchy of laws governing fisheries and coastal management. The Constitution provides general guidance for the management and use of natural resources in the Philippines. Article XII protects the nation's marine wealth and exclusive economic zone and reserves its use exclusively to Filipino citizens. Article XIII protects the rights of subsistence fishers to the preferential use of communal marine and fishery resources and provides support to such fishers through appropriate technology, research and other services.

The Local Government Code of 1991 (Republic Act 7160) decentralizes a considerable number of functions and responsibilities to local government units at the municipal and provincial level. The Code puts the local government units at the forefront of fisheries management within the 15 kilometer limit of the coastal waters. Local government units implement laws for the majority of activities that influence the terrestrial and coastal marine zones. Under the Local Government Code (LGC), legislative powers are exercised through local legislative councils.

The LGC likewise emphasizes the role of local government units (LGUs) with regard to sharing responsibility with the national government for the management and maintenance of the ecological balance within their respective jurisdictions. All ordinances enacted and passed by local government units must be in accordance with the national fishery and environmental laws.

The Fisheries Code of 1998 (Republic Act 8550) provides for the development, management and conservation of the fisheries and aquatic resources of the Philippines. The following policies and provisions are embodied in the Code, which have direct and indirect impacts on the livelihoods of coastal fisherfolk:

- achievement of food security of the population as the overriding consideration in the utilization, management, development, conservation and protection of fisheries resources;
- limitation of the access to the fishery and aquatic resources of the Philippines for the exclusive use of Filipino citizens;

[4]Muñoz, J.C. 2004. Fisheries and coastal resource management in the Philippines. In: FAO: *Guidelines on the collection of demographic and socio-economic information on fishing communities for use in coastal and aquatic resource management*. FAO Fisheries Technical Paper 439. FAO, Rome, Italy.

- rational and sustainable development, management and conservation of fishery and aquatic resources in Philippine waters including the Exclusive Economic Zone (EEZ) and the adjacent high seas with the objective of maintaining the ecological balance and protecting and enhancing the quality of the environment;
- protection of the rights of fisherfolk and giving priority to municipal fisherfolk in the preferential use of municipal waters;
- support to the fishery sector, primarily to municipal fisherfolk,including the women and youth sectors, through appropriate technology and research, adequate finance, credit, production assistance, construction of post-harvest facilities, marketing assistance and other services;
- management of fishery and aquatic resources in a manner consistent with the concept of integrated coastal area management in specific natural fishery management areas, appropriately supported by research, technical services and guidance provided by the state;
- granting of fishing privileges to duly registered fisherfolk organizations such as cooperatives;
- ensuring that municipal waters are utilized by municipal fisherfolk or organizations such as cooperatives, except when an appropriate fishery ordinance is enacted to allow commercial fishing within the municipal waters in accordance with Section 18 of the Code;
- issuance of permits to municipal fisherfolk and organizations such as cooperatives that will be engaged in fish farming and/or seaweed farming;
- granting of demarcated fishing rights to fishery organizations such as cooperatives for mariculture operations.

Recognizing the need to involve local government units as well as coastal communities in the management of coastal resources, the Fisheries Code supports the creation of Fisheries and Aquatic Resource Management Councils (FARMCs) at the national, regional and local levels. These three levels of management councils are the National Fisheries and Aquatic Resource Management Council (NFARMC), the Municipal/City Fisheries and Aquatic Resource Management Council (MFARMC/CFARMC) and the Integrated Fisheries and Aquatic Resource Management Council (IFARMC).

The Agriculture and Fisheries Modernization Act of 1997 (Republic Act 8435) encompasses the principles of poverty alleviation, social equity, food security, rational use of resources, global competitiveness, sustainable development, people's empowerment and protection from unfair competition. The Act provides for the modernization of the agriculture and fisheries sectors by transforming these sectors from a resource-based to technology-based sectors.

With regard to livelihoods and the development of micro-enterprises, the Act aims to enhance profits and incomes in the agriculture and fisheries sectors, particularly among small farmers and fisherfolk, by ensuring equitable access to assets, adequate resources and services and by promoting higher value crops, value-added processing, agribusiness activities and agro-industrialization. The Act also encourages horizontal and vertical integration; the consolidation and expansion of agriculture and fisheries activities; the organization of cooperatives, farmers' and fisherfolk's associations, corporations, nucleus estates and consolidated farms so that these entities will benefit from economies of scale; afford a stronger negotiating position; pursue more focused, efficient and appropriate research and development efforts and hire professional managers.

The Act further promotes processing and value-addition in the agriculture and fisheries sectors as well as the creation of innovative products with the objective to minimize the marketing of raw, unfinished or unprocessed products. The Act further recognizes the importance of fisheries for food security and seeks to increase the volume, quality, and value

of fisheries production for domestic consumption and export through modernization, increased reliance on advanced technology and a market-based approach while giving due attention to the principles of sustainable development.

In the context of the above legal framework, a number of projects and programmes have been implemented in the Philippines, which included components related to poverty alleviation, livelihood diversification and the generation of alternative and supplementary income and employment opportunities.

3. Recent programmes in suppport of aquatic resource management and livelihood diversification

3.1 Central Visayas Regional Project (CVRP), 1984 to 1990

The CVRP was implemented to establish approaches to natural resource management based on community participation, improving natural resource management and on increasing project participants' incomes. The project introduced watershed-based management methods and community organization as the basis for natural resource management. It made an effort to provide security of tenure for resource users. The project promoted the rehabilitation of coastal resources through the establishment of fish and marine sanctuaries, deployment of artificial reefs, mangrove forestation and restriction of fisheries exploitation.

High financial and economic returns were reported for the households in the project area. The project was able to train a cadre of local personnel on community-based natural resource management. Composite law enforcement teams (CLETs) were formed to assist in the implementation of rehabilitation efforts. The CVRP experience established that fishing communities could be effective managers of coastal resources when given the opportunity. It was observed during project implementation that habitat improvement implemented by coastal communities enhances fishery resources and increases fishers' incomes and that stakeholder control over the resources results in a better utilization of such resources.

3.2 Fisheries Sector Programme (FSP), 1990 to 1995

The Fisheries Sector Programme (FSP) implemented by the Department of Agriculture through the Bureau of Fisheries and Aquatic Resources aimed to regenerate coastal resources, rehabilitate the coastal environment and to alleviate poverty among municipal fishers through diversification of their sources of income.This was to be achieved through intensifying aquaculture production for the benefit of domestic consumption and by moving commercial fishing operations away from overfished inshore areas to less exploited offshore waters. The components of the FSP were fishery resource and ecological assessment, coastal resource management, income diversification, research and extension, law enforcement, credit and infrastructure support. The programme was implemented in twelve priority bays for coastal resource management (CRM) and six priority regions of the Bureau of Fisheries and Aquatic Resources for aquaculture. The twelve bays were Manila Bay, Calauag Bay, San Miguel Bay, Tayabas Bay, Ragay Gulf, Lagonoy Gulf, Sorsogon Bay, Carigara Bay, San Pedro Bay, Ormoc Bay, Sogod Bay and Panguil Bay. The six priority regions were Regions 1 (Ilocos Region), 3 (Central Luzon), 4 (Southern Tagalog), 5 (Bicol Region), 6 (Western Visayas) and 9 (Western Mindanao). The programme gave wider latitude to LGUs in making institutional and operational arrangements. It laid the groundwork for future resource management projects and programmes.

The programme reported an increase in the household incomes of local fishing communities attributed to non-fishing livelihood activities. It promoted resource rehabilitation activities such as fish sanctuary establishment and mangrove reforestation, which also served as focal

points for community participation. In line with the provisions of the Local Government Code, fishing ordinances were enacted in order to strengthen the law enforcement capabilities of LGUs. Local interagency, multisectoral resource management councils (bay management councils) were created in the twelve bays. Fisherfolk organizations and associations were also formed. CRM planning as a basic tool for resource management was adopted by the LGUs of the programme area.

3.3 Community-based Coastal Resource Management Project (CBCRMP), 1998 to 2003

The CBCRMP of the Department of Finance was conceived to reduce rural poverty and environmental degradation through support for locally generated and implemented natural resource management projects. These objectives were pursued through enhancing the capacity of low-income rural local government units and communities to plan, implement and sustain priority natural resource management projects; strengthening central government systems to transfer finance and environmental technology and improve the implementation of environmental policies and through providing resources to LGUs to finance natural resource management projects. The CBCRMP was implemented by the Department of Finance in cooperation with various partner agencies including DENR, DA and BFAR.

These partner agencies implemented the project through their existing regional and local staff in the areas, where subprojects were undertaken. The CBCRMP adopted a demand-driven approach and LGUs were encouraged to submit proposals for subprojects on natural resource management and livelihood development. These subprojects were prioritized to respond to local situations. This approach allowed LGUs to take the "driver's seat" in project implementation. Subprojects were implemented in Regions 5 (Bicol Region), 7 (Central Visayas), 8 (Eastern Visayas) and 13 (Caraga Region). The national and regional agencies together with the concerned LGUs monitored and evaluated the status of the subprojects.

3.4 Fisheries Resource Management Project (FRMP), 1998 to 2006

The Fisheries Resource Management Project (FRMP) of BFAR addressed the two critical issues of fisheries resource depletion and poverty among municipal fisherfolk. The project focused on reversing the trend of fisheries resource depletion by controlling illegal fishing and overfishing. It adopted a gradual approach that reduced the level of user competition by restricting new entrants to municipal fisheries through licensing. There was also a reduction of fisherfolk's reliance on fishing by promoting income diversification and through the promotion of mariculture and the development of other commercial enterprises. The project reflected the demand of municipal fisherfolk for public assistance to protect their basic livelihoods and the national and local government's concerns over poverty and environmental degradation. The project was based on the foundations laid down by the Fisheries Sector Programme (FSP) and the various programmes initiated by local communities and LGUs.

The FRMP covered 100 municipalities in 18 bays and gulfs, i.e. Calauag Bay, San Miguel Bay, Tayabas Bay, Ragay Gulf, Lagonoy Gulf, Sorsogon Bay, Carigara Bay, San Pedro Bay, Ormoc Bay, Sogod Bay, Panguil Bay, Honda Bay, Puerto Princesa Bay, Davao Gulf, Lingayen Gulf, Gingoog Bay, Butuan Bay and Sapian Bay. The three components of the project were fisheries resource management, income diversification and capacity building.

The income diversification component promoted income diversification for municipal fisherfolk by organizing self-reliant community groups, promoting micro-enterprises and supporting mariculture development.

4. Issues and lessons learned

The experiences of the latest of these efforts, i.e. the FRMP show that livelihood diversification and development of micro-enterprises in coastal fishing communities is by no means an easy task and requires continued and increased support from local and national government agencies, international donors, NGOs, academic institutions, financial institutions, the private sector and others. This is documented by the findings and recommendations of the National Workshop on Micro-enterprise Development in Coastal Communities in the Philippines, which was organized with support from FAO and described in Part 2 of this report.

While many success stories of livelihood diversification and micro-enterprise development were presented at the national workshop, it also became clear that there are many obstacles to the diversification of livelihoods and ultimately to the alleviation of poverty in coastal areas. The recently held National Seminar for the Promotion of Community-based Fisheries Resource Management by Coastal Small-scale Fishers in the Philippines organized by the Cooperative Union of the Philippines together with the International Co-operative Fisheries Organization of the International Cooperative Alliance[5] identified constraints to livelihood diversification and poverty alleviation, which are very similar to the ones discussed at the national workshop.

Many of the coastal waters are polluted, therefore reducing opportunities for coastal aquaculture. The capability of most cooperatives and fisherfolk organizations for assisting members in implementing livelihood and micro-enterprise projects is rather limited. There is a lack of financial management and bookkeeping skills in many fisherfolk organizations and cooperatives. Knowledge of markets for products and of marketing channels is limited. There is a strong need for continued institutional support from agencies such as LGUs, the BFAR, NGOs, the DTI and other agencies. Existing microfinance and credit services are often insufficient to support livelihood diversification and micro-enterprise development in coastal fishing villages.

Livelihoods of fishers are further constrained by the absence of social security nets such as accident and life insurance coverage and of insurance services for fishing, fish culture assets and equipment and fish culture production. As far as the safety and health of fishers is concerned, safety-at-sea regulations as well as knowledge and equipment need to be greatly improved. The same is true for the protection of coastal villages against the impact of natural disasters.

When looking at past projects and programmes, which involved livelihood diversification and micro-enterprise development components, it can be observed that most past programmes and projects implemented in the Philippines including the FRMP had the common goal of conservation and sustainable fisheries management. Livelihood diversification and promotion of micro-enterprises were the essential elements that supported the main thrusts of the projects and programmes, which was to reduce fishing effort and fishers's involvement in fishing and to strengthen and increase their participation in efforts to rehabilitate and conserve fisheries and aquatic resources and the coastal environment.

In some cases fisherfolk were "awarded" with livelihood projects for their participation in efforts to rehabilitate the coastal environment referred to as beneficiaries. While this approach was probably well-meant, it might have sometimes perpetuated previous Government interventions, which incorporated a supply-oriented "top-down", locally referred to as *dole*

[5] The seminar was organizated by the Cooperative Union of the Philippines (CUP) in cooperation with the International Co-operative Fisheries Organization (ICFO) of the International Co-operative Alliance (ICA).

out rather than a demand-oriented and "bottom-up" approach. As some of the case studies of the FRMP in chapter 2 of this report show, this might have sometimes encouraged a passive and demanding attitude on the side of fisherfolk, who did not understand that it is they themselves, who need to take the initiative for the improvement of their livelihoods and who need to contribute and commit their time, efforts, resources and assets. Only if fisherfolk take the initiative, show commitment and assume responsibility can support from local and national government agencies, academic institutions, NGOs and others have a long-term impact. If fisherfolk remain passive recipients of assistance and welfare, no real long-term and self-sustaining change in terms of livelihood diversification and micro-enterprise development can be expected.

The recommendations and findings of the National Workshop on Micro-enterprise Development in Coastal Communities in the Philippines, which was organized with support from FAO and described in Part 2 of this report, and the findings of the UPV and FAO-supported pilot project described in Part 4, make detailed suggestions as to how to stimulate and ensure an active participation and involvement of fisherfolk in livelihood diversification and micro-enterprise development in their respective communities based on past experiences. The case studies presented at the national workshop and the experiences of the pilot project of the University of the Philippines in the Visayas and FAO in Banate Bay and southern Iloilo also show how constraints can be overcome and viable and sustainable micro-enterprises and livelihood activities can be undertaken.

Regarding the potential for micro-enterprise development and livelihood improvement of coastal fisherfolk, it should be kept in mind that the Philippines, inspite of signs of overfishing and environmental degradation, is still the country with the highest aquatic biodiversity and abundance of aquatic organisms in the world. If properly managed and conserved, the extremely rich coastal and marine resources of the Philippines will provide a sound and rich base for a variety of enterprises that can be undertaken in coastal areas.

Past experiences in the Philippines suggest that to improve livelihoods in fishing communities in a sustainable manner through income and employment generating economic activities and small enterprises, considerable scope lies in farming of aquatic organisms such as seaweed, shellfish and various fish species as well as in fisheries related value adding activities such as fish processing and marketing. As far as the relationship between the rehabilitation and conservation of aquatic resources and the generation of income is concerned, a positive correlation is nowhere more obvious than in the case of coastal aquaculture and particularly the growing of shellfish. Pollution free coastal waters and a clean and healthy coastal environment and ecology are a prime requisite for growing of aquatic organisms such as mussels, clams and oysters as well as for value addition and marketing of the produce. The quality of the coastal and aquatic environment and the economic success of aquaculture micro-enterprises and activities conducted in this environment are directly related. This should create a strong motivation for fisherfolk enterpreneurs involved in such type of enterprises to be strong advocates and stewards of a healthy coastal ecology in their very own interest. Likewise, the health and abundance of fish stocks are directly related to the health and viability of the coastal and aquatic environment and ecology.

As the management of fisheries and aquatic resources in municipal waters gradually improves and effective measures are put in place that reduce fishing effort, eliminate illegal and destructive fishing methods and protect spawning and nursery grounds and critical habitats through closed seasons and areas and through the creation of fish sanctuaries and marine protected areas, the economic viability of capture fisheries operations should eventually improve. This needs to go hand in hand with the promotion of environmentally sustainable fishing operations. Their profitability will be further enhanced if more community based value adding and improved marketing takes place. Here again, the quality of aquatic products, their suitability for value-addition and their marketability and chance to access more

remunerative domestic and foreign markets is directly related to the health of the environment and ecology, where these products are harvested and grown.

This relationship should create a strong motivation for coastal fisherfolk and their organizations, to become strong advocates for the rehabilitation, conservation and management of aquatic and fisheries resources and the coastal environment. A healthy aquatic environment and a healthy small-scale fisheries and aquaculture economy go hand in hand towards a sustainable utilization of aquatic resources.

The case study presented by a representative of INFOFISH in the National Workshop on Micro-enterprise Development in Coastal Communities highlighted that there are growing opportunities for small and medium-scale fisheries to diversify markets and products due to increased demand for fish and fishery products. Through proper coordinated efforts, much of the fish landed can be marketed in a more acceptable and popular value-added form. A sizeable quantity of bycatch landed by small-scale fisheries can be utilized in a more meaningful way by processing it into improved traditional value-added products using appropriate techniques. To achieve this, however, it is necessary to strengthen the infrastructure facilities, provide technical and financial support, introduce technological interventions and provide training to fishers and producers.

In addition to fisheries and aquaculture related livelihood and micro-enterprise development opportunities, there are also a number of livelihood and micro-enterprise development opportunities in sectors other than fisheries as amply demonstrated by the FRMP and shown in Part 3 of this report.

In order to make various income generating livelihood initiatives sustainable and stand on their own feet, many of these need to be developed further into full-fledged micro-enterprises. This is strongly suggested by the findings of the FAO-supported pilot project in Iloilo. Unless this transition takes place, it is doubtful that livelihoods can be diversified in the long run and that the socio-economic, environmental and ecological conditions in coastal barangays will really change and improve in a sustainable manner.

As highlighted by the pilot project implemented in Iloilo, micro-enterprises and small enterprises play an important role in creating jobs and providing income for the majority of Filipinos. Micro-enterprises are defined as businesses that have assets below PHP3 million employing less than 10 people. The Philippine Government believes that micro- and small-scale enterprises could be an effective tool for providing employment, alleviating poverty in rural areas and for advancing the country's economic development.

As many fisherfolk are self-employed owning their own fishing craft and gear and aquaculture installations, they are used to managing a small enterprise and are familiar with procuring inputs, employing crew, managing their expenses and selling their catch and produce. It should be kept in mind though, as pointed out by the pilot project in Iloilo, that the management of a full-fledged micro-enterprise requires a different kind of management and business expertise than the operation of a fishing boat. Future microentrepreneurs need to be trained in planning, organizing, implementing and managing the various micro-enterprise activities. Among other things, they need to be able to strategize their operations, source out and utilize resources, execute strategies and direct actions. They also need to acquire related intra- and interpersonal skills.

While not every fisher and probably not even the majority of fishers are willing or able to become a microentrepreneur, many have the capacity and will to do so if given a chance and provided the necessary support. In the framework of fisherfolk organizations such as cooperatives, the entrepreneurship of individual fishers and women of fishing communities can create employment and income for many others, who do not have the will or capacity to

become entrepreneurs. In addition to micro-enterprises operated by cooperatives and other forms of associations, there is also scope for micro-enterprises operated by individuals or fisherfolk households and families. Likewise, these micro-enterprises also have the potential to generate income and employment for other members of coastal fisherfolk communities.

Another important benefit of micro-enterprises, particularly in the field of value addition and innovative marketing, lies in the fact that they ensure that the full economic benefit of the primary production taking place in coastal villages accrues to their inhabitants. Without micro-enterprises located in coastal villages, primary producers are forced to sell their raw materials to outsiders, who then realize the major part of the economic benefits through processing, packaging and marketing for themselves.

A noticeable and sustainable improvement of livelihoods and prosperity in coastal communities is certainly a strong incentive for their active participation in efforts to rehabilitate, conserve and manage fisheries and aquatic resources and the coastal environment within their jurisdiction. This again creates a conducive environment for aquatic based and other coastal micro-enterprises including those in the field of eco-tourism. It further shows that livelihood improvement and micro-enterprise development on the one hand, and coastal conservation and protection of natural resources on the other hand, fully depend on and benefit each other.

PART 2: REPORT OF THE NATIONAL WORKSHOP ON MICRO-ENTERPRISE DEVELOPMENT IN COASTAL COMMUNITIES IN THE PHILIPPINES: SHARING OF EXPERIENCES AND LESSONS LEARNED

1. Rationale and objectives of the workshop

Based on recent studies in major bays and gulfs, the catch per unit effort for most gears has declined. The scenario of having "too many fishers and too little fish to catch" is aggravated by environmental degradation brought about by human and natural causes and a population growth rate, which is one of the highest in the world at 2.3 percent annually. The present rate of resource extraction is unsustainable as evidenced by the declining catch, reduced fish sizes and changes in species composition.

The Philippine Government is addressing this problem by promoting programmes that protect endangered resources, build the capability of stakeholders to manage their nearshore waters and reduce the dependence of fishers on capture fishing as their only source of livelihood. In contrast to past efforts, these programmes recognize the stakeholders' indispensable role in coastal resource management, particularly in the planning, decision making and implementation processes.

Micro-enterprise development in coastal communities provides a considerable challenge because small-scale fishers are considered as "non-bankable" in many cases and hence, have difficulties to access credit assistance from national and rural financial institutions. Most fishers do not have properties that can serve as collateral or capital. Realizing this, the national government has launched assistance programmes to help fisherfolk groups engage in income-generating activities that are environmentally friendly. Local government units and many NGOs implement programmes to help fishers initiate non-fishing livelihood activities to rise above their present level of poverty.

Micro-enterprise development is recognized as an effective means to empower fishers and to help threatened coastal resources to recover. For livelihood projects to be successful, beneficiaries must be involved in the planning process, particularly in the identification of livelihood projects. They must be sufficiently prepared through training and values formation to be responsible implementers and managers of livelihood projects. It is also vital that livelihood projects are monitored to ensure that they are carried out within the framework of sustainable fisheries management.

The goal of the National Workshop on Micro-enterprise Development in Coastal Communities in the Philippines was to identify good practices in micro-enterprise development. The specific objectives of the workshop were to promote an exchange of experiences with the implementation of micro-enterprises in coastal communities; to bring together representatives of fisherfolk organizations, government agencies, non-governmental organizations, academic institutions and other concerned sectors to discuss issues and concerns on micro-enterprise development; and to identify financial and institutional support facilities and services to sustain enterprise development in coastal areas.

2. Participation and proceedings

The workshop was attended by 45 participants from people's organizations, fisherfolk cooperatives, non-governmental organizations, national government agencies and financing

institutions. The list of participants is shown in Annex I. The opening programme was attended by key officials of the Bureau of Fisheries and Aquatic Resources (BFAR) led by Director Malcolm Sarmiento Jr, Dr Susana Siar, FAO Fishery Industry Officer, and Project Director Jessica Muñoz. They delivered their messages on behalf of the organizers, the Food and Agriculture Organization of the United Nations (FAO), the BFAR and the Fisheries Resource Management Project (FRMP).

Following the opening programme, Dr Susana Siar discussed the FAO Fisheries Department's mission of facilitating and securing the long-term and sustainable development and utilization of the world's fisheries resources and aquaculture. She described the Code of Conduct for Responsible Fisheries, which is the FAO's principal document for regular and field programme activities, and the FAO's efforts related to micro-enterprise development and microfinance for fishing communities including the conduct of regional workshops and publication of technical papers and management guidelines. Mr V.K. Dey of INFOFISH delivered a lecture on the topic "Latest developments in small, medium-scale fisheries and aquaculture enterprises and products for regional and global export markets". He discussed constraints and opportunities with respect to penetrating fisheries export markets, various product forms and packaging techniques employed for shrimp and fish products in Asian countries as well as the latest statistics on production and trade in major exporting countries.

Resource speakers from two major financing institutions in the Philippines, i.e. Land Bank of the Philippines and the QUEDANCOR discussed their respective lending programmes for fisheries and agriculture, their experiences and success stories and the types of assistance that fisherfolk groups can access through formal lending channels.

Dr Carlos Baylon of the University of the Philippines in the Visayas shared his experience in implementing a project supported by the FAO for fishing families in southern Iloilo and Banate Bay in Iloilo Province. He discussed the project's efforts of developing micro-enterprises for fishers and their families through on-the-job training on fish processing, fish and mollusc culture and fish marketing. Through the project, many families living in Banate Bay and southern Iloilo were assisted to engage in fish vending, shrimp paste and fish sauce production, mussel and oyster culture and salt making.

Two NGO representatives from CARE Philippines and Fundacion Santiago, who were involved in managing community organizing projects in the Provinces of Leyte and Quezon, discussed the processes involved in forming community-based associations and cooperatives and guiding them to successfully implement land-based livelihood projects, i.e. fish processing and root crop production.

Representatives from 14 fisherfolk associations and cooperatives located in eight regions of the Philippines shared their experiences in implementing their micro-enterprise projects including the processes involved in project identification, problems encountered and how they were able to overcome these as well as important lessons learned. Of the 14 projects discussed, two were on fish processing (milkfish deboning and smoking, fish paste making), eight were on aquaculture i.e. mussel, mangrove crab, seaweed, milkfish and grouper culture while four were on a variety of land-based, non-fisheries enterprises including bakeries, ceramics production, sandal making and growing bananas. Some presenters brought along product samples, which were evaluated by Mr Dey and other participants. An open forum at the end of each session promoted an exchange of ideas among the participants. Important information shared among the participants and resource speakers during the open forum included methods to prevent excessive grazing by fish, the impact of the so called "ice-ice" disease on cultured seaweeds and methods on how to improve the quality and packaging of mussel chips.

A working group session was conducted in the afternoon of the second day of the workshop. The workshop participants including fisherfolk representatives, NGO members and government officials were divided into two working groups representing two geographical clusters. A template provided by the organizers was distributed to workshop participants. They were asked to focus on seven key elements in micro-enterprise development, i.e. (i) organizational capability to implement livelihood projects, (ii) identification of livelihood projects, (iii) preparation of feasibility studies and business plans, (iv) technical know-how and skills development, (v) financial management, (vi) marketing and (vii) project monitoring. For each element, participants were asked to discuss issues or problems encountered, explain what actions were taken to address these, identify positive factors, extract major lessons learned and formulate the groups' recommendations on the types of assistance needed to strengthen their livelihood projects. The working group outputs were presented during the plenary session by a representative of each working group. Other participants were encouraged to react to the information presented to enhance the group outputs. The key learnings based on the working group outputs are summarized below.

Organizational capability to implement livelihood projects: preparatory training activities on skills development and technical know-how, values formation, financial management, leadership and organizational management are vital to equip fishers with basic technical and management skills as well as the right mindset to properly operate their projects. Social preparation and strengthening of existing associations and organizations are critical to develop a strong sense of ownership and accountability among the stakeholders.

Identification of livelihood activity: project identification must be done in active consultation with members. It is useful to prepare a shortlist and make a thorough validation of each proposed project with assistance from community organizers and technical staff of the local government units.

Preparation of feasibility studies and business plans: once a project has been identified and sufficiently validated, a feasibility study or business plan must show how the project can be successful in terms of marketing, organizational, technical and financial aspects.

Technical skills: continuous training and upgrading of skills is important, which will require linking with appropriate government and private institutions. Also, the period between the training and actual implementation of the project should be kept short in order to sustain enthusiasm and interest of the livelihood project participants.

Financial management/bookkeeping: each organization implementing a livelihood project must have in place an efficient recording, accounting and auditing system. Checks and balances as well as transparency must be ensured especially in terms of fund use. Consultations with members must be carried out when major decisions need to be made.

Marketing of products: the marketing aspect, which is often neglected, must be given due importance during business plan preparation. Continuous improvement of product quality is also essential for making products competitive, especially when institutional buyers such as schools and hospitals are targeted. Linkage and networking with government and private agencies that can provide marketing support is very important for a project to expand its operations and be competitive. Market coverage can be expanded through value-addition and processing. Another alternative to ensure markets for products is to enter into contract growing arrangements with buyers similar to the grouper culture project and cassava farming of Regions 10 and 4A, respectively.

Project monitoring: depending on arrangements identified in the business plan, monitoring can be undertaken by people's organizations' members, local government units, which can

provide regular on-site technical support, and to some extent by BFAR Regional Offices. Project monitoring should also include reviewing record books and financial records.

On the third day of the workshop, a field trip to various projects was undertaken, namely the fishing port project of the Philippine Fisheries Development Authority in Toril, Davao City; a milkfish cage project in Barangay Tagabuli, Sta. Cruz; a seaweed farm in Barangay Punta Biao and a sandal making project in Barangay Aplaya, Digos City, which is owned by one of the participants. The workshop participants were also able to visit the Eden Resort, a popular eco-tourism destination, known for its diverse flora and large-scale organic farming operation.

At the end of the workshop, a synthesis was presented by Ms. Jessica Muñoz of BFAR-FRMP, one of the workshop sponsors. In her synthesis, she identified the highlights of the four-day activity, the key elements necessary for successful community-based micro-enterprises as well as workshop outputs and recommendations, which can be adopted by programmes focused on assisting coastal communities through livelihood and micro-enterprise development.

At the closing programme of the workshop, BFAR Assistant Director Reuben A. Ganaden gave a message of encouragement to the participants, urging them to use the information provided by the workshop for improving and expanding their operations and enterprises to make them competitive in local and international markets. Three fisherfolk participants were invited to share their impressions of the workshop. All expressed their appreciation to FAO, the BFAR-FRMP and the BFAR Regional Offices for organizing the workshop and giving them the rare opportunity to share and learn from the experiences of fellow stakeholders and technical experts on improving their micro-enterprises. They expressed hope that similar workshops will be organized in the future to strengthen linkages with relevant institutions, POs and cooperatives and to promote sharing of information and experiences.

3. Findings and conclusions of the workshop

The workshop presentations focused on the processes of micro-enterprise development, the linkages and partnerships necessary to ensure their success and the role of financial institutions in sustaining efforts towards the development of sustainable micro-enterprises in coastal communities.

The presentation from INFOFISH gave the participants ideas on potential livelihood projects that can be undertaken at the community-level and the status of regional markets for various fishery products. The presentation focused on the importance of quality control, attractive packaging and value-adding.

The livelihood and micro-enterprise projects presented by the different POs at the workshop range from marine-based activities such as cage culture, seaweed farming, mussel culture, mangrove crab culture in ponds; fish processing such as fish paste making, bottled sardines production, fish deboning and smoking, and mussel chips production; to land-based micro-enterprises such as bakeries, ceramics and pottery making, cassava farming, sandal making and banana production.

The working group sessions and discussions identified the lessons learned by the implementers of micro-enterprises and the crucial elements for the success of micro-enterprises as follows.

1) Organizational capability to implement livelihood and micro-enterprise projects:
   - training on skills development and technical know-how, values formation, financial management, leadership and organizational management;
   - social preparation with the assistance of community organizers;
   - strengthening of existing associations/cooperatives.
2) Identification of livelihood activities, micro-enterprises and products:
   - identification of potential livelihood activities through people's organizations such as cooperatives and associations in close consultation with their members;
   - validation of short-listed projects to ensure their viability.
3) Preparation of feasibility study/business plan:
   - basic components to be addressed are marketing, organizational, technical and financial aspects.
4) Technical know-how and skills:
   - continuous training and upgrading of skills are important;
   - the period between the training and actual application of knowledge and skills acquired from the training should be short.
5) Financial management and bookkeeping:
   - efficient recording, accounting and auditing systems should be in place;
   - proper checks and balances should be ensured;
   - transparency and consultations with members with regard to the use of funds are important.
6) Marketing of products:
   - thorough market study is needed before livelihood project implementation;
   - continuous improvement of product quality is essential to make products competitive;
   - establishing linkages and networking with institutional buyers, NGAs and private groups that can provide marketing support are critical;
   - markets for products can be expanded if value-adding or processing can be undertaken;
   - contract growing is a viable alternative to ensure markets as in the case of grouper culture in Region 10 and cassava growing in Region 4 A.
7) Project monitoring:
   - active involvement of PO members in monitoring their own projects is vital and includes monitoring of record books and financial records;
8) Institutional support from agencies such as LGUs, the BFAR, NGOs and the DTI:
   - coaching and technical support needs to be provided by concerned LGUs, the BFAR and others;
   - access of fisherfolk to credit from formal financial institutions is still very limited due to (i) strict standards as in the case of Land Bank; (ii) lack of awareness of PO members of the services being offered by other financial institutions such as QUEDANCOR and the National Livelihood Support Fund.

The workshop provided an opportunity for members of POs from 11 regions of the Philippines to interact, share experiences and good practices and to familiarize themselves with new technical information that can improve the implementation of their projects. A field visit to livelihood projects in Barangay Tagabuli (milkfish cages) and Digos City (sandal-making and seaweed culture) exposed the participants to the operations of fellow PO members and promoted an exchange of important technical information that can be applied to their own livelihood projects.

APPENDIX A

Workshop agenda

Date	Time	Activity
Day 1 March 7	08.30–09.00	Registration
	09.00–09.30	Welcome Remarks – Regional Director George G. Campeon Bureau of Fisheries and Aquatic Resources Region 11 Message - Dr Susana Siar FAO, Rome Director Malcolm I. Sarmiento, Jr. Bureau of Fisheries and Aquatic Resources
	09.30–09.40	Dr Susana Siar – *Micro-enterprise Development and Microfinance for Poverty Alleviation and the Sustainable Use of Fishery Resources* FAO, Rome
	09.40–09.50	*Introduction to workshop rationale and objectives* Ms Jessica Munoz, FRMP/BFAR
	09.50–10.00	*Introduction of workshop participants* Mr Raul Roldan, FRMP/BFAR
	10.00–10.20	Mr V. K. Dey – *Latest Development in Small-Medium Scale Fisheries and Aquaculture Enterprises and Products with Regional and Global Export Markets* Coordinator, Consultancy Services INFOFISH, Malaysia
	10.20–10.40	BREAK
	10.40–11.00	Mr Ryan Maglunsod District Supervisor QUEDANCOR, Davao City
	11.00–11.20	Dr Carlos Baylon – *Micro-enterprise Development in Southern Iloilo and Banate Bay, Iloilo* College of Fisheries and Ocean Sciences University of the Philippines in the Visayas Miagao, Iloilo
	11.20–11.40	Ms Aurea B. Bertulfo Development Manager Development Assistance Center Region 11 Land Bank of the Philippines, Davao City
	11.40–12.00	OPEN FORUM
	12.00–13.30	LUNCHBREAK
	13.30–13.55	Ms Luz Almazan – *The FRMP-Ragay Gulf Community Organizing and Livelihood Development Project* Fundacion Santiago

Date	Time	Activity
	13.55–14.15	Ms Leticia Dulay – *Milkfish Deboning Micro-enterprise: The Aringay Aquaculture Producers MPCI Experience* Samara Bayside Multi-purpose Cooperative Brgy. Samara, Aringay, La Union
	14.15–14.35	Mr Estelito Magboo – *Fish Paste Processing in San Roque, Sariaya, Quezon* Samahan ng Maliliit na Mangingisda ng San Roque San Roque, Sariaya, Quezon
	14.35–14.55	Mr Reynaldo Belangel – *Bakery Project of MAPPAI, Quezon, Quezon* Magsikap, Pag-asa, Paraiso Association, Inc. Villa Belen, Quezon, Quezon
	14.55–15.15	OPEN FORUM
	15.15–15.35	BREAK
	15.35–15.55	Mr Neri Cilot – *Pottery and Ceramics Development Project* Bolo Development Cooperative Brgy. Bolo, Tiwi, Albay
	15.55–16.15	Ms Virginia Hapa – *Green Mussel* (Perna viridis) *Culture in Casiguran, Sorsogon* Brgy. Estorum, Casiguran, Sorsogon
	16.15–16.30	Mr Herminio Penalba – *Seaweed Farming Experience of MFFWMPC in Batan, Aklan* Mamboquiao, Batan, Aklan
	16.30–16.45	Mr Gani Acas – *Seacage Culture of Milkfish for Bantay Dagat* Local Government Unit Kolambugan, Lanao del Norte
	16.45–17.15	OPEN FORUM
Day 2 March 8	08.30–08.50	Mr Mamerto Buenaventura, Jr. – *Bottled Sardines: A Promising Enterprise in Sogod Bay* Economic Development Foundation Malitbog, Southern Leyte
	08.50–09.10	Mr Moises Casillac – *Sandal Making Project of Abuno Aplaya Fisherfolk Association, Inc.* Abuno Aplaya Fisherfolk Assocation, Inc. Digos, Davao del Sur
	09.10–09.30	Mr Ranilo Naran – *Fish Cage Culture Project of Punta Biao Fisherfolk Association, Inc.* Sinawilan Fishermen's Cooperative Digos, Davao del Sur
	09.30–09.50	Ms Marlita Englis – *Seaweed Culture Project of Punta Biao Fisherfolk Association, Inc.* Punta Biao Fisherfolk Association Digos, Davao del Sur
	09.50–10.10	BREAK
	10.10–10.30	Ms Enecita Quiapo Anonang Multi-Purpose Cooperative Anonang, Aurora, Zamboanga del Sur
	10.30–10.50	Ms Camila Alforo Gubaan Farmers and Fishermen's Multi-Purpose Coop. Gubaan, Aurora, Zamboanga del Sur

Date	Time	Activity
	10.50 – 11.10	Mr Policarpo Alipio Consuelo Fisherfolk Multi-Purpose Cooperative Consuelo, Magsaysay, Misamis Oriental
	11.10 – 11.30	Mr Aguido Ras Maloro Fisherfolk Multi-Purpose Cooperative Maloro, Tangub City
	11.30 – 12.00	OPEN FORUM
	12.00 – 13.30	LUNCHBREAK
	13.30 – 15.00	Workshop – 2 groups
	15.00 – 16.00	Presentation of Workshop Output
	16.00 – 17.00	OPEN FORUM
	17.00 – 17.30	Briefing on the next day's field trip
Day 3 March 9	7.00 – 17.00	Field Trip
Day 4 March 10	8.00 – 10.30	Highlights/Conclusions of the Workshop Ms Jessica Muñoz, FRMP/BFAR Closing Program and Distribution of Certificates of Participation

APPENDIX B

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PART 3: WORKSHOP PAPERS AND CASE STUDIES

1. LATEST DEVELOPMENTS IN SMALL AND MEDIUM-SCALE FISHERIES AND AQUACULTURE ENTERPRISES AND PRODUCTS FOR REGIONAL AND GLOBAL EXPORT MARKETS

by V.K. Dey, Coordinator, INFOFISH Consultancy Services

Globally, small and medium-scale fisheries contribute more than half of the fish harvested for human consumption. In many developing countries, where fish and fishery products form an important source of daily protein intake, small and medium- scale fisheries contribute considerably to food security and earn foreign exchange for the country. They also play an important role in the economy of many developing countries by providing employment opportunities.

Small and medium-scale fisheries comprise marine and inland capture fisheries as well as coastal, marine and inland aquaculture. The main species of fish supplied by this sector are pelagic fishes such as sardines, mackerels, anchovies, tuna and king fish from marine capture fisheries and fishes and aquatic organisms such as carp, tilapia, catfish, freshwater prawn, ornamental fish and other fishes from inland culture and capture fisheries. Marine and coastal aquaculture supply shrimps, crabs, mussels, cockles, sea bass, groupers and snappers while carp, tilapia, catfish and ornamental fishes are produced by inland culture fisheries. Sizable quantities of bycatch from marine and inland capture fisheries are also contributed by the small and medium-scale fisheries sector.

In many developing countries, cultured fish such as catfish, tilapia, seabass, grouper, freshwater prawn, black tiger and white shrimp and a host of pelagic fishes constitute a major share of the products for export marketing, the majority of which are contributed by the small and medium-scale sector. Markets for most freshwater fishes from capture and culture sources are confined to markets within the producing country.

Rapid development of the seafood processing industry in general has led to an expansion of the product range in small and medium-scale fisheries. Regarding products, these sectors display a wide variety of products ranging from live, fresh, chilled, and frozen to dried products, which are being marketed in the domestic, regional and international markets. Products from small and medium-scale processing facilities that are marketed internationally have been increasingly subjected to quality management programmes of the importing countries.

1.1 Opportunities for the development of new products

Consumer preferences are changing to easy-to-prepare and convenient fish and fishery products. In this new market environment, seafood processors are increasingly focusing on value-added products. With more than 50 products marketed globally, shrimp shows the widest range and highest degree of value-addition today. For example, selling whole shrimp is a simple method of value addition. Instead of losing over 40 percent of the body weight by beheading, large size shrimps can be sold in head-on/shell-on (HOSO) form by attractively arranging the shrimps in so called window packs, which have a ready market in West Europe.

Major species of fish that have economic importance produced by the small and medium-scale capture sector in significant volume are skipjack tuna, yellowfin tuna, sharks, rays, croakers, king fish, ribbon fish, sea bass, pomfret as well as fishes caught with boat seines such as sardines, mackerels and anchovies. Of the finfish species, skipjack and yellowfin tuna

hold good potential for value addition. The present range of skipjack products can be further expanded to include improved smoked and dried speciality products such as *katsuobushi* and *arabushi* for the Japanese market and smoked and dried fish flakes and fish extractives. Some of these products are already being produced in the Maldives and Sri Lanka for both, the domestic and export markets. However, the introduction of improved production and packaging techniques and presentation will enable this sector to improve its earnings from skipjack landings further.

Yellowfin tuna, too, holds good potential for product and market diversification. With relatively low capital inputs, the small and medium-scale sector can embark on tuna loining for export and also introduce fresh and frozen steaks and cuts for the domestic market. If proper on-board handling is employed, gilled and gutted yellowfin tuna can also be diverted to export markets as fresh or frozen sashimi tuna. By switching over to longlining, this sector can efficiently improve the quality of tuna caught. This can be achieved with relatively low investment by using smaller boats. Longlining with the use of small boats is expanding in Asia as a result of the spiralling cost of fuel. Good quality tuna landed by these boats meet with great demand from processors for export.

Pelagic fishes like sardines, mackerels and anchovies are caught by traditional fishermen using traditional gears. The utilization of these fishes can be diversified into different products, which have a ready market both, domestically and for export. Dressed and marinated mackerels and sardines have a potential market in Middle East countries, while boiled mackerel has a ready market in Singapore, Brunei and Malaysia. If anchovy can be better handled on board vessels, it can be processed into boiled and dried anchovy, which has a ready market in Japan and South Korea.

Tilapia is produced from both, capture and culture fisheries in inland areas. Tilapia is one of the most sought after fish both, in the international and domestic markets, especially in Southeast Asia. Since the 1997/98 economic recession, demand for tilapia products has picked up in most Southeast Asian countries. Currently tilapia is being marketed in live and fresh/chilled form in these markets. There is an opportunity to market fresh/chilled and gutted whole tilapia with improved packing like tray packs in these markets through super- and hypermarkets as the price difference between wet markets and super- and hypermarkets is over 20 percent. Chilled and frozen tilapia fillets also hold good market potential both, in domestic and export markets. With a small capital investment, chilled whole round tilapia and fillets can be produced in the small and medium-scale fisheries sector for export.

Traditionally, dried fish processing is a widespread activity in Asia in the small and medium-scale sector. Depending on seasonal availability, a large number of species are used for the production of dried fish. Among these, the most commonly used ones are anchovy, sardine, mackerel, ribbon fish, lizard fish, shark, threadfin bream and snapper. Most of the fishes are either sun or kiln dried with a moisture content of less than 30 to 40 percent. The polyethylene bag packed products are marketed through retail stores, open markets or night markets in urban and suburban areas. Improved product processing, packing and presentation are the opportunities available for this sector.

Minced fish products such as surimi, fish balls and fish cakes are favourite snacks in the region. Fish balls are one of the ingredients used in soup preparations or as a dish of its own. The ingredients of fish balls and fish cakes are fish mince, tapioca/corn starch, salt, baking powder and various seasonings. In Malaysia, there are over 28 fish ball/fishcake/surimi processing facilities while in Thailand there are 95, the majority of them small and medium-scale, barring one or two commercial establishments with sophisticated machinery. The products are marketed chilled and are sold in wet markets and super- and hypermarkets. There is also a good opportunity for export of these products to regional markets.

There are many varieties of traditional fish products in the region. Traditionally, fish sauce production has been undertaken in small-scale operations. By virtue of the prevailing food habits in Asia and the Pacific region, fish sauce is an indispensable part of meal preparation. The basic process involves fermentation of pelagic fish species such as anchovies, sardines and mackerels in salt. Sauce made from anchovies generally demands a better price than sauce made from other fishes. Fresh water finfish varieties such as eel, catfish, snake head and barbs are currently being used for the preparation of a number of traditional products. With low capital inputs, the small and medium-scale sector can embark on traditional products for export to regional and ethnic markets.

Among the traditional products, fish and shrimp crackers are one of the most popular snack foods in Southeast Asia. Most of the fish and shrimp crackers are produced from low value fish or small shrimp. The production of fish and shrimp crackers is also undertaken by the small-scale sector. Species like Japanese threadfin bream, big eye, goat fish and others are commonly used. The main ingredients are fish and shrimp mince, tapioca flour, salt and spices. There are good opportunities to make fish and shrimp crackers with improved technologies and innovative packing and presentation as there is a great demand for these products in domestic and export markets.

While there are many opportunities to develop new products from small and medium-scale fisheries, there are also constraints like declining profit margins, fluctuations in raw material supply and lack of storage facilities. New opportunities exist though and many innovative products can be developed from fish landed by small and medium-scale fisheries.

1.2 Improved utilization of bycatch and waste

Most of the marine and fresh water species from the small and medium-scale fisheries sector are traditionally consumed in fresh form in most of the Asian countries including the bycatch species. These species have been in use for centuries to prepare a wide range of traditional fish products such as salted and dried fish, fish sauce, fish paste and similar products. The introduction of modern technology has significantly increased the quality and widened the range of products available at present. This resulted not only in the rapid commercialization of the traditional processing sector but also the introduction of new products based on bycatch species such as surimi based fish jelly products.

At present, only a small amount of bycatch is discarded by the small and medium-scale fisheries sector. Considering the present utilization pattern, in order to promote a sustainable use of resources, it is important to preserve the quality of fish and bycatch onboard fishing vessels to facilitate improved utilization. In small and medium-scale fishing craft, it may not always be possible to achieve improved handling on board due to various limitations such as lack of storage space for ice and bycatch, labour and other factors. In many of the Southeast Asian countries, attempts have been made to convince fishers to use ice for bycatch and trash fish and thereby assure them of a better price.

Much progress has been made in the utilization and marketing of fish and shrimp waste in the region. Shrimp heads and shells are the raw material for the production of chitin and chitosan. Water from cooking shrimp in processing operations is used in the commercial production of extractives and flavouring agents. Extraction of astaxanthine and other pigments and feed additives has become an integral part of the shrimp industry in most Asian countries today. Tuna viscera can be used for the production of a variety of flavouring or seasoning agents and food additives such as skipjack extract, tuna viscera powder and the Japanese style seasoned fish product, *shiokara.* Government-industry cooperation in facilitating such activities by way of technology transfer, market promotion as well as streamlining the collection of waste from processing centres would be helpful for promoting waste utilization further.

Product and market diversification is another important aspect to be addressed in improving the better utilization of bycatch. The products presently being marketed can be further improved to extend their shelf-life, safety, quality and marketability. Modern methods of packaging, transportation and storage can also be used to market some species of bycatch in dressed form, in consumer packs and in ready-to-prepare form. Over the last decade, the number of small and medium-scale bycatch processing operations has declined due to competition from large-scale operators with capital and advanced technological know-how. Broadening the base of the industry through transfer of technology, training and improving entrepreneurship can be considered as an important step in improving bycatch utilization and its marketability.

Assurance of product quality and safety is a vital step in marketing. Considering the diffused nature of raw material supply in the bycatch processing sector and the traditional nature of the production technologies involved, it is important to adopt HACCP based production methods to ensure that products gain consumer confidence. Traditional approaches to improving bycatch utilization need to be reassessed in the light of new developments in the global market.

In the past, most traditional products, which are the key bycatch based products of today, are processed in cottage-scale operations with little mechanization. Present day product processing and marketing needs to address special criteria not only with respect to quality and safety of products but also regarding aspects such as packaging, labelling including eco-labelling, presentation, resource sustainability and other aspects. In this context, it is important for producers to have a good knowledge of market requirements and consumer expectations as well as ready access to market and price information. In such a scenario, one has to keep in mind the high human and material cost of product processing and marketing by way of trained manpower, market and product information, upgraded processing facilities, quality control and monitoring.

1.3 Safety aspects

Importing countries are becoming increasingly concerned with health and food safety issues. They have intensified food safety standards to ensure the confidence of consumers. Quality indices reflecting filth, decomposition, microbial aspects, pesticide and antibiotic residues, histamine and others are regularly being monitored in all importing countries. Consumers are now demanding more information on the products they buy including seafood. Hence, the importance of traceability, the ability to trace a product back to its origin to determine what has occurred to it during its production process assumes much significance today. Within the seafood industry including aquaculture, the traceability concept is becoming a vital element of quality control in order to enhance food safety.

1.4 Initiatives of INFOFISH

With the objective of improving the marketing efficiency of small and medium-scale fishery enterprises, INFOFISH, in association with the FAO and the Common Fund for Commodities (CFC), has initiated programmes for diversification of products and markets in the Asia and the Pacific region. This has opened up new opportunities for member countries. The advantages are better price realization, simple processing techniques and attractive packaging. Under this programme, value added shrimp and tuna products have been developed and production techniques have been disseminated among the member countries of INFOFISH.

1.5 Conclusions

The small and medium-scale fisheries sector contributes a sizeable quantity of animal protein and plays an important role in the economy of developing countries. There are growing

opportunities for small and medium- scale fisheries to diversify markets and products due to increased demand for fish and fishery products. Though the landings from the small and medium-scale sector are scattered and in small volumes, through proper coordinated efforts much of the fish landed can be marketed in appropriate value-added form. Apart from this, a sizeable quantity of bycatch landed can be utilized in a more meaningful way by processing it into improved traditional value-added products using appropriate techniques. Improved utilization and marketing opportunities pave the way for the small and medium-scale fisheries sector for domestic and export marketing ventures. To achieve this, it is necessary to strengthen infrastructure facilities, provide technical and financial support, introduce appropriate technological interventions and provide training to fishers and producers.

2. THE FISHERIES RESOURCE MANAGEMENT PROJECT (FRMP) RAGAY GULF COMMUNITY ORGANIZING AND LIVELIHOOD DEVELOPMENT PROJECT

by Luz Almazan, Fundación Santiago Inc.

2.1 Introduction

The Fisheries Resource Management Project (FRMP) addresses the two critical and interconnected issues of fisheries resource depletion and persistent poverty among municipal fisherfolk. The FRMP has three major components, i.e. fisheries resource management, income diversification and capacity building. The component of income diversification focuses on organization, mobilization and strengthening of fisherfolk and coastal community groups that are savings-based and self-reliant, capable of carrying out coastal resource management (CRM) activities and income diversification on a long-term basis.

More specifically under the community organizing and livelihood development sub-component of the income diversification component, the component seeks to deepen commitment of stakeholders to resource management and protection while promoting their economic interest through its focus on complementary enterprise development.

Ragay Gulf in the Province of Quezon has 36 coastal barangays in three municipalities. It was previously covered under the Fishery Sector Programme and later on by the FRMP under the Bureau of Fisheries and Aquatic Resources (BFAR). The Fundacion Santiago Inc. (FSI), an NGO, was selected to implement the FRMP project in Ragay Gulf for a period of two years from January 2004 to January 2006.

To be able to deliver the outcomes expected of the FRMP, the FSI's implementation of the project had three key components, i.e. livelihood project development through the promotion of micro-enterprises, CRM implementation and monitoring and cooperative organizational strengthening. These components were designed to take off from the FRMP income diversification sub-components of community organizing, micro-enterprise development, mariculture and other enterprise development activities and from the FRMP fisheries resource management's sub-components of coastal resources management, fisheries legislation and regulations and community-based law enforcement.

2.2 Livelihood project development through promotion of micro-enterprises

During the term of the project, the organizations that were strengthened and established, i.e. the already existing peoples' organizations (POs), newly organized savings groups (SGs) and cooperatives helped to initiate micro-enterprise activities and to engage in other non-fishing related activities. They also helped to create an equity base that could be utilized for the

provision of microfinance services for those, who generated their own savings. Furthermore, the improved capability of the newly organized cooperatives enabled them to function as financial conduits for external credit sources and to provide additional capital for the various micro-enterprise projects of their members. The micro-enterprise projects would not have been possible without the organizations being in place.

The various training activities conducted for the strengthening of cooperatives as financial intermediaries enabled the cooperatives to define their microfinance services, operational systems and policies and to design credit products and savings services. Organizational management and leadership systems and processes were established through the conduct of regular meetings and monitoring sessions of savings groups, cooperative committees, the cooperative management committee (COMAT) and the boards of directors.

The enterprise related training activities were conducted in partnership with agencies and research and academic institutions with technical know-how of the livelihood and micro-enterprise projects to be implemented. A variety of technical livelihood skills training activities were conducted such as cassava production and processing, aquaculture, marine livelihood projects, mangrove crab culture, coffee production, corn production, meat processing, virgin coconut oil production, peanut butter making, peanut-based food products and bangus-in-oil production. The training provided the members of the cooperatives with entrepreneurial options to be pursued. Training was also provided to enhance the knowledge and skills of members of cooperatives related to the livelihood projects that had been identified and pursued during the previous project term.

Market development plans for the identified projects were prepared and initial contacts with prospective market conduits in municipal and provincial centres and with institutional buyers such as the San Miguel Corporation were established. An overview of micro-enterprises initiated through the cooperatives in the third year of the project is presented in Table 1.

It was because of these micro-enterprises that the FRMP project intervention was able to generate jobs and additional income for the project beneficiaries. Job generation was not limited to the implementers of the micro-enterprise projects but also included other jobs for other members of the coastal communities that were generated as a result of the implementation of the micro-enterprise.

2.3 Organizational strengthening of cooperatives

The FRMP implementers and the FSI agreed that community organizing was at the core of the FRMP and instrumental in forming basic community structures for resource management and development. Regarding the savings groups, the focus of the intervention during the third year of the project was on the organizational strengthening of the POs and cooperatives organized during the previous project term.

Table 1: Micro-enterprises organized through cooperatives by the FRMP-Ragay Gulf Community Organizing and Livelihood Development Project

Name of cooperative	*Type of livelihood/ enterprise development project*	*No. of beneficiaries*
Guinayangan Metrowide Savings and Credit Cooperative (GMSCC)	Cassava/corn production	19
	Peanut production	7
	Coffee production	6
	Grouper culture in cages	11
	Cassava demonstration farm	5
	Swine dispersal	5
Guinayangan Fisherfolk and Farmers Savings and Credit Cooperative (GFFSCC)	Cassava/corn production	5
	Peanut production	10
	Cassava/corn/peanut trading	101
	Swine dispersal	5
Tagkawayan Savings Group and Credit Cooperative (TSGCC)	Cassava/corn production	29
	Peanut production	14
	Coffee production	32
	Marine cage culture of grouper	28
	Polyculture of mangrove crab and grouper	10
	Cassava/corn/peanut trading	126
	Live Lapulapu and crab trading	8
	Rice demonstration farm	2
	Goat raising	8
	Ubi demonstration farm	5
	Crab fattening	10
Buklod ng Buhay Savings and Credit Cooperative (BBSCC)	Cassava/corn production	20
	Cassava/corn/peanut demonstration farm	20
	Cassava/corn/palay trading	94
	Soya demonstration farm	8
	Ubi demonstration farm	10
Buenavista Rural and Savings Credit Cooperative (BRSCC)	Cassava/corn production	24
	Poultry production	3
	Cassava/corn demonstration farm	152
Total		777

In terms of organizational maturity, there was still a need to increase the efficiency of the community organizations to manage coastal resources, initiate micro-enterprise activities and their readiness to engage in activities other than fishing. The FSI continued to adopt as a strategy the so called Rapid Savings Mobilization Technique-Informal Group Consolidation Technique-Cooperative Formation (RSMT-IGCT-CF) combined, which was the strategy adopted by the FSI during the previous project term as an approach for the expansion of previously organized cooperatives. The FSI organizing, be it strengthening existing POs, savings groups or cooperatives, embraced the savings-based microfinance organizational development framework. Microfinance is one of several essential tools in combating poverty especially in rural communities. While it is not a panacea, promoting access to sustainable financial services leads to increased productivity, income and food security of the poor. It is the belief of the FSI that the poor need microsavings and deposit facilities for the safekeeping of savings and the accumulation of resources, for balancing consumption, preparing for emergencies and for self-financing of investments. The poor also need microcredit and access to loans of various sizes and maturities for financing of investments, enterprises and livelihood projects, balancing consumption and for emergencies.

Cooperatives were organized and strengthened to act primarily as financial intermediaries in their respective areas providing both savings and credit services to their members. Several capability building sessions were conducted and aimed at strengthening cooperatives. Regular meetings were conducted for the various organizational units of cooperatives including their boards of directors, committees and the COMAT. The meetings also served as mentoring sessions as the policies, systems and procedures (PSPs) were continuously refined and proposals to address emerging problems were discussed and agreed upon. The cooperatives accessed funds from the FSI and other external institutions and continuously provided financial services to their members.

All cooperatives operate enterprises and offer services, which include credit and trading services. They have likewise established linkages and working relations with both LGUs and external institutions to enhance their capacities. Comparative indicators for the organizational status of the cooperatives at the end of the second and third year of their operation are shown in Table 2.

Table 2 shows that the membership of the cooperatives increased by 23 percent between the second and the third year of project implementation. Over the same period, the combined asset base, which includes share capital contributions and externally sourced funds for the enterprise and service projects of the cooperatives increased from PHP161 550 at the end of the second year to PHP2 712 291 at the end of the third year. It needs to be taken into consideration, however, that the substantial increase in the asset base at the end of the third year includes externally sourced funds utilized by the cooperatives to finance their enterprise and credit operations. At the end of the second year of operation, assets consisted of membership equity contributions only. Membership equity contribution at the end of the third year was PHP318 211, which amounts to an annual increase of 97 percent as compared to the second year.

Table 2: Organizational status of cooperatives

Cooperative	*Status at end of second year*			*Status at end of third year*			
	Members	*Assets (in PHP)*	*OMI[1] rating*	*Members*	*Equity*	*Total assets (in PHP)*	*OMI rating*
GMSCC	130	18 050	S1	122	95 226	619 684	pre-S3
GFFSCC	101	25 700	pre-S2	113	35 289	346 705	S2
TSGCC	150	82 500	pre-S2	240	111 554	657 744	pre-S3
BBSCC	94	22 000	S1	105	42 497	422 380	S2
BRSCC	132	13 300	pre-S2	165	33 645	665 778	pre-S3
Total	607	161 550		745	318 211	2 712 291	

The substantial increase in the financial services extended by the cooperatives using internally generated contributions and externally sourced credit funds attest to the significance of the cooperatives' function as financial intermediaries, to establish financial discipline and to enhance local capacity to manage pooled resources. The cooperatives have extended credit services based on policies drafted by them, helped members to meet emergency related expenditures and financed small livelihood ventures for generation of additional income.

A campaign for continuous capital build-up from member contributions was pursued to ensure the stability of the cooperatives and to establish strong membership support and sense of ownership for their programmes. These benefits can be viewed as an evolution of cooperatives and people's organizations towards self-reliance and into organizations that are capable of engaging in other ventures.

Numerous capability building sessions such as training programmes on cooperative finance, delinquency management, bookkeeping and accounting were conducted for the officers of the cooperatives. These training sessions contributed to the strengthening of their capacity to implement livelihood enterprises and microfinance programmes.

2.4 Lessons learned and measures of sustainability

During the implementation of the project, a number of factors were identified that contributed to the sustainability and success of livelihood projects and micro-enterprises.

Financial viability: micro-enterprises and livelihood projects have to be self-financing and financially viable to provide long-term and sustainable livelihood options for their implementers.

Partnerships and linkages: government agencies, academic institutions and private entities provided crucial technical backstopping and other resources and services for the project. During the third year of the project, such partnerships were developed exclusively by the FSI

[1] OMI: Organizational Maturity Index refers to a specific organizational maturity stage within the 4-stage FRMP organizing framework as follows:

- Stage 1 (S1): consciousness raising and group formation;
- Stage 2 (S2): organizational development;
- Stage 3 (S3): institution building/development;
- Stage 4 (S4): Organizational re-engineering.

In table 2, interim stages are included. Pre-S2 and pre-S3 refer to organizations with both stage 1 and stage 2 indicators and both stage 2 and stage 3 indicators, respectively.

without the assistance of the project beneficiaries. Examples are the partnerships that were developed with the Cooperative Development Authority (CDA) of the Philippines for cooperative organizational development, with the University of the Philippines at Los Baños – Institute of Plant Breeding (UPLB-IPB) for enterprise technologies and skills, with the National Brackishwater Aquaculture Technology Research Center of the Bureau of Fisheries and Aquatic Resources (BFAR-NBATRC) for enterprise technologies and skills, with the Department of Trade and Industry (DTI) for enterprise technologies and skills, with local government units (LGUs) for overall project support and technical assistance and with San Miguel Corporation (SMC) for technical resources for cassava production and assurance of a market for the produce.

Partnerships and linkages with external markets for products from local communities encouraged individual members of savings groups to cultivate cassava as an additional source of income. Assistance was provided by LGUs to identify potential areas that may be cultivated and to work out partnership arrangements to enable those without access to land resources to identify potential areas for farming. Technical assistance extended through the UPLB-IPB enabled the members of cooperatives to set up demonstration farms, which allowed them to compare the efficiency of various farm technologies and practices. Another key partnership was established towards the end of the project term with the United Coconut Planters Bank (UCPB) to enable the cooperatives to establish direct relations with a financial institution for their credit requirements.

Continuous funds generation and capital build-up: to expedite the expansion of savings groups, POs and cooperatives, internal funds have to be continuously generated via savings mobilization schemes such as the rapid savings mobilization technique (RSMT).

3. MILKFISH DEBONING MICRO-ENTERPRISE: THE ARINGAY AQUACULTURE PRODUCERS' MULTI-PURPOSE COOPERATIVE'S EXPERIENCE

by Leticia Dulay, Dulao, Aringay, La Union

3.1 Introduction

The members of the Aringay Aquaculture Producers' Multi-purpose Cooperative Inc. (AAPMPCI) in Dulao, Aringay, La Union are primarily producers of milkfish in fish pens. Although they have no serious problems with the marketing of their produce, the fluctuating price of milkfish affects their operations. There are also times when there is a production surplus, which forces them to sell their fish at a lower price.

Already involved in the production of milkfish in fish pens, the members of the AAPMPCI thought of expanding this business by enhancing their produce by adding value to it through deboning. They thought this would expand their market as well as minimize losses from their operations when prices decrease. When the idea was first presented, most of the members of the AAPMPCI became interested and expressed support for the project, especially the wives and children of the members of the cooperative, who wanted to help their families economically. Non-members of the community like out-of-school youths were also interested seeing the project as a prospect for employment.

The organization of fisherfolk into self-help groups and the strengthening of established fisherfolk associations have been the thrusts of the Bureau of Fisheries and Aquatic Resources through its Fisheries Resource Management Project (BFAR-FRMP). The purpose was to ensure that fisherfolk associations are organized and socially prepared for organizational and

other activities, where group efforts are recognized and rewarded. During the community organizing activities conducted by the Jaime V. Ongpin Foundation Inc. (JVOFI), which was contracted by the BFAR-FRMP, the AAMPCI was invited to attend and from then on they became recipient of assistance.

The AAPMPCI also sought technical assistance from the local government unit (LGU) of Aringay through its municipal agriculture office (MAO) personnel in the realization of their fish processing business venture. It was advised to formulate a business development plan and to describe all social, technical, financial and technical considerations of the project. Seeing the enthusiasm and expressed interest of the group, the LGU-MAO extended all assistance needed including the provision of counterpart funds for the establishment of the project.

3.2 Beginnings of a business

The BFAR-FRMP through the JVOFI provided organizational strengthening for the AAPMPCI to fully prepare the members of the organization for this project while they were working on their business development plan. It was considered important that they formed a cohesive and strong organization before they set out to manage a micro-enterprise like fish deboning. Team building workshops, leadership training and other activities were conducted. After organizational strengthening, they were trained on livelihood management and financial management including bookkeeping and accounting. Through these activities, the members of the AAPMPCI learned how to screen and select new members and the importance of cooperation in any endeavour. The members realized that engaging in a business as an organization is better than starting enterprises as individuals.

The AAPMPCI worked closely with the LGU-MAO and the BFAR in the assessment of the feasibility of establishing a fish processing project. Social, economic, technical and marketing aspects of the proposed business were assessed and incorporated into the business development plan, which was submitted to the BFAR-FRMP for funding support. Some members of the AAPMPCI already possessed basic skills of milkfish deboning as they previously attended training sessions conducted by the Agricultural Training Institute, the Technical Skills Development Authority (TESDA) and the BFAR. Other members, who had not undergone training yet, were identified and listed.

All necessary enterprise inputs like investment and working capital costs, materials and equipments were provided in consultation with the LGU and BFAR. Financial flows were projected and carefully studied to ensure good recovery of capital and return on investments. The responsibilities of each member to be involved in the project were carefully laid out, particularly with regard to project operations, fund management, marketing and production.

After the business development plan of the cooperative had been approved, a supporting capability building and training proposal was prepared. In June 2004, hands-on training on milkfish deboning was provided for members of the AAPMPCI by the BFAR-FRMP as well as all equipment and materials needed for one cycle of the project. To ensure that the project was managed properly and effectively, the AAPMPCI signed a tripartite memorandum of agreement (MOA) with the BFAR-FRMP, the JVOFI and the LGU of Aringay, La Union. The MOA carefully laid out the roles and functions of each party and its legal responsibility. On signing of the MOA, the milkfish deboning enterprise started and has been operational since then for almost two years.

Most of the members of the AAPMCI belong to the poor families of Aringay. At present, the cooperative is comprised of fishermen and their wives, fish vendors and some out-of-school youths. Of the thirty-nine members, thirty are men and nine are women.

The members of the cooperative have continued to enhance their organization and to upgrade their skills and proven themselves capable of managing their project. The municipal cooperative development council recognized their efforts and activities as a budding cooperative in their community and municipality. They were awarded a certificate of recognition from the council in appreciation of their excellent participation and cooperativism in the municipality.

3.3 Challenges along the way

Like in any other business, problems surfaced along the way, conflicts arose among members and constraints were encountered. The AAPMPCI encountered early on, the following problems while starting its fish deboning micro-enterprise:

The members of the organization realized that other organizations were already engaged in the same business and there was a need for their product to be more desirable and qualitatively superior compared with the products of their competitors. The competition with other producers of deboned milkfish products resulted in a surplus of finished products, which could not be sold before the next production cycle. The cooperative found it difficult to penetrate their primary target markets due to competition from other groups marketing the same product. The AAPMPCI perceived that there was a lack of support from the government for enhancing product quality in order to be more competitive.

To enhance the product's desirability and quality, technical assistance was sought from the BFAR. The BFAR assisted through training on good manufacturing practices with standard sanitation and operating procedures (GMP-SSOP). The BFAR also assisted in establishing linkages with marketing institutions by providing information on where the cooperative could sell their finished products for a more competitive price. The members of the cooperative eventually realized that there was no shortage or lack of markets but that they needed to improve the quality of their products, to network with other groups and also to advertise their products. The cooperative established links with lending institutions like the QUEDANCOR to avail of funds needed for product improvement.

3.4 Building partnerships

For technical and marketing assistance, the AAPMPCI regularly coordinated with the LGU-MAO, the BFAR-FRMP and the JVOFI. These three agencies worked closely with the members of the cooperative, guiding and assisting them to address the specific needs of their project. They were also encouraged to display their products at various local exhibits and participated in a fair sponsored by the WorldFish Center held at Aringay town plaza in Aringay, La Union, during the town fiesta.

Since capital is very important for sustaining a livelihood project, the AAPMPCI proposed that banks like the Land Bank of the Philippines (LBP) and the Development Bank of the Philippines (DBP) should extend interest free loans for the procurement of post-harvest facilities and equipment to be able to modernize its operations including the packaging of products. The cooperative further suggested that government agencies like the Department of Trade and Industry (DTI) should extend support and technical assistance for the marketing of processed products of newly formed and budding cooperatives like the AAPMPCI. Similarly, local government units, other government agencies and large corporations should assist in the promotion and introduction of product lines to local markets, trade fairs and export markets.

3.5 Project impact

For most of the families and members of the AAPMPCI the project meant an additional source of income. For those actually involved in the operations it was an opportunity to show

their worth as partners and individuals. It improved their morale and confidence. The out-of-school youths, unemployed children and other family members gained an opportunity for employment and found a more productive way to spend their time. For both, members and non-members of the cooperative, it was an opportunity to upgrade and enhance their skills and learn to use new technologies.

The achievements of the cooperative will eventually bring recognition to its members as well as to the community and create more job and learning opportunities. Expansion of production may happen in future with increases in capital build-up and better strategies of marketing.

3.6 Crucial steps and lessons learned

Venturing into a business or micro-enterprise activity as an organization requires group efforts, cooperation and participation. The support of government institutions and other agencies is crucial for start-up activities as well as to improve and sustain the enterprise. It is further imperative that all members of a cooperative are consulted when deciding on details of any project. Repeated consultations ensure that everything is properly communicated, recorded and that everyone is fully informed. Roles, functions and responsibilities of all persons and cooperative members involved and to be involved should be defined clearly. This is necessary to avoid conflicts and ensure a smooth flow of information. Everything from start to finish should be group effort and group achievement.

Close collaboration with various agencies that may be of assistance to a project is to be encouraged. This is also important for networking, establishing linkages, marketing and improving products and services. Continuous upgrading of skills and learning of new technologies and techniques and systems for more efficient project management and ensuring quality products and services are also important. After two years of operation, the AAPMPCI learned that good quality raw materials produce good quality processed products. Processed products that are of good quality promote the good name of a micro-enterprise to its customers.

4. FISH PASTE PROCESSING IN SAN ROQUE, SARIAYA, QUEZON

by Estelito Magboo, Samahan ng Maliliit na Mangingisda ng San Roque, San Roque, Sariaya, Quezon

4.1 Introduction

The project on fish paste processing locally referred to as *bagoong* was identified as part of the organizational development undertaking by Ugnayang Tulong, the NGO contracted by the BFAR Regional Office 4A under the Fisheries Resource Management Project (FRMP).

The idea of implementing a project on fish paste processing was a result of a series of consultations with members of the people's organization (PO) *Samahan ng Maliliit na Mangingisda ng San Roque (SMMSR)* conducted by the NGO with assistance of staff of the BFAR provincial project implementation unit (PPIU) and the office of the municipal agriculturist of the local government.

Although several potential livelihood projects were identified, the SMMSR members decided to engage in fish processing after a thorough evaluation of the viability of each potential project, specifically the technical, organizational, financial and marketing aspects.

4.2 Development of the micro-enterprise

While some members were familiar with fish paste production having been involved in similar projects in the past, there was a need for a technical training that focused on good product quality. This training was provided by a resource person from the BFAR Regional Office 4A. The training was conducted in the barangay with all the members of the PO in attendance. It consisted of lectures and hands-on activities including the actual preparation of fish paste under the resource person's supervision.

Complementary training sessions on project operation and management and on financial management were also organized to enhance the capability of the PO to manage its livelihood project. The financial management training for PO members included book and record keeping exercises. A visit was undertaken to nearby barangays, where fish paste production was being done, to motivate PO members and further enhance their knowledge of and exposure to the activity.

Twelve men and seventeen women of the SMMSR participated in the production of fish paste. All men were fishers while the women were involved in fish trading and fish drying on an individual basis prior to the fish paste project. The involvement of women in the project was important as they were responsible for production and marketing. Regular monitoring of the PO's activities was done by the assigned NGO worker, the LGU counterpart and the assigned BFAR personnel.

4.3 Constraints and how these were overcome

The project started in October 2002. At the initial stage of project implementation, the major constraint encountered was the supply and price of raw material, i.e. anchovies. The price of anchovies was high resulting in a high production cost. Because of the limited capital of the PO, the volume of production had to be reduced and it was decided to stop the operation altogether until the price of raw material was low enough to continue the project.

For the next production cycle, anchovies were procured from the Dalahican Port of Lucena City located 40 kilometres from the barangay. The transport cost resulted in a reduced profit margin. Realizing that this situation cannot sustain the project, the PO opted to source raw materials in nearby barangays. With assistance from the BFAR, the PO convinced local fishers and traders to sell the fish directly to them rather than taking their catch to Dalahican Port. This was advantageous to all parties and transportation costs were significantly reduced.

Because of the new arrangement the price per box of anchovies was reduced from PHP1 200 to a range of PHP 500 to 800 depending on the season. Through the lower production cost, the fish paste production became more profitable.

4.4 Linkages and support for the development of the micro-enterprise

The BFAR-FRMP through the NGO Ugnayang Tulong arranged with the Department of Trade and Industry (DTI) Lucena Branch for the accreditation of the SMMSR. The bottled fish paste was officially registered as *San Roque Bagoong*.

Another important support provided to the SMMSR by the BFAR was training on HACCP. The training conducted in November 2005 provided the PO members with vital inputs to upgrade their product's quality and make it more competitive and marketable. Samples of the bottled fish paste were submitted to the BFAR extension office for analysis to determine the quality of the product. The samples were found to be free of any form of pathogenic bacteria.

To improve marketing, the BFAR assisted the PO in making arrangements with beach resort owners in nearby barangays so that the fish paste could be displayed in shops and stores for the clients and visitors of the resorts. The FRMP project management office also assisted the PO in developing a product label to be pasted on each bottle to make it look more attractive and easier to sell.

4.5 Outcome and impact

At the individual level, members of the PO benefited from the sale of the product because they received dividends. Members also received payments for their labour during the processing phase, i.e. cleaning, grinding and bottling for every box of fish processed. Whereas many members were idle prior to the project, they are now able to augment their household income.

At the community level, Barangay San Roque has become a showcase of a PO successfully engaged in non-fishing though fisheries related livelihood activity. The project has been featured in several CRM success stories and has been visited several times by representatives of the FRMP funding agencies. Women's participation was highlighted since the success of the project can be attributed largely to their diligence and hard work. The project has also served as a motivation for others in the community and shown that there are alternatives open to coastal residents besides fishing. Small projects such as fish paste processing can be successfully implemented at the household level with little capital. The project also highlighted the importance of cooperation among members of POs and linkages with other sectors for a project to succeed.

Regarding fishery resource conservation the involvement of marginal fishers in the fish sauce production enterprise has eased the fishing pressure on their limited coastal resources and reduced their dependence on fishing as their main source of income.

4.6 Issues encountered in the development of the micro-enterprise

Besides unstable prices of the raw material due to seasonality, an initial problem was the lack of support by some members of the PO, who felt that the livelihood project was too "small-scale" to provide for their basic needs. With coaching and support from the NGO and the BFAR, these members were gradually encouraged to participate in the enterprise. They were given responsibilities to make them feel important members of the project, i.e. sourcing raw material, identifying markets and similar activities.

Regarding the supply of raw material, the PO explored the option of using other fish species and diversifying products. Species such as sardines are now being regularly processed especially during times of the year when these are abundant. The PO has also started experimenting with fish sauce production as fish sauce is a high value by-product of the fish fermentation process used in fish paste production.

4.7 Crucial steps and lessons learned

Capacity building with regard to leadership, team building and values formation is very important as it lays the foundation for successfully running a business. Building trust among members and delineating responsibilities are important first steps. Special emphasis should be given to values and leadership training since the success of a project depends on the values of the leaders and managers rather than on their mere technical capabilities.

Capability building in terms of business management and marketing are other vital steps. These steps are necessary to ensure that the PO members are prepared to implement and profitably manage their livelihood projects. Community participation plays a crucial role in

the selection and implementation of a micro-enterprise. Members must be convinced of the value of a livelihood activity, what it can do for them and what their roles can be. Acceptability and viability of a project must be determined using established criteria. This can be done with the support of a local NGO or an agency such as the BFAR.

Counterpart contributions from local government units and peoples' organizations are important factors for the success of a project. They ensure a more dynamic participation and partnership of all stakeholders concerned and at the same time instil a sense of ownership and accountability on the part of the PO for the project.

5. THE BAKERY PROJECT OF MAGSIKAP PAGASA PARAISO ASSOCIATION INC. (MAPPAI), QUEZON

by Reynaldo Belangel, Magsikap Pag-asa, Paraiso Association Inc., Villa Belen, Quezon

5.1 Introduction

Participants in the micro-enterprise development were marginal fisherfolk with income levels below the poverty threshold. They are members of a PO, i.e. the Magsikap Pagasa Paraiso Association Inc., which has a membership of 33 women and 27 men.

The bakery project was identified through the participatory and consultative approach promoted by FRMP. Meetings and dialogues with the members of the PO were conducted to solicit project ideas. Their opinions and recommendations were compared with the results of an environmental survey conducted prior to the consultations. When prioritizing projects several factors were considered, namely, the availability of raw materials, skilled manpower, marketability, infrastructure support and other supporting facilities.

PO officials and members identified potential projects based on inputs of the NGO. The local government unit, particularly the office of the municipal agriculturist, provided information on infrastructure and other necessary support. The BFAR-FRMP staff assisted the POs to validate the feasibility of livelihood proposals as part of the training on enterprise development. Major criteria considered when evaluating viability were related to technical, organizational, financial and marketing aspects.

5.2 Initiation of the micro-enterprise, constraints and support

Regular coaching and regular monitoring by local government and project implementing units was undertaken at the start of operations and in the course of implementation. The NGO, i.e. *Ugnayang Tulong* conducted a series of training activities for the members of the PO to strengthen the capability of its members regarding various aspects of enterprise development. Training courses were held on leadership and values formation, basic business management, bakery operation and management, bookkeeping, pricing and costing.

All of the livelihood projects implemented in Quezon require counterpart contributions from the participating POs in the form of infrastructure and labour. This is to instil upon the PO a sense of accountability and ownership as opposed to the *dole out approach* of some previous development projects. For the bakery project, the PO had to provide the building that was to be used for the project. The cost of the building was estimated at PHP42 000. In order to construct the building and start the bakery project, the PO members contributed PHP500 each. The money was used to finance the purchase of materials and pay for labour.

The project also assisted the PO to establish contacts with owners of nearby bakeries and to develop a sense of camaraderie and friendly competition with these bakeries. When the project started, very few members had experience in operating a business other than fishing and fish trading. Because of the lack of experience in bakery management of PO members, a baker had to be hired initially, which resulted in higher start-up costs. After two months, vendors who had been assigned to sell baked goods in nearby barangays, asked for an increase of their share of the profit. The matter was resolved through meetings and agreements were reached.

5.3 Project impact and lessons learned

At the individual level, dividends from the project increased the income of each PO member involved in the bakery project. Members also realized that there are economic opportunities outside fishing that are available to them. At the household level, household members who formerly were not income earners, also contributed by helping in selling and advertising the bakery products.

At the community level, the regular supply of bakery products served barangay residents, who previously relied on supplies from outside their locality. The project became a source of motivation for members and non-members and an eye-opener, which demonstrated that fishing is not the only livelihood opportunity available to coastal residents. The success of the project also helped to reduce fishing pressure in the area.

Capability building in terms of organizational strengthening especially with regard to leadership, team building and values formation is critical for all livelihood activities and all activities related to coastal resource management as it helps to change mindsets and traditional beliefs. Capability building in terms of business management and market linkages is necessary in order to ensure that the PO members are prepared to implement and manage their livelihood projects profitably.

The counterpart contribution provided by POs in project implementation is an important factor. It gives them a sense of ownership, responsibility and commitment to the project. Counterpart contribution can be provided in the form of labour and through provision of supplies and materials.

While social preparation, technical and business training prior to project implementation are necessary for the sustainability of a project, regular monitoring of the project operation is vital for early detection of problems and for on-the-job coaching as needed. Installation of systems and policies within the PO with regard to livelihood projects is important to ensure that proper checks and balances are in place and to ensure the continuation and sustainability of the project.

Marketing aspects should never be overlooked. Even if technical, financial and organizational aspects have all been accounted for, the market situation should be carefully evaluated as this will determine the survival of the project in the end.

6. THE POTTERY AND CERAMICS DEVELOPMENT PROJECT

by Neri Celot, Bolo Development Cooperative, Bolo, Tiwi, Albay

6.1 Introduction

Prior to the inception of the FRMP and the pottery and ceramics development project, the Bolo barangay had participated in the Fisheries Sector Programme. During that time, associations had been organized. Unfortunately, these associations could not be sustained and many barangay members had negative memories of previous government initiated community projects. At the beginning of the project, many barangay members were indifferent and displayed a *let's-wait-and-see* attitude. Others had a so called *dole-out* mentality and believed that it was their right to receive benefits from the government without the obligation to contribute or to give anything in return. To solve the problem, the BFAR, the NGO and the LGU conducted a series of meetings and consultations with the members of the barangay to explain the purpose of the project.

6.2 Activities carried out and problems encountered

The pottery and ceramics project was identified by the Bolo Development Cooperative (BODECO) as their alternative livelihood project because the raw material was available in the area. Funds for the operation of the project came from savings mobilization of the members of the cooperative. Assistance was provided from the LGU of Tiwi in terms of funding for machinery and provision of land and construction of a building to be used for the enterprise. A private company, i.e. *Unocal Philippines Inc.* (UPI) provided equipment. The Department of Trade and Industry (DTI) prepared the technical proposal and assisted in the procurement of facilities, marketing and monitoring of the project.

Training support was provided by the DTI, the Technical Education and Skills Development Authority (TESDA) and by the Department of Science and Technology (DOST) through the Tiwi Ceramics Technology Center. PHILCERAMICS mandated to undertake research and development activities also served as a training centre to develop the skills of local producers. It provided access to state-of-the-art facilities and enabled local producers to manufacture export quality products. It further improved the quality of products through the transfer of appropriate technology.

The AUL-CRES, an NGO contracted by the BFAR-FRMP for community organizing work in the area, conducted a series of cooperative pre-membership seminars and training on bookkeeping and auditing to ensure the success and sustainability of the enterprise. An association was organized with help of the NGO to undertake the project. It was called *Samahan Para sa Ikauunlad ng Kababayan Kalikasan ng Barangay Bolo* (SIKKAP) and registered by the Cooperative Development Authority (CDA) as Bolo Development Cooperative (BODECO) on 9 December 2004. The Bolo Development Cooperative is composed of 26 members from the barangays Bolo, Tiwi and Albay. The members are fisherfolk, farmers, fish vendors and housewives and spouses of fishers. All members are marginalized fisherfolk, who are affected by the depletion of the fishery resources in the area.

After training had been provided to the members of the BODECO in pottery and ceramics production within and outside the Bicol region and the cooperative had been registered, a memorandum of agreement (MOA) was signed on 15 December 2004 between the LGU of Tiwi, the TESDA-Albay, the UPI, the DTI and the BODECO to support the development of the pottery and ceramic enterprise of the cooperative.

During project implementation problems arose such as an initial shortage of funds to establish the enterprise, counter-productive and pessimistic attitudes of some members of the cooperative and a lack of technical know-how. However, these problems were solved through a series of capability building training courses by different government organizations like the DTI and the TESDA.

6.3 Lessons learned and impact of project

Effective organizational development is very important for every business organization. The full support of different government organizations for improving the capability of cooperatives in production management is a major factor, which affects the success of a project. The effectiveness of a business organization is a key to its profitability.

It is expected that this project will continue to provide additional income and livelihood opportunities for the members of the cooperative because its members have acquired entrepreneurial expertise in pottery and ceramics production through the project. Also through the project, the community formed self-reliant groups capable of undertaking resource management and livelihood activities and of ensuring the long-term sustainability of various initiatives.

7. GREEN MUSSEL CULTURE IN CASIGURAN, SORSOGON

by Virginia Mapa, Estorom, Casiguran, Sorsogon

7.1 Inception of project, participants and initial activities

The different government and non-governmental organizations involved in the establishment of the project include the BFAR responsible for technical training, monitoring, coaching and materials needed for the establishment of the mussel project; the LGU of Casiguran responsible for logistics, legal aspects and monitoring activities; the RFTC responsible for training; the Cooperative Development Authority (CDA) responsible for the registration of the cooperative as well as the DTI and the Canadian Executive Services Organization responsible for post-harvest training activities such as mussel processing and product development.

The cooperative in Casiguran was formed through the initiative of the LGU of Casiguran, the Fisheries and Aquatic Resource Management Council (FARMC) and the BFAR Regional Office 5. The micro-enterprise project to be undertaken by the cooperative was conceptualized through a consultation between the BFAR Regional Office 5, the FRMP-PMO and the members of the cooperative. All members agreed that they wanted green mussel culture as their livelihood project. The BFAR and the LGUs conducted an assessment and validation of the members of the cooperative and their operations and activities as well as a thorough evaluation of the natural environment.

The cooperative was found to be in good standing in terms of project implementation, financial management and good leadership. The area was found to be suitable for green mussel culture and it was found that there was a ready market for green mussels. The cooperative was open to those who were willing to become a member as long as they agreed to follow the rules and regulations of the cooperative. Orientation, values formation and pre-membership training of new members were conducted by the implementers of the project and by the local government units.

A two-day hands-on training on green mussel (*tahong*) culture was conducted by the BFAR for the members of the cooperative. The training was sponsored by the BFAR-FRMP. The main objective of the training was to equip the Storum Multi-purpose Cooperative (SMPC) with the technical know-how of mussel culture and of the different farming systems to produce *tahong* in the shortest possible time. The training employed sequential lectures and hands-on coaching exercises focusing on the actual installation of spat collectors. The stake (*tulos*) method was used in this project. Bamboo poles, 4 to 6m in length, were staked firmly at the sea bottom in rows at a 1m interval in areas about 3m deep and shallower. Since mussels need to be submerged at all times, it was not necessary that the tip of the poles protruded above the low tide water level after staking except for the boundary poles. In staking enough space between plots was allowed for the passage of farmer's boats during maintenance and harvesting. Collected spats were allowed to grow at the site until they reached a marketable size of 5 to 10 cm after 6 to 10 months. The mussels were harvested by pulling out the poles and bringing them ashore by boat.

Like other organizations active in the area, the FARMC provided recommendations for the realization of the project. The mussel culture project covered an area of one hectare located near the shoreline of the barangays Estorum, Casiguran, Sorsogon. The total amount involved in the mussel culture project was PHP242 835. Under its income diversification component, the FRMP extended financial support amounting to PHP182 835 for training, supplies and materials. An amount of PHP20 000 was provided by the LGU as counterpart contribution for gasoline, a motorized boat and other items An amount of PHP40 000 was contributed by the cooperative for labour cost incurred for the establishment of the project. The cooperative proved their commitment by sourcing assistance from other line agencies for product development. The DTI conducted training on green mussel processing such as producing chips and bottling and packaging of green mussels. The training was also supported by the LGU of Casiguran and the Regional Fisheries Training Center (RFTC).

The green mussel culture project was composed of 50 members, 29 men and 21 women, from the barangays Estorum, Casiguran and Sorsogon, who were fishers, farmers, fish vendors and housewives of fishers. The members belonged to the marginalized fishing sector that had been adversely affected by the decline of the fishing industry in the area brought about by fishery resource depletion.

7.2 Problems encountered

Most problems encountered at the beginning were basically attitudinal. Some members of the cooperative were initially indifferent and displayed a *let's-wait-and-see* attitude. Others expected hand-outs and believed that it was their right to receive benefits from the agencies involved without any obligation from their side. A practice, which proved to worsen these problems, was the outright payment to members for every service they had rendered to the mussel growing enterprise. Such practice was counter-productive as the members never felt the value of ownership and sacrifice. Because of this, other members hardly cooperated in most of the activities conducted. To solve these problems, dialogues and consultations were undertaken between the project implementation units of the BFAR Regional Office 5, the LGU of Casiguran and the members of the cooperative. These consultations changed people's attitudes and resulted in full support to the project.

Other problems that arose during the inception and implementation of the project were an initial lack of funds to establish the project and a lack of technical and management know-how of the members of the cooperatives. These issues were addressed and dealt with during the organizational stage of the cooperative through a series of training sessions organized by the LGU of Casiguran, the BFAR Regional Office No. 5 and the FRMP. Other technical training sessions and training on values formation were also conducted for the members of the cooperative.

7.3 Project impact and lessons learned

The project provided additional household income in the community and improved living conditions of fisherfolk. The project also reduced social exclusion of poor families and reduced the control and domination of the fishing community by local elites. The members of the cooperative have acquired entrepreneurial knowledge of green mussel production, which provides them with a new livelihood opportunity.

At the community level, the project created awareness, provided training and opportunities for participation in decision making. It also reduced discrimination against women, facilitated access to other development opportunities, increased confidence and participation in community life and provided long-term social benefits. Another main impact of the project was to reduce fishing pressure. The project also established rapport and unity among the members of the cooperative and the rest of the community and promoted goodwill through community, locally called *bayanihan* activities like coastal clean-up activities.

The implementation of the project showed that strong leadership and commitment of the members of a cooperative is a key to success. To achieve commitment and loyalty, a project should be clearly explained to the beneficiaries and the roles and responsibilities should be clearly defined.

8. SEAWEED FARMING OF MAMBUQUIAO FARMERS', FISHERFOLK'S AND WOMEN'S MULTI-PURPOSE COOPERATIVE (MFFWMPC) IN BATAN, AKLAN

by Herminio Penalba, Mambuquiao Farmers, Fisherfolk and Women's Multi-purpose Cooperative, Batan, Aklan

8.1 Introduction

The Mambuquiao Farmers' Fisherfolk' and Women's Multi-purpose Cooperative (MFFW-MPC) has been an active partner of the BFAR Region 6 in the implementation of the FRMP in Sapian Bay, particularly in the municipality of Batan. The officers and members of the cooperative play an active role in resource enhancement and in the monitoring of the 32 hectare fish sanctuary established in 2001, which has a positive impact on the fisheries resources in the area.

The members of the cooperative are also active members of the monitoring, information, education and communication (IEC) and law enforcement subcommittees of the Mambuquiao Fish Sanctuary Management Committee. These subcommittees function well, especially the law enforcement subcommittee, which is taking considerable risks when implementing the sanctuary ordinance against illegal activities. The Barangay Learning Resource Center (BLRC) established in 2001 has been a venue of several meetings on fisheries, health, women and social issues as well as an effective learning milieu for children in barangay Mambuquiao. Through the initiative of the barangay council and the BLRC current audit and inventory committee chairperson, additional information materials like encyclopedias, magazines and learning games as well as audio-visual equipment were sourced from donors.

The cooperative members have been enthusiastic and participative in various activities for the strengthening and development of their organization initiated by the NGO within the three-phase community organizing process. They never lost interest in attending capability-building training sessions and workshops on bookkeeping and financial recording, internal savings

generation, values orientation, cooperative management, basic and advanced leadership, conflict management, credit management, participatory organizational diagnosis and introduction of micro-enterprises. They are always eager to learn new ideas and techniques of running their cooperative and have an ardent desire for knowledge acquisition. They also highly appreciate topics related to the proper management and utilization of fisheries resources, legislation, the coastal ecosystems and participatory coastal resource assessment. This dynamic participation resulted in a high level of awareness of the residents of their role as coastal resource managers. It also led to the advancement of the cooperative in terms of management, membership and assets.

The cooperative engaged in several micro-enterprise activities under the income diversification component of the FRMP with the assistance of the community organizers, the municipal fisheries management unit of Batan and of the project implementing unit. The members of the cooperative have accessed funds from the NGO contracted by BFAR-FRMP to finance the individual and group managed small-scale projects in addition to their own capital build-up. The micro-enterprises include rice retailing, banana processing, a consumer store, candle making, used clothes retailing and vegetable growing. Records show the efficient implementation of these projects.

The fervent attitude and openness of the MFFW-MPC, the barangay council of Mambuquiao and the local government of Batan resulted in a holistic and integrated approach to the implementation of the FRMP during its six-year project term (1999-2005). The FRMP initiatives under its project components fisheries resource management, income diversification and capability-building were smoothly executed.

8.2 Tapping the potential of Kappaphycus *farming*

The farming of seaweeds especially *Kappaphycus* sp. has been a priority concern of the Philippine government through BFAR because of its important contribution to the national economy. Efforts to increase production, improve the quality of dried seaweed and improve linkages between various sectors of the industry were initiated to maintain the lead of the Philippines in the international market. The Seaweed Industry Association of the Philippines (SIAP) is the main partner of the DA-BFAR in addressing seaweed related concerns related to production, financing, research and development and marketing. Based on its current market status, seaweed farming can be a good business venture for people in suitable areas especially for coastal villagers with limited income.

As a strategy to improve production, the BFAR identified new areas to determine their suitability for farming *Kappaphycus* sp. The municipality of Batan was one of the identified potential areas for *Kappaphycus* growing based on farming parameters. In October 2003, the SIAP conducted a one-day orientation seminar regarding the opportunities for *Kappaphycus* farming in the municipality. The SIAP invited the barangay fisheries and aquatic resources management council (BFARMC) chairpersons and the barangay captains of the four coastal barangays, i.e. Songcolan, Mandong, Napti and Mambuquiao. Inspired by the presentation and noticing the potential, the representatives from the four barangays convened and formulated a joint resolution on 20 March 2004 requesting the municipal government to allocate farming areas in the municipal waters facing the Sibuyan Sea. In response to the resolution, the local government unit drafted and issued ordinance No. 2004-03, which allotted ten hectares for seaweed farming to each of four barangays.

Related to the thrust of the BFAR under the seaweed development programme (SDP) to identify new sites for farming, the fisheries extension, training and communications division (FETCD) approached the four barangays for pilot cultivation of *Kappaphycus* to fully determine its growth capacity using the *lantay* method. Training was conducted and materials

and seedlings (12 *lantay* structures of 2m by 5m each) were provided to groups of potential growers in November 2004.

The experiences gained by those involved encouraged them to seriously consider a larger-scale farming operation. The municipal fisheries management unit (MFMU) encouraged the MFFW-MPC in barangay Mambuquiao and the Napti Multi-purpose Cooperative to consider seaweed farming as an alternative livelihood project under the income diversification component of the FRMP. The project implementing unit of BFAR conducted a meeting with the two people's organizations to gather information and to assess their interest. This led to the preparation of a business plan for a one-hectare seaweed plantation with the two cooperatives as project beneficiaries. The business plan was submitted to the project management office for funding and implementation.

8.3 Hands-on training and seaweed planting

The first hands-on training on *Kappaphycus* farming was conducted from 9 to 13 May 2005. It consisted of the preparation of materials, i.e. cultivation lines, frames, and floating buoys and installation of 23 modules. Presentations on the first day consisted of an overview of *Kappaphycus* farming in the Philippines, lectures on cost and earnings analysis, module layout, breakdown and uses of the materials provided by the BFAR-FRMP as well as of planning activities for the actual installation of the modules. In his opening message, Municipal Mayor Herodutos Ramos encouraged the trainees to make use of the opportunity of seaweed growing in the community.

After the presentations on the first day, the 33 members of the MFFW-MPC, 24 women and 9 men, prepared the 23 modules for seaweed cultivation. Each module consisted of a rectangular frame with a dimension of 25m by 10m and 25 cultivation lines of 10m length each. The frame was supported by six sandbags, which served as anchors. The women prepared the cultivation lines. The men prepared the buoys and tied them to the frames. On the following day, the women secured the cultivation lines by inserting soft ties every 25cm, where the seedlings were to be attached. The men prepared the 23 main frames, marking and tying the portion, where the cultivation lines would be attached 1m apart. On the fourth day, the whole group went to the site, where the frames were to be set and filled bags with sand, which were then used as anchors. The men of the cooperative then began the installation of the frames in the sea using two boats. The installation took two days. After the installation of the frames, 5.2 tonnes of seedlings obtained from two different locations were planted.

8.4 Monitoring and harvesting of planted seedlings

The next major task after the installation of the modules and the seaweed planting was the daily monitoring of the culture area. The cooperative assigned two caretakers as maintenance team to regularly check the seaweeds for any unusual occurrence like diseases and poaching and to regularly move or shake the cultivation lines. Initially, slow growth of seaweeds was observed because of the adjustment period. A major problem was noted, however, on 6 June 2005, when almost 90 percent of the 1.1 tonnes of seedlings procured from Carles, Iloilo, did not survive. This might have been due to the difference in salinity from the source. The 4.1 tonnes of seedlings procured from the second source, i.e. Antique survived and grew.

With the assistance of the community organizers, the cooperative drafted their policy and regulations on seaweeds production. Five members of the cooperative were selected to serve as monitoring team, which also evaluated the performance of the two caretakers. A marketing team was formed, which consisted of three members. The cooperative specified the obligations of the maintenance team, monitoring team and marketing team. The cooperative assigned a member of the board of directors to be responsible for the duty logbook. All members of the cooperative were required to participate in planting and harvesting. It was

further decided that 70 percent of the net income would be distributed among the members while 30 percent would be retained by the cooperative. The specific amount that each member would receive depends on the number of hours worked for the seaweed culture project.

In July 2005, after two months of culture, the cooperative harvested 1 589 kg of seaweeds. After the harvest, new seedlings were planted. While the men of the cooperative brought the seaweed to the shore, the women were involved in weighing and separating the young tips from the old stems and in replanting the detached cultivation lines. From their first harvest the cooperative was able to sell 562 kg to the Napti Multi-purpose Cooperative and 900 kg to the municipal mayor at PHP10 per kg and earned a gross revenue of PHP14 620. The mayor of the municipality set up his own seaweed modules, which he then entrusted to the cooperative against payment.

8.5 The impact of natural disaster and lessons learned

More fisherfolk in the area expressed their interest to join the cooperative because of its new enterprise. After more than two months of culture the seaweeds continued to grow faster. The group scheduled the next harvesting on 16 October 2005. Since the typhoon season was approaching and the sea was becoming rough, the MFMU advised the members of the cooperative to harvest the seaweeds as soon as possible. But the cooperative wanted the seaweeds to grow for another few days before harvesting. This was unfortunately the wrong decision.

On 4 October 2005, a typhoon hit the province of Aklan. The storm devastated the farming modules and the seaweeds drifted towards the shore. The residents, who were not members of the cooperative, benefited from this disaster and collected the seaweeds. All efforts of the members of the cooperative in seaweed farming were wiped out in an instant.

These initial experiences gained in seaweed farming through the FRMP provided valuable lessons and insights for the cooperative. To prevent a similar disaster from happening again the cooperative decided to grow seaweeds only from March to September and to cease any farming activities from October to February. The cooperative also needs to find ways to maintain seedlings for the succeeding year's culture operations because of the difficulties encountered in seedlings delivery.

9. MARINE CAGE CULTURE OF MILKFISH BY THE RIVERSIDE BANTAY DAGAT FISHERFOLK ASSOCIATION

by Gani Acas, Local Government Unit of Kolambugan, Province of Lanao del Norte

9.1 Introduction

The case study is based on the experiences gained during the implementation of a project assisted by the local government units of Kolambugan, Lanao del Norte and by BFAR Region XII through the FRMP over a period of two years. Barangay Riverside is one of the coastal barangays of Kolambugan. Most of the residents are fisherfolk. Constrained by their use of non-motorized bancas and traditional fishing gear such as gill nets and hook-and-lines, their catch is often just enough for their own consumption. The situation is further aggravated by the declining fishery resources of the bay brought about by intense fishing pressure and habitat degradation. Family members, typically the wives of fishers, are usually forced to seek employment in the local service sector and take up traditionally female occupations such as washing laundry, babysitting, and fish mongering to help their families to survive.

The principal project objective was to provide alternative livelihood assistance to the Bantay Dagat Fisherfolk Association, whose main source of income was capture fishing and to divert their income source to fish culture to reduce fishing pressure in the locality. The project also served as an incentive and reward for the group's contribution to fishery law enforcement in the municipality of Kolambugan.

9.2 Conceptualization and initiation of project

In 2004, a group of 42 vigilant fisherfolk initiated and voluntarily organized themselves into a *Bantay Dagat* group to protect the coastal resources of the municipality against unscrupulous illegal fishers particularly those using dynamite. The Local Government Unit of Kolambugan, in coordination with the BFAR of Region 12, conducted training on fishery law enforcement for the group to enhance its capability to combat illegal fishing activities in the locality. The training enabled the participants to become qualified full-fledged fish wardens.

To support the group's efforts in fishery law enforcement, the LGU provided two motorized patrol boats and fuel. This further enhanced the group's abilities and resulted in more illegal fishers being caught and prosecuted. Illegal fishing in the waters of Kolambugan declined significantly.

Recognizing the contribution of the Bantay Dagat group to stopping illegal fishing activities in the locality, the LGU awarded them two units of bangus fish cages. Additional four units of cages were later provided by the BFAR-FRMP. The group formulated a project proposal and a business plan. These were evaluated by the LGU and the BFAR for feasibility and viability. After the approval of the proposal and business plan by the LGU and the BFAR, the plan was endorsed to the FRMP for funding. The project was approved and funds were allocated.

Materials were procured and a five-day hands-on training on bangus culture in fish cages was conducted. The beneficiaries were trained on the biology of bangus, design and construction of cages, management, marketing and record keeping. Non-members were invited to the training in the hope that the technology would spread to other barangays. The group also received training to enhance their skills of its members in project management.

BFAR extended technical support and assistance not only during the hands-on training but during the whole first cycle of culture operations. Social preparation was given due consideration. During the project inception period a series of community meetings and dialogues were held with the project recipients, BFAR and LGU staff.

A two-unit floating fish cage measuring 5m x 5m x 4m each was used by the project consisting of bamboo, polyethylene nets and plastic drums as main construction materials. Incorporated into the structure was the caretaker's hut. The cages were stocked at 30 milkfish (*bangus*) fingerlings per cubic meter as this was the most desirable density.

The Riverside Bantay Dagat Fisherfolk Association was the primary beneficiary of the project. The members of the association operated and maintained the fish cages themselves. Family members helped in harvesting, packing and selling the fish. During the first culture cycle, the members of the association received assistance from the staff of the office of the municipal agriculturist in the marketing of their produce.

9.3 Constraints and issues encountered

Kolambugan is one of the coastal municipalities of the Province of Lanao del Norte located along the outer shores of Panguil Bay. This exposes the municipality to strong wave action during the northeast monsoon from December to May and limits culture operations during this time of the year.

Constraints that were encountered during the implementation of the project included a delay in the initial release of funds so that the programme of activities had to be rescheduled three times. This caused problems with suppliers. Other constraints are related to fish diseases, which resulted in the death of fish. On some occasions misunderstandings occurred in the group especially when the sharing of profits was concerned. However, through regular meetings and dialogues these issues were always resolved.

During the implementation of the project assistance from the technical staff of the BFAR was solicited and provided whenever problems arose, especially when issues could not be resolved at the LGU level. Likewise, a close contact was maintained with the local police to ensure that no illegal interference with the fish cages occurred.

9.4 Project impact and lessons learned

Marine cage culture of bangus in the locality has proven successful and sustainable. The high demand for bangus, the simplicity of the production technology and the support of the community coupled with the political will of the local executives were the major factors, which contributed to the positive image of the project in the locality. As an alternative livelihood, the project enabled the beneficiaries to generate substantial and regular earnings from the sale of bangus. The beneficiaries have been able to augment their income, restock their cages, purchase household items and generate income and capital for their organization.

The transfer of culture technology has been successful and provided the basis for the beneficiaries to divert their source of income from capture to culture fisheries. This has reduced the fishing pressure in the coastal waters of the locality. More significantly the strengthening of the Riverside Bantay Dagat Fisherfolk Association has lessened illegal fishing activities in the municipal waters of Kolambugan.

The project became a showcase in the locality. As other residents also showed interest to start farming milkfish in cages, the LGU enacted a municipal fishery ordinance, which includes zoning regulations for its territorial waters and identifies areas where fish cages, fish corrals and stationary bag nets are allowed.

Social preparation played a vital role in the success of the project. Community participation was crucial as no project can be a success without the full involvement of the primary stakeholders. The success of the project depended on the right choice of beneficiaries. The full participation of the targeted beneficiaries in decision making regarding the initiation and implementation of the project was important for its success as they could appreciate the nature of the endeavour fully.

10. BOTTLING SARDINES: A PROMISING ENTERPRISE IN SOGOD BAY

by Mamerto Buenaventura Jr, Economic Development Foundation, Southern Leyte

10.1 Introduction

The community organizing and livelihood development component of the Fisheries Resource Management Project started on 16 February 2004 in Southern Leyte, Sogod Bay, in six municipalities consisting of 91 barangays. These were grouped into three clusters, i.e. cluster 1, comprising the municipality of Malitbog; cluster 2, consisting of the municipalities of Tomas Oppus, Sogod and Liloan and cluster 3, comprising the municipalities of San Francisco and Pintuyan. Initially, the project focused on community organizing. In the fourth month, enterprise promotion and development activities started. In November 2004, a review mission of the Asian Development Bank visited the area and considered an extension of the project. This was important for the implementation and establishment of the livelihood enterprises promoted by the project. The extension was approved and the project was extended from March to September 2005.

10.2 Identification of micro-enterprises

Regarding the promotion of micro-enterprises and alternative livelihood activities, the FRMP laid emphasis on enterprises in the field of fish processing, which added value to marine resources and products. These include the smoking of fish, the bottling of squid and sardines, making seaweed pickles, drying and marinating of fish and making fish and squid balls. The identification of the enterprises to be undertaken in the project area was part of the community organizing activities. The fisherfolk themselves, the project team as well as project partners were involved in the identification process. These included BFAR staff, the LGUs from the provincial down to the barangay level, academic institutions and NGOs. When identifying suitable enterprises, economic and technological aspects, social and cultural norms as well as legal, personal and community circumstances and parameters were evaluated and formed part of the decision making process.

10.3 Awareness building, training and group formation

The project beneficiaries and future entrepreneurs were made aware of the benefits of the development and establishment of enterprises and of the need to reduce fishing pressure on marine resources. The awareness building process focussed on the commitment which the fisherfolk was required to make. People were also made aware of the need to attend specific training courses on fish processing, basic accounting, bookkeeping and marketing.

The formation of groups, which would undertake the bottling of sardines as an enterprise, was one of the immediate goals of the organizing activities of the project. The potential entrepreneurs to be assisted by the project were selected according to their commitment and attitude towards the development and establishment of the micro-enterprises. While most enterprises were operated by groups consisting of fishers and farmers residing in coastal villages, some enterprises were operated by individuals. The Economic Development Foundation (EDF) played an important role in all training, awareness building, group formation and other support activities.

10.4 Products and cooperators

Four different flavours of bottled sardines were produced, i.e. regular and spicy bottled sardines in oil and regular and spicy bottled sardines in tomato sauce. The entrepreneurs were

also taught how to process other fishes. The bottling of fish species other than sardines was done under special arrangements and for special markets.

To avoid an oversupply of bottled sardines and unhealthy competition, only one bottled sardine enterprise was established in each municipality of the area where the FRMP operated. This was also done to ensure and maintain the quality of the product. The number of participants and cooperators in enterprises varied. In barangay Timba in the municipality of Malitbog, 11 persons participated in the sardine bottling enterprise. In barangay Maslog in the municipality of Tomas Oppus, the enterprise was undertaken by a single person. In barangay San Jose in the municipality of Sogod, 10 persons participated. In Barangay President Roxas in the municipality of Liloan and in barangay Tuno in the municipality of San Francisco, individuals operated the enterprise while in Barangay Nueva Estrella Sur in the municipality of Pintuyan, a single sardine bottling enterprise was operated by 24 persons.

10.5 Constraints and linkages

The main constraint encountered was that some of the project participants initially expected to receive all inputs from the involved government agencies for free. To enhance commitment and instil a sense of ownership of their enterprises, future entrepreneurs were encouraged to make counterpart contributions in the form of labour for the construction of the building used for the bottling of sardines or in the form of basic construction materials and labour. The materials and supplies for bottling of sardines like bottles, labels, caps and a start-up working capital of PHP1 500 were provided by the project.

As far as the supply of credit is concerned, the strategy of the project was to establish multi-purpose cooperatives, which could meet the credit and financial needs of their members. For this purpose four multi-purpose or credit cooperatives were established in the FRMP areas. Linkages with other institutions like the Southern Leyte State University, the DTI and the BFAD were established, which helped to improve the fish processing technology and assisted in product diversification, packaging, registration and accreditation. Linkages with LGUs helped to source capital for enterprise expansion, product promotion and marketing.

10.6 Impact and sustainability

In Malitbog, the sardine bottling enterprise had started on 30 May 2005 and generated an income of PHP2 885 by August 2005. In Tomas Oppus, where sardine bottling had started on 11 June 2005, PHP 990 had been earned. In Liloan, where the enterprise had started on 14 July 2005, PHP1 460 had been earned. In Sogod PHP2 800 had been earned from 14 June to August 2005. In San Francisco, PHP735 had been earned from 13 June to August 2005 and in Pintuyan, PHP1 185 had been earned from 15 June to August 2005. At the time when the case study was being written, production and earnings were gradually increasing as the sardine season was starting to peak.

In the Sogod Bay area the FRMP assisted fisherfolk to establish a large number of micro-enterprises, i.e. bottled sardines, smoked fish, seaweed farming, tailoring, bottling of squids, tilapia culture, vegetable production, making seaweed pickles, catfish culture, ginger production, ginger tea processing (*salabat*), mussel and oyster culture, production of fish balls and squid balls, drying and marinating of fish, bangus fish cage culture, aqua-silvi culture, tinagak making, demonstration of lobster culture and polyculture of bangus and mangrove crab. Altogether, 929 fisherfolk were engaged in these micro-enterprises. As of 31 August 2005 the approximate total income from all enterprises amounted to PHP605 000. Four credit and multi-purpose cooperatives were established. The combined assets of the cooperatives were valued at PHP1 617 839.72. The total membership had reached 1185 and the outstanding loans amounted to PHP2 537 500 involving 638 borrowers.

As far as the sustainability of the enterprises was concerned, questions were raised by the project participants towards the end of the project life in September 2005, whether they would be able to continue the enterprise after the support of the Economic Development Foundation (EDF) ended. The local government units from the provincial down to the barangay level also expressed their concerns. The project participants thought that the 1 1/2 years of support through the FRMP might not be sufficient to ensure the success and continuation of the enterprises.

When the project ended, the EDF addressed these concerns as part of its commitment and social development mandate to assist the FRMP beneficiaries. The foundation bought 2 800 bottles of sardines, 101 bottles of squid and 100 bottles of seaweed pickles produced by the project participants and distributed them in Manila as the EDF's corporate Christmas gift. The foundation also helped the project participants to sell their products under a special brand name and to explore the possibilities to enter into production and supply agreements with major retail stores like Robinsons, WalterMart and Makro.

In the near future, the enterprises established by the project will still require support by the NGO before the project participants have acquired the capability and self-confidence to operate and manage their enterprises all by themselves as entrepreneurial skills are acquired and learned over time. Direct assistance is still required for product promotion, marketing and financing.

The role of LGUs is also very important for the sustainability of the sardine bottling and other enterprises. During meetings where the continuation of the enterprises after the end of the project was discussed, a mayor pledged to allocate financial assistance not only for the bottled sardine enterprises but also for other enterprises. He also pledged to help with the promotion of the products of these enterprises.

10.7 Lessons learned

An important factor, which contributed to the success of the project, was the excellent working relationship established between the NGO and the BFAR Regional Office. Transparency, open communication and mutual respect were the key elements of the relationship.

Other important factors were the comprehensive understanding of the project itself, the strategy for project implementation and the sincerity, credibility and competence of project team, staff and of the NGO. The good working relationship with LGUs and elected officials including congressmen, governor, mayors, barangay chairpersons, government agencies and other institutions in the project area also contributed to the success of the project and so did the involvement, participation and serious commitment of all stakeholders especially the target beneficiaries.

11. THE SANDAL MAKING PROJECT OF THE ABONO APLAYA FISHERFOLK ASSOCIATION INC.

by Moises Casilac, Abono Aplaya Fisherfolk Association, Digos, Davao del Sur

11.1 Introduction

Fishing is the main source of livelihood in barangay Aplaya, Digos City. Almost every household has a member engaged in fishing and owns fishing boats. Only few of the boats are motorized. Other members of the community work as crew members on fishing boats. Illegal

fishing operations such as the use of beach seines have been a perennial problem in the barangay. Fishermen in the area also use fine mesh nets to capture fish from coastal waters not only during seasonal appearance of small fishes like anchovies but all year round thereby catching juveniles or young fishes of species such as roundscads, herrings and other small pelagic fishes.

11.2 Organization of association and initiation of livelihood project

To reduce illegal fishing in the area, the Local Government of Digos City in coordination with barangay officials conducted a series of dialogues with the fishers of the area. The first meeting was attended by about a hundred fishers. It was recommended that the fishers should organize themselves into an association or cooperative. Policies and regulations were discussed regarding membership and responsibilities of members. When the fishers learned that they would have to pay membership fees, monthly dues and to contribute share capital, only few signified their intention to join an association or cooperative. When the LGU organized the group, only 18 members joined, i.e. 14 men and 4 women. Some members were fishers while others were barangay employees.

After the group was organized, initial discussions were held to identify possible livelihood projects, which the association may undertake. Several project proposals were identified such as gasoline vending, rice trading and sandal making. Since sandal making was an existing industry in the coastal barangay of Abono and in Aplaya in Digos City and some of the members had already been involved in sandal making, the group decided to submit a project proposal to the local government of Digos City for possible funding assistance. Sandals produced in the area are marketed as far as Region 9 and 10. Traders usually pay the producers after the sandals have been sold.

The project proposed by the association had the following objectives: to provide an alternative livelihood for fisherfolk that will help augment their income; to enhance the capabilities of the organization in the operation and management of a sandal making business; and to minimize illegal fishing activities in the area by providing alternative employment opportunities for fishers.

In 2004, the Fisheries Resources Management Project through the NGO Orient Integrated Development Consultant Inc. (OIDCI) started community organizing activities in the barangay. The NGO focused on strengthening the capabilities of the already existing group. Savings mobilization was emphasized. The OIDCI requested the group to raise their share capital, of which the OIDCI promised to provide counterpart funds equivalent to the share capital contributed by the members of the group. The share capital was intended to be used for the sandal making enterprise. In addition to this share capital, the LGU of Digos City through the office of the city agriculturist appropriated PHP100 000 as financial support for the development and promotion of the sandal making industry.

11.3 Implementation and impact of project

Labour was divided among the members of the association, who were paid for every piece of work they did. As the sandal making process had different stages, some members only made soles, while others did the sewing and again others were involved in designing and marketing of the sandals. The work was usually done in their own backyard. Non-members of the association, who were skilled workers in sandal making, were occasionally employed to augment the labour requirements. Some members of the community became traders of their own products. Women and some officers of the association occasionally went to Davao City to observe the latest designs of sandals in the department stores. They bought samples, which then served as models for the sandals made by the association.

In support of the association's economic activities, the NGO strengthened the group's capability to run their business. Officers of the association were provided with training on bookkeeping and financial management. Regular meetings were conducted to solve problems encountered in running the project. Audits and inventories of stocks were conducted after every production cycle and after sales.

The main problem encountered in running the project was the marketing of the products. Marketing expenses were high. Following the usual practice, traders, who received sandals from the association, only paid the association after they had sold the sandals. As the payments were often delayed, the next production cycle also became delayed because the association needed the payment to procure raw materials. This problem could be solved by increasing the working capital of the group or by getting access to a source of short-term credit or overdraft facility.

The implementation of a land-based livelihood project such as the sandal making project helped to generate additional income for fisherfolk and thereby to reduce the level of their fishing activities.

12. THE FISH CAGE CULTURE PROJECT OF THE SINAWILAN FISHERMEN'S COOPERATIVE

by Ranilo Naran, Sinawilan Fishermen's Cooperative, Digos, Davao del Sur

12.1 Introduction

The Bureau of Fisheries and Aquatic Resources (BFAR) Regional Office 10, through its research outreach station in Tagabuli, Sta. Cruz, Davao del Sur, promotes cage culture of fish as an alternative method of rearing fish to a marketable size. Traditionally milkfish (*bangus*) is cultured in ponds and pens. To demonstrate and promote the new technology, the BFAR launched the bangus marine fish cage project. The marine fish cage project was implemented in 2000. It was conceptualized as a project managed by a people's organization (PO).

Its objectives were to uplift the socio-economic condition of fisherfolk through aquaculture, to provide alternative livelihoods to fisherfolk that will help augment their income, to enhance the capabilities of fisherfolk organizations in the operation and management of fish cage culture, to demonstrate the advantages of fish cage culture technology and to increase fish production.

12.2 Inception of project and community organization

Prior to the inception of the project, the BFAR conducted a survey and identified suitable sites for fish cage culture in Davao del Sur. Following the identification of suitable sites, the BFAR worked closely with the LGU of Digos City through the office of the city agriculturist in the selection of project beneficiaries, who would operate and manage the cage culture operation. The BFAR also provided the criteria for the identification of beneficiaries. The basic requirement was that they should be part of an organized group that is willing to undergo training and provide a counterpart contribution to the project. The LGU of Digos City recommended the Sinawilan Fishermen's Cooperative. In coordination with the RFTC, training on polyculture of bangus with siganids in fish cages was conducted. The BFAR and the LGU of Digos City provided the materials and farm inputs needed for the construction and operation of the fish cages for one culture cycle. Labour was provided by the members of the fishermen's cooperative as their counterpart contribution to the project. Training on fish farming was provided to the members of the cooperative consisting of lectures, hands-on

exercises and demonstrations. The members of the cooperative did the actual construction and installation of the fish cages.

Twenty-two members of the cooperative participated in the project. Membership in the cooperative is voluntary and open to all interested residents of the community. Some members had experience with fish cage culture as they had worked as cage caretakers for private fish cage operators. Residents of the coastal community, who joined the cooperative, were fishers using motorized and non-motorized fishing boats, seaweed farmers, fish vendors, employees, traders and those engaged in other minor income generating activities such as hog raising and mat weaving. Most members of the community and the cooperative were engaged in multiple economic activities and not totally dependent on their fishing activities for generating income. However, poverty still prevailed in the community. There was a lack of employment opportunities, a decline of catches from the sea and a related decline of income. The lack of capital and the absence of sources of credit for small-scale fishers made the situation in the barangay even more difficult.

In support of their bangus culture project, the wives of the members of the cooperative were trained on bangus processing such as bangus deboning and marinating bangus. The City Agriculture Office and the RFTC provided the resources needed to implement the training. The LGU provided food during the training while the BFAR provided resource persons, training materials and supplies. The RFTC also provided resource persons for the training. During harvest time, the women processed bangus and the LGU assisted in the marketing of their products. The women participating in the livelihood project earned supplementary income for their households.

12.3 Problems and solutions

During the first year of operation, the policy of the cooperative was to reinvest the sales proceeds from the sale of bangus into the next culture period. The project followed a polyculture method culturing bangus together with *danggit* (*siganids)*. While the proceeds from selling bangus were reinvested, the proceeds from selling *danggit* were divided among the members of the cooperative and constituted their direct income from the project.

Because the income from the sale of *danggit* was small, some members left the cooperative. Problems such as the neglect of other members to fulfil their duties of feeding and watching the fish cages caused conflicts among the members of the cooperative. As a result of these problems, the membership of the cooperative declined to 17.

Noting the dedication and perseverance of other members of the cooperative to continue the fish cage project despite the minimal direct income from the project, BFAR provided the cooperative with a seaweed project to augment their income. Likewise, when the Department of Environment and Natural Resources (DENR) implemented the Integrated Coastal Zone Management Project and was looking for an organized group to implement the project in the barangay, the LGU recommended the cooperative as beneficiary. The mangrove reforestation project of the DENR provided PHP50 000 as payment for the planting and maintenance of the mangroves in their area. Another PHP50 000 was given as seed money for the buy-and-sell of dried seaweed business of the cooperative. These projects are all still on-going.

The Orient Integrated Development Consultant Inc. (OIDCI) assisted the cooperative to strengthen its capabilities as an organization. Officers were trained on financial and credit management. Continuous coaching and mentoring on livelihood enterprise management was conducted for officers and project leaders. The OIDCI also provided additional financial assistance to establish a consumer store project.

12.4 The end of the cage culture project and lessons learned

With an increasing number of projects to implement, the cooperative decided to temporarily stop the operation of its fish cage project. An increasing cost of fingerlings and feed made it undesirable to continue its operation. The cooperative found the farming of seaweed more rewarding as seaweed has a higher market demand and a shorter culture period than bangus. Most members of the cooperative decided to focus their time and energy on seaweed farming and seaweed became a cash crop for them. The seaweed nursery and dryer provided by the BFAR enabled the members to establish their own seaweed farm.

Based on the experiences with the project, it seems that the operation of a marine fish cage project is best operated as a family enterprise and not as a PO-operated project. The profit realized from the operation of the enterprise when divided among the members of a cooperative is not very encouraging given the length of the culture period. A net profit of about PHP20 000 after a four-month culture period when divided among 20 members will give each member as little as income as PHP1 000, which amounts to as little as PHP250 per month. This suggests that a marine cage culture project when operated by a PO should be treated as just one of their business enterprises but should not be expected to be the main source of income for its members.

13. THE SEAWEED CULTURE PROJECT OF THE PUNTA BIAO FISHERFOLK ASSOCIATION INC.

by Marlita Englis, Punta Biao Fisherfolk Association Inc., Digos, Davao del Sur

13.1 Introduction

The BFAR Regional Office 11, through its research outreach station in Tagabuli, Sta. Cruz, Davao del Sur, implemented the National Seaweed Development Project in support of the government's effort to increase productivity and provide alternative livelihood to fisherfolk as a measure to reduce the use of destructive fishing methods. The project was conceptualized as a project managed by people's organizations such as associations or cooperatives. Its objective was to improve the income and socio-economic condition of fisherfolk through seaweed farming.

The National Seaweed Development Project aims to promote the establishment of seaweed nurseries in strategic areas in different parts of the region. The nurseries ensure a quality supply of propagules for seaweed farmers. The BFAR conducted training on seaweed culture and provided the beneficiaries with the materials needed to establish a 0.25 ha seaweed nursery. The BFAR worked closely with the LGU of Digos City through the office of the city agriculturist in the selection of project beneficiaries.

13.2 Organization and reorganization

The LGU of Digos City, through the office of the city agriculturist, recommended the Punta Biao Fisherfolk Association Inc. (PBFAI) as project beneficiary. The PBFAI is an organization composed of men and women, who are involved in fishing and fisheries related activities in the coastal community of barangay Cogon, Digos City, Davao del Sur. The association was previously known as the Cogon Marine Fish Cage Association (CMFA). It was organized by the LGU of Digos City through the office of the city agriculturist in the last quarter of 2003 to implement the BFAR marine fish cage project. Due to internal problems during the operation of the fish cage culture project, the group was reorganized in March 2004 and its name was changed. It was registered with the Securities and Exchange

Commission in June 2004. Membership in the association is voluntary. Because of lessons learned prior to the reorganization, LGU organizers and members of the association set criteria for membership. These included the payment of share capital and membership fees, attendance of the meetings of the association and a good reputation in the community. Announcement of meetings and invitation of membership was disseminated through notices posted in public places such as the barangay hall. At the time of the reorganization, the association had 33 members, i.e. 18 women and 15 men.

Many residents, who joined the association, were engaged in fishing using motorized and non-motorized fishing boats, in seaweed farming, fish vending, running small sari-sari stores, mat weaving, fish processing, hog raising, small-scale trading and in other land-based activities.

13.3 The seaweed nursery project

In October 2004, the BFAR provided the PBFAI with a seaweed nursery project. Seaweed farmers, who were members of the association, were chosen as beneficiaries. Since the beneficiaries already knew how to grow seaweed, an orientation seminar was organized for the beneficiaries, which focused on maintenance of seaweed farms, post-harvest handling, processing and marketing of seaweed. The BFAR provided the group with materials for the establishment of a seaweed nursery. During this period, marketing of the products was done individually and the association did not get any share of the sales proceeds from the production of the members of the association.

In addition to the seaweed project, other livelihood assistance was also provided to the members of the association and its membership expanded. Government offices in the province such as the DA, the DA-BFAR, the DENR and the BFAR-RFTC provided financial and technical assistance for fish cage culture, fish processing and hog raising. The LGU requested the DENR to include the association as beneficiary of their mangrove reforestation project, which was a component of the Southern Mindanao Integrated Coastal Zone Project. Members of the association, who planted and maintained mangroves, were paid for their labour. Another group within the association was provided with a sari-sari store with a capitalization of PHP50 000 from the DENR.

For every project implemented by the association, a project leader was assigned to supervise and monitor its implementation. When Orient Integrated Development Consultant Inc. (OIDCI) started community organizing activities in the area, it invited the president of the PBFAI to visit Bohol to observe other coastal resources management initiatives and livelihood projects undertaken by POs and LGUs. Officers and project leaders of the association received training from the OIDCI on financial and credit management and on livelihood enterprise management. New members of the PBFAI were required to undergo membership seminars to familiarize themselves with their responsibilities as members of the association. It was observed that more women than men attended the seminars and training sessions organized by the OIDCI.

13.4 Expansion of operations and completion of project

When the price of dried seaweed for the export market became profitable for seaweed farmers, the membership of the association increased. New members hoped that the association may obtain livelihood assistance from government projects like the FRMP. Through the help of the OIDCI and the provincial and city agriculture office, a proposal for seaweed farming was submitted to the FRMP for funding assistance. When the project proposal was approved by the FRMP, a series of meetings initiated by the OIDCI, the LGU and the BFAR were conducted. The LGU technician, who worked with the association closely, guided the association in the formulation of policies for the identification of

beneficiaries and on members' responsibilities in the association. Whereas previously marketing of the dried seaweed produced by members of the association was done individually, a new policy was introduced, which made it compulsory for all beneficiaries to sell their products through the association. Members were also required to provide labour for the construction of their seaweed dryer.

In the last quarter of 2005, the BFAR-FRMP completed the implementation of the seaweed project. With the increasing demand for seaweed, members of the community continue to expand their seaweed farms. An ever increasing number of men, women and children are spending their time on seaweed farming while fishing effort is slowly decreasing.

Following the successful implementation of different projects by the association, banking institutions have been offering credit for seaweed farming, which is considered the most viable of the activities undertaken by the association. Problems encountered by the association, which are related to the expansion of seaweed farming and membership, are cases of theft of seaweed and difficulties of managing an ever increasing number of association members.

14. MANGROVE CRAB CULTURE BY THE ANONANG MULTI-PURPOSE COOPERATIVE

by Enecita Quiapo, Anonang Multi-purpose Cooperative, Anonang, Aurora, Zamboanga del Sur

14.1 Introduction

Panguil Bay has narrow channels and a low water level due to siltation. Most fishing and fish pond areas of Anonang, Aurora and Zamboanga del Sur are leased or owned by the Lanao Industrial Corporation (LAICOR). Some fishing areas belong to the Anonang Samahang Nayon Inc. The Anonang Farmers and Fishermen's Multi-purpose Cooperative (AMPCO) is composed of fish pond workers, subsistence fishermen, shell gatherers, wood gatherers, fish brokers and fish vendors. Fifty percent of the members of the cooperative are also farmers. Most of them live within three to four kilometres distance from the fishing and fish pond areas.

During the project identification stage, consultations were conducted with fisherfolk and potential livelihood projects were shortlisted. Because of its high viability, the group identified mangrove crab culture and fattening as their proposed project.

14.2 Acquisition of land and inception of project

Like other cooperatives in Panguil Bay, the AMPCO does not have a fish pond area of its own and had to rent an area for the project. The LAICOR did not want to lease any portion of its area as the corporation was already using it for aquaculture. Initially the Anonang Samahang Nayon Inc. also refused to sublease any pond area to the AMPCO as it wanted to avail of the project itself. After a series of dialogues, the Anonang Samahang Nayon Inc. finally agreed to allow AMPCO to sublease a portion of their fishpond area.

After acquiring the pond area, a project proposal was prepared with the active participation of the members of the cooperative. The project was approved by the FRMP-PMO and the members of the cooperative received hands-on training on mangrove crab culture. The first training was conducted by the PIU, the PPIU, the FMU and a NGO on 14 June 2004.

14.3 Project implementation, constraints and linkages

Initially, the cooperative had difficulties to implement the project, because the members lived far from the project site. The main problem was poaching. Due to the cooperation of the members and their desire to make the project work, the cooperative implemented a 24-hour watch against poachers. Women members actively participated in both, working in ponds and guarding the crabs during night time against theft.

Because of the determination and perseverance of the members of the cooperative, the first cycle of mangrove crab culture was a success. The members of the cooperative were able to realize a gross revenue of PHP125 000 after the first harvest. In addition to mangrove crab, which was the main crop, incidental species such as shrimps and tilapia provided additional income for the cooperative.

All the major stakeholders of the project were involved in hands-on training and coaching. The training was not only concerned with the technical aspects of the project but covered all aspects of running a successful micro-enterprise including financial and marketing aspects. The LGU of Aurora, through the office of the municipal agriculturist, also provided assistance to the cooperative. The municipal agriculture officer and the agriculture technician together with a staff of Jerry E. Pacturan Consultants and Trainers–Alternative Technology for Resource Enhancement Company (JEP-ATRE) assisted the cooperative in its day-to-day operation. The PIU also provided technical assistance by conducting training on value addition and monitored the project regularly.

The cooperative maintains linkages with the BFAR-FRMP, the LGU of Aurora, the PIU, the JEP-ATRE, the DTI, the Association of Fishery Cooperatives (AFC), the Aurora Integrated Multi-purpose Cooperative (AIMPC) and local buyers of crabs in the area and nearby cities.

It is expected that the cooperative will be able to expand its project and at the same time provide its members with an opportunity to augment their income. The cooperative is expected to undertake the marketing for other crab-producing cooperatives in the area as barangay Anonang is strategically situated at the national highway bordering Zamboanga del Sur and Lanao del Norte.

14.4 Issues and key steps to the success of the project

The major issues faced by the members of the cooperative in managing their mangrove crab culture project are poaching of mangrove crabs, the distance to the culture side, which hinders a more effective management of the project, and the high cost of maintenance and repair of dike and gate. The fact that the LAICOR has leased almost all fishing grounds in the area has deprived the fisherfolk of their traditional sources of livelihood.

Factors, which are important for the success of the cooperative, are the regular conduct of board of directors' meetings of the cooperative; a continuous dialogue among the members to avoid discouragement and misunderstandings and to ensure that issues and concerns are properly addressed; allocation of clear responsibilities for the implementation of the project and a system of incentives, which encourages participation in the undertakings of the cooperative.

Also important for the success of the cooperative is a high level of transparency in all undertakings. The book of accounts is always available to allow members to keep track of all transactions. The contribution of the cooperative to the development of the community has given its members a sense of pride and fulfilment. As far as the future of the cooperative is concerned, expansion of cooperative membership and capital expansion should be a priority thrust.

15. BANANA GROWING BY THE GUBAAN FARMERS' AND FISHERMEN'S MULTI-PURPOSE COOPERATIVE

by Camila Alforo, Gubaan Farmers and Fishermen's Cooperative, Aurora, Zamboanga del Sur

15.1 Introduction

The Gubaan Farmers and Fishermen's Multi-purpose Cooperative was organized by the Network Foundation Inc., a non-governmental organization, in September 1993. The cooperative has 63 members including 37 men and 26 women.

The first activity of the cooperative was the opening of a consumer store. The funds used for the establishment of the consumer store came from the Barangay Integrated Development Cooperative and from the QUEDANCOR. The loans from the latter organization have already been repaid by the cooperative.

In 1995, the cooperative was a beneficiary of the FRMP, which supported banana and sweet camote production. Initial attempts were made to engage in the culture of crab and tilapia but no suitable site for fishery-based projects could be identified in the locality.

15.2 Problems and issues

The cooperative encountered several problems during its operation. Among them was a conflict of interest between the project manager and the treasurer of the cooperative. Other problems related to the first problem were caused by bad debts incurred by the cooperative in the course of its operations. The lack of adequate fish farming areas limited the livelihood options of the members of the cooperative. Even though overfishing is one of the major issues in the area, the members of the cooperative still desire to engage in fishery-based livelihood activities that are environmentally sustainable. Even though in existance for many years, the cooperative is still in need of technical assistance.

15.3 Lessons learned

Several lessons can be learned from the operations of the cooperative. For a livelihood project to be viable, the members of the cooperative must be able to operate the project as a business. To minimize conflicts between members these need to adjust their expectations and responsibilities. Transparency should be pursued in every step of operations of the cooperative to avoid the development of distrust. Finally, continuous information and education is necessary to increase the awareness of the members of the cooperative of the value of environmental protection and conservation.

16. FISH CAGE CULTURE IN BARANGAY CONSUELO

by Policarpio Alipio, Consuelo Fisherfolk Multi-purpose Cooperative, Consuelo, Magsaysay, Misamis Oriental

16.1 Introduction

Barangay Consuelo is one of the nine coastal barangays of Magsaysay, Misamis Oriental. It is located 140 kilometres east of Cagayan de Oro City, the regional centre. It has a population of 3 085 inhabitants living in 1 011 households. Magsaysay is one of the five municipalities in Gingoog Bay, which is covered by the FRMP.

The Consuelo Fisherfolk Multi-purpose Cooperative (COFMCO) was organized in July 1998 with help of the TOUCH Foundation Inc., an NGO. The COFMCO was registered with the Cooperative Development Authority on 20 January 1999 and is composed of 31 active members, who are fishers, fish vendors and occasional peddlers residing in *Purok* 1 of barangay Consuelo. The membership comprises 9 men and 22 women, mostly wives and daughters of fishers. Prior to forming the cooperative, the households used to live a hand-to-mouth existence and depended entirely on their daily catch for food and income. The cooperative is functioning well and the membership is cohesive. An example is the operation of their sari-sari store and their microlending programme, which the cooperative has sustained for years.

16.2 Initiation and implementation of project

The COFMCO expressed interest in undertaking livelihood projects in the field of mariculture and sought assistance from the LGU of Magsaysay through the fisheries technician of the municipal agriculture office. A prime motivation for the members of the COFMCO for embarking on alternative livelihood projects was the scarcity of money and food especially during full moon and bad weather when fishing operations were restricted. During these times when the fisherfolk could not go out to sea, they relied solely on whatever was available for their nutritional needs such as dried fish, fish paste and root crops. Alternatives were canned goods and processed food from their consumer cooperative store but the access to these alternatives was limited as the possibility to buy goods on credit was determined by the amount of share capital they owned of the consumer cooperative.

After the fisheries technician had surveyed the area, the LGU requested the BFAR Regional Office for technical assistance. Following the request, the BFAR conducted a site assessment in collaboration with the LGU of Magsaysay and the provincial agriculture and natural resources office (PANRO) of Misamis Oriental. The area was declared suitable for fish cage culture and other mariculture projects. The cooperative drafted a project proposal and business development plan, which was then reviewed and enhanced by the LGU and the BFAR.

A memorandum of agreement (MOA) was signed between the COFMCO, the LGU of Magsaysay and the BFAR. After the MOA had been signed, the owners of the lots in Purok 4 fronting the area identified by BFAR as suitable for mariculture opposed the plan of the cooperative with reference to their riparian rights. The members of the COFMCO believed that the real reason behind the opposition to their mariculture project was related to the microcredit operations of the cooperative. The cooperative charged lower interest rates than the moneylending operations of the owners of the lots and deprived them of prospective borrowers. In response to the opposition of the lot owners, the COFMCO sought the advice and opinion of the LGU, the BFAR and the DENR concerning the rights of the lot owners. At this stage, some members were apprehensive and doubted the success of the project. Meetings and dialogues were held to convince the concerned members that the project would eventually succeed.

These dialogues were followed by a 15-day hands-on training on finfish culture in cages. The resource persons came from the LGU of Magsaysay, from the PANRO-Misamis Oriental and from the BFAR regional office. Meanwhile, COFMCO had established a good working relationship with the LGU of Magsaysay, the provincial agriculture and natural resources office (PANRO) of Misamis Oriental and the BFAR regional office for the realization of the fish cage project in Consuelo, Misamis Oriental.

The cooperative also expanded its linkages with the Department of Labour and Employment (DOLE) for assistance. When the cooperative proposed an expansion of its fish culture operation, DOLE evaluated the cooperative's plan for expansion and provided the cooperative

with one additional fish cage plus fingerlings. The LGU Magsaysay provided other needed materials and training support. The BFAR regional office maintained its technical support to the cooperative. It sponsored a member of the cooperative to undergo training on finfish cage culture at the national brackishwater aquaculture technology research center (NBATRC) at Pagbilao, Quezon. The BFAR-RFTC also provided training on post-harvest handling.

16.3 Project impact and issues

The project had a positive economic impact through the generation of additional income for fishers and their households. Members of the cooperative used a part of this income to increase their share capital since a portion of their income from the fish cage culture operation was channelled back to the cooperative. Their increased share capital ensured them of higher credit ceilings in the microlending programme of the cooperative. A part of the additional income was invested in capture fisheries. The positive nutritional impact of the project was shown by an increased supply of fish during the lean season in capture fisheries as the cage culture operations continued throughout the year.

Presently, the cooperative operates five fish cages and another two units are under construction. Three cages are used for bangus culture and stocked with 6 000 fingerlings each and two others are used for siganid culture and 8 000 fingerlings are stocked in each unit. Every harvest provides the cooperative with a net income of PHP40 000 to PHP60 000. The success of COFMCO encouraged other fisherfolk to adapt the same kind of micro-enterprise. Two other fisherfolk associations and two individual fisherfolk operate a fish cage each following the example of the COFMCO. Meanwhile, the local government unit of Magsaysay is in the process of enacting a comprehensive municipal fishery ordinance, which includes the designation of an aquaculture zone and a licensing mechanism to effectively regulate the operation of fish cages in the area.

During the implementation of its fish culture project, the cooperative had to deal with several issues. An important organizational issue was the occurrence of miscommunications and misunderstandings between members. To facilitate communication and improve mutual understanding and cooperation, a regular conduct of meetings was considered the key. Board meetings were held every first Saturday of the month and regular assemblies were held every second Saturday of the month.

Another issue the cooperative had to deal with was the rendering of free and paid labour and services to the cooperative. To ensure equal treatment and benefits for all members, the principle of “equal work, equal pay” was strictly adhered to. Similarly, to ensure financial discipline and that all members were treated equally, collectibles from members such as overdue loan repayment instalments were automatically deducted without delay from their respective receivables.

As far as technical issues are concerned, the main issues encountered were fish mortality, an irregular supply of bangus juveniles and limited markets. Fish mortality was controlled and kept at low levels by coordinated efforts of the BFAR, the LGU and the cooperative. The BFAR regional office conducted periodic laboratory analyses, the LGU monitored the project and members of the COFMCO did the physical observation and recording of events for future reference.

Sometimes it was difficult to procure bangus juveniles as the source of juveniles was far and suppliers would not deliver for orders of less than 10 000 pieces. To overcome this problem, the BFAR regional office plans to establish a bangus hatchery in Camiguin. A rearing farm for bangus juveniles will also be established in Lala, Lanao del Norte.

To take the best advantage of the marketing potential of bangus and match production and market requirements, partial harvesting as well as early harvesting was introduced to meet buyers' preferences in terms of fish sizes and other preferences. The cooperative took the help of the LGU and other organizations to facilitate the marketing of fish. Members sold fish from house to house to earn extra income. Stocking was scheduled at a one-month interval to avoid an oversupply of fish.

17. CAGE CULTURE OF GROUPER: THE MALORO FISHERFOLK'S MULTI-PURPOSE COOPERATIVE'S EXPERIENCE

by Aguido Ras, Maloro Fisherfolk's Multi-purpose Cooperative, Maloro, Tangub City

17.1 Introduction

The culture of grouper locally known as "lapu-lapu" in cages at Dimalooc Cove started in 1998, when the research staff of the then Silanga Experimental Station of BFAR successfully conducted a verification study on the culture of grouper in cages in the area. The fact that Dimalooc Cove was a protected area and suitable for mariculture activities contributed to the success of the project. This initial success prompted the local government unit (LGU) of Tangub City through the city agriculture office to operate and manage its own grouper cage project. Owing to the high market value of the fish and consumer preference over other fish species, the LGU was able to sustain the operation of the project over many years.

The project became an eye-opener and showcased the technology as an alternative livelihood option among coastal dwellers in the area, who are mostly engaged in the operation of so called filter nets. Because of the project's high investment requirements, the LGU remained the only adaptor of the technology. The implementation of the FRMP in Panguil Bay in 2003 through its income diversification component raised hope and opened opportunities for POs to venture into mariculture activities to diversify their income and reduce their reliance on fishing. It was within this context that the grouper cage culture project of the Maloro Fisherfolk Multi-purpose Cooperative was conceived.

17.2 Training

The Maloro Fisherfolk's Multi-purpose Cooperative is the only remaining active cooperative of all cooperatives organized under the Fisheries Sector Programme from 1990 to 1996. The operation of a credit and savings programme is its primary economic activity. The cooperative manifested its capability to mobilize savings of members and manage their micro-enterprises, which was an important factor in the choice of the cooperative as the beneficiary of the cage culture project. With organizational leadership and skills in managing a micro-enterprise already in place among the members of the cooperative, the focus of the concerned stakeholders like BFAR and the LGU in the new project of cage culture of grouper was on the transfer of technology through hands-on training of the beneficiaries, on management and on project sustainability. The following was the content of the training course:

Lecture phase (3 days):

- principles of aquaculture;
- biology of grouper;
- criteria for site selection;
- cage structure design and construction;
- installation of cages;
- handling and transport of fingerlings;

- stocking, acclimatization and sampling;
- tips to improve survival during stocking;
- feeds and feeding;
- harvesting, marketing, financial management and record keeping.

Practical hands-on phase:

- construction and installation of cages;
- maintenance, cleaning and inspection of cages;
- monitoring of stock, sampling, recording and documentation;
- coaching and technical supervision for entire culture period;
- educational visit to similar projects in Baliangao and Dipolog City.

17.3 Project beneficiaries

The Maloro Fisherfolk's Multi-purpose Cooperative was organized in 1992 during the implementation of the Fisheries Sector Programme of the Department of Agriculture. The initial membership was 25. Thirteen members were wives of fishers, six were fishers and three were fish vendors and government employees, respectively. Altogether sixteen cooperative members were women and nine were men. The cooperative was registered with the CDA with the assistance of the Network Foundation contracted by the FSP to undertake community organizing activities.

17.4 Establishment of micro-enterprises

Through the collaborative efforts of the LGUs, the municipal agriculture office, the JEP-ATRE, the cooperative and with guidance from the PMO through the regional coordinators, the cage culture project was established in April 2004. The culture technology consisted of three modules. Each module was composed of four cages measuring 3m x 3m. A total of 1 500 juvenile groupers with an average weight of 110g were stocked during the launching of the project. The launching was attended by the LGU executives, officers from the city agriculture office and representatives from the BFAR and the JEP-ATRE. The beneficiaries were also present as well as members of the barangay council.

17.5 Linkages

Support to the project was provided by the LGUs at barangay, city and provincial level, the BFAR and the NGO JEP-ATRE. The city agricultural officer (CAO) was primarily responsible for the day-to-day supervision of the project and the provision of technical assistance. The office of the CAO unfortunately failed to perform its duty properly. This resulted in problems, which could have been avoided or its effects minimized. The service pump boat provided by the LGU greatly helped in the maintenance work of the project.

The BFAR-FRMP provided funding and technical support, especially during the establishment of the project, in water quality monitoring and assessment and provided immediate response when called upon for emergency assistance. The JEP-ATRE made the services of its community organizer available for preparing documents needed by the project, for facilitating meetings and for coordination.

17.6 Constraints encountered

Limited accessibility and availability of juveniles for stocking was a constraint because the local suppliers mainly relied on juveniles caught in the wild in the absence of a grouper hatchery. Another constraint was encountered in marketing. The cooperative wanted to sell their products in Metro Manila but did not posses the marketing skills, technology as well as the confidence to handle and transport live fish to a remunerative but distant market. Hence, the option taken was to forge a marketing contract agreement with a buyer to buy all the produce at a price of PHP200 per kg pre-agreed between the two parties.

There was also neglect by members of the cooperative such as the failure to regularly undertake underwater inspection of a fish cage. Because of this, the anchor line was dislodged allowing the cage to drift with the current. This resulted in the mortality of about 43 percent of the total stock due to stress and physical damage. This incident discouraged some of the members to continue with the project.

17.7 Impact and issues

The results of the project's first cycle did not dampen the interest of the seven remaining beneficiaries to go on with the project. Early January 2006, they started the second cycle with only 1 000 juveniles. A total of 391 kg of groupers were produced during the first harvest with sales revenue of PHP77 005. So far, the project had only a limited impact on the participating households and on the community. What was evident though was the strengthening of camaraderie and bonding among the seven beneficiaries of the project. Fisherfolk, who are used to getting daily income from fishing, had problems with day-to-day management and maintenance of the cages. As the days went by, some of the beneficiaries' enthusiasm and interest to regularly tend to their project waned. Only seven beneficiaries remained committed and continued the project.

17.8 Crucial steps for consideration in future micro-enterprise initiatives and lessons learned

Micro-enterprise development should follow immediately after the community organizing and strengthening activities while the NGO still supports the cooperative in the operation of their project. Moreover, the project demonstrated that constant turn-over of community development workers' assignments and gaps in the renewal of NGO's contracts hinders effective capacity building of POs. Presence of LGUs in the day-to-day operation of the project especially if the NGO's contract has already terminated is crucial. Technical and organizational problems that may be encountered can be immediately addressed.

Municipal fisherfolk are not yet accustomed to manage projects with long gestation periods. They become discouraged when problems detrimental to their project's success surface along the way. The role of NGOs is crucial in building a good foundation for POs to overcome this situation. Proximity of the project to the residences of the beneficiaries also helps in sustaining the interest of beneficiaries to look after their project.

18. MICRO-ENTERPRISE DEVELOPMENT IN SOUTHERN ILOILO AND BANATE BAY

by Carlos C. Baylon, College of Fisheries and Ocean Sciences, University of the Philippines

Two coastal resource management councils, i.e. the Banate Bay Resource Management Council Inc. (BBRMCI) and the Southern Iloilo Coastal Resource Management Council

(SICRMC) implemented a livelihood and micro-enterprise development pilot project for coastal fishing communities with support of FAO. The project was implemented in 2004 and 2005. Its impact as well as the lessons learned is described in detail in Part 4 of this report.

The Technical Project RA 233A2 of the Food and Agriculture Organization of the United Nations (FAO) aims to promote the contribution of small-scale fisheries to poverty alleviation and food security. FAO has been assisting selected coastal resource management councils in the Philippines in the development and use of demographic indicators for the identification of crucial socio-economic issues in coastal areas and monitoring the impact of management measures on the social and economic status of fisherfolk. One of the crucial issues identified with the help of these indicators is the need for the promotion of sustainable micro-enterprises and introduction of related extension services and microfinance support. The livelihood project described in this chapter addressed this crucial issue. It is hoped that outputs from this project will be used in the development of micro-enterprises in other parts of the Philippines and Southeast Asia.

Two coastal resource management councils, i.e. the Banate Bay Resource Management Council Inc. (BBRMCI) and the Southern Iloilo Coastal Resource Management Council (SICRMC) participated in this livelihood project, which was assisted by FAO and the University of the Philippines in the Visayas. The BBRMCI is a grouping of the municipalities of Anilao, Banate, Barotac Nuevo and Barotac Viejo while the SICRMC is a grouping of the municipalities of Guimbal, Miagao, Oton, San Joaquin and Tigbauan. The advantage of establishing coastal resource management councils is that several municipalities can pool their meagre funds for protecting and conserving their fishery resources. The formation of a management council can eliminate boundary disputes between municipalities because their municipal waters are combined and treated as a single management unit. The objectives of this livelihood project were to develop micro-enterprises for fishers and their families within the jurisdictions of Southern Iloilo and Banate Bay and to conduct on-the-job training for fishers and their families in support of micro-enterprises in the field of fish processing, fish and mollusc culture and fish marketing.

18.1 Development of micro-enterprises

The livelihood project started with a consultation with officials of BBRMCI, SICRMC and local government units to identify *barangays* and beneficiaries that will be involved in the micro-enterprises. The approach was to develop at least one micro-enterprise in each municipality to serve as a model. The villages and associations identified as participants in the respective municipalities are shown in Table 1.

Table 1: Participants in micro-enterprise development project by municipality

Municipality	*Participants/beneficiaries*
Anilao	Anilao Fish Processors Association
Banate	Poblacion Fish Peddlers Association
Barotac Nuevo	Lamintao Small Fisherfolk Association
Barotac Viejo	San Francisco Small-scale Fishermen Association
Miagao	Miagao Salt Producers Cooperative
Oton	Alegre Fish Vendors Association
San Joaquin	Sumakwelan Fisherfolk Association
Tigbauan	Barangay Council of Barangay Atabayan

Meetings were conducted with the project participants on what kind of micro-enterprise they wanted to get involved with and on the support they needed for the livelihood project. The micro-enterprises identified in the consultation process are shown in Table 2.

Table 2: Micro-enterprises by municipality

Municipality	*Participants/beneficiaries*
Anilao	Fish processing *(fish balls and fish bola-bola)*
Banate	Fish vending
Barotac Nuevo	Shrimp paste *(Bagoong/ Ginamos)* production
Barotac Viejo	Green mussel and oyster culture
Miagao	Salt making
Oton	Fish vending
San Joaquin	Fish sauce *(Patis)* production
Tigbauan	Shrimp paste *(Bagoong/ Ginamos)* production

The participants in the livelihood projects were men and women living in coastal areas. The majority of them were poor. However, some project participants in Barotac Nuevo and Tigbauan belonged to the middle and upper economic strata of their villages. They participated in the project because of their long experience in buying and selling of fishery products. Some groups of project participants were exclusively composed of women like the Anilao Fish Processors Association and the Poblacion Fish Peddlers Association.

In the development of the micro-enterprises, the main linkages and cooperation was established between the BBRMCI, the SICRMC, the LGUs and the University of the Philippines in the Visayas (UPV). Faculty members and researchers of the College of Fisheries and Ocean Sciences and the College of Management of the UPV provided most of the technical training for the beneficiaries of the livelihood projects. Appendix A shows the list of resource persons and technical consultants of the project.

The following training courses were conducted for the different micro-enterprises based on needs assessment and as requested by the beneficiaries:

Anilao – fish processing:

- how to start a business;
- marketing strategies;
- fish ball production: formulation, packaging and costing;
- good manufacturing practices.

Banate – fish vending:

- accounting for non-accountants;
- sales and salesmanship.

Barotac Nuevo – shrimp paste production:

- quality improvement and processing alternatives for shrimp paste production;
- good manufacturing and personal hygiene;
- production of flavoured shrimp paste;
- product packaging and labelling.

Barotac Viejo – green mussel and oyster culture:

- methods of mussel and oyster culture;
- raft construction for mussel culture;
- sales and salesmanship.

Miagao – salt making:

- pre-membership education seminar for cooperatives;
- iodized salt making: importance and proper handling;
- salt iodization process;
- product packaging.

Oton – fish vending:

- values formation;
- basic marketing skills.

San Joaquin – fish sauce production:

- construction of village- level production facility;
- fish sauce production;
- product costing and record keeping.

Tigbauan – shrimp paste production:

- processing of fermented fish products;
- value adding through shrimp paste production;
- product packaging;
- good manufacturing practices and standard sanitary operating procedures.

18.2 Constraints and issues

The primary constraint encountered in micro-enterprise development was the lack of skills in product development, packaging and marketing of finished fishery products. In shrimp paste production, new methods were introduced that can serve as an alternative for the traditional method. For the Anilao Fish Processors Association, new product forms were introduced to expand the variety of products and to gain access to a wider market. In fish sauce production, training was provided for the production, packaging and marketing of products.

In fish vending, the major obstacle encountered was the lack of capital and the difficulty of accessing short-term credit from lending institutions. To enable the project participants to start their micro-enterprise, the project provided working capital in the form of loans to some members, which they later repaid to the association. The loan repayments served as revolving capital of the association.

The members of the Miagao Salt Producers Association are planning to register as a cooperative. The project provided training and other assistance to the association to prepare the members for the registration of their association as cooperative with the Cooperative Development Authority.

18.3 Crucial steps in micro-enterprise development

A crucial step in micro-enterprise development is the coordination with and involvement of officials of the local government units (LGUs). The LGU officials, especially the municipal agriculturist or municipal fishery officer, recommended fisherfolk organizations with a good track record in project implementation. This gave the micro-enterprise promoted by the project a greater chance of success. Involving the municipal officials created a sense of ownership so that they will continue helping and monitoring the micro-enterprise once external funding support has ended.

Another crucial step in micro-enterprise development is the participation of the beneficiaries in the development and implementation of the micro-enterprise. The beneficiaries should have a direct say on what micro-enterprise they want to establish and what training and other support should be extended to them. There will be a greater chance for a micro-enterprise to be sustainable if there is active participation of the beneficiaries from the very beginning.

Training of the beneficiaries is also essential for the production process, packaging and marketing of the finished product. Organizational skills and development of proper work attitudes of the beneficiaries are also crucial for the success of the micro-enterprise.

18.4 Lessons learned

To transform a traditional fisher into an entrepreneur is not an easy task. It will take more than a year for most micro-enterprises to become viable. This requires technical training and development of a proper attitude on the part of the members of fishers' associations. In the Anilao fish processing project, the project team was not satisfied with the performance of the group of project participants because of the non-cooperation and lukewarm attitude of some members of the association. One strategy tried by the project to overcome this problem was to give full support to the few hardworking and enterprising members of the group so that they can succeed as entrepreneurs and employ other members of their communities as labourers in their micro-enterprises later on.

PART 4: PILOT PROJECT ON MICRO-ENTERPRISE DEVELOPMENT IN SOUTHERN ILOILO AND BANATE BAY

1. Context and objectives of project

The coastal zone plays a very significant role in the Philippine economy and the lives of Filipinos. It is a source of food, shelter and livelihood of numerous inhabitants residing in the coastal area. The importance of the coastal zone in the Philippines can be seen from the following facts: more than 50 percent of animal protein intake of Filipinos is derived from marine fisheries; 62 percent of the population lives in the coastal zone; almost all major cities and 54 percent of the 1 541 municipalities in the country are coastal.[1]

The Philippine coastal zone is confronted with numerous challenges like the overexploitation of resources, the degradation of coastal habitats and the prevalence of poverty among fisherfolk. With regard to the production from marine capture fisheries, empirical studies have shown evidence of biological and economic overfishing of both pelagic and demersal fish stocks.[2] The degradation of habitats has been documented for coral reefs and mangrove areas. More than 70 percent of all coral reefs have been subjected to some damage[3] while the forested mangrove area has decreased from 450 000 ha in 1918 to 120 000 ha in the late 1990s.[4] The deteriorating resource base has caused a decline in the economic conditions of small-scale fishers, which are characterized by the fact that an estimated 80 percent of fisherfolk households are living below the poverty threshold.[5]

Integrated coastal management (ICM) has been recommended to address the many problems in the coastal zone.[6] ICM is a comprehensive and integrated approach involving multi-sectoral collaboration and community participation for the sustainable use, development and protection of coastal and marine areas and resources. The overall goal of ICM is to improve the quality of life of human communities, which depend on coastal resources, while

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[1] Department of Environment and Natural Resources, Bureau of Fisheries and Aquatic Resources of the Department of Agriculture and Department of Interior and Local Government. 2001a. *Philippine Coastal Management Guidebook No.1: Coastal Management Orientation and Overview*. Coastal Resource Management Project of the Department of Environment and Natural Resources. Cebu City. Philippines. 58 p.

[2] Overfishing has been highlighted by a number of publications, i.e. Dalzell, P., Corpuz, P., Ganaden, R. & D. Pauly. 1987. *Estimation of maximum sustainable yield and maximum economic rent from the Philippine small pelagic fisheries*. Bureau of Fisheries and Aquatic Resources Technical Paper Series Volume 10. No.3. 23p; Trinidad, A.C., Pomeroy, R.S., Corpuz, P. & M. Aguero. 1993. *Bioeconomics of the Philippine small pelagics fishery*. ICLARM Technical Report No. 38. International Center for Living Aquatic Resources Management. Manila, Philippines; Barut, N., Santos, M. & L. Garces. 2004. Overview of the Philippine marine fisheries, pp. 22-31. *In:* Department of Agriculture – Bureau of Fisheries and Aquatic Resources. *In turbulent seas: the status of Philippine marine fisheries.* Coastal Resource Management Project. Cebu City, Philippines. 378 pp.; Barut, N., Santos, M, Mijares, L., Subade, R., Armada, N. & L. Garces. 2003. Philippine coastal fisheries situation, pp. 885 - 914. *In:* Silvestre, G., Garces, L., Stobutzki, I., Ahmed, M., Valmonte-Santos, R., Luna, C., Lachica-Aliño, L., Munro, P., Christensen, V. & D. Pauly, eds. *Assessment, Management and Future Directions for Coastal Fisheries in Asian Countries. WorldFish Center Conference Proceedings 67*. 1120 pp.

[3] Gomez, E.D., Aliño, P.M., Yap, H.T. & W.Y. Licauayan. 1994. *A review of the status of Philippine reefs. Marine Pollution Bulletin.* 29(1-3): 62 - 68.

[4] Department of Environment and Natural Resources. 1988. *Mapping of the natural conditions of the Philippines, Final Report.* Swedish Space Corporation. Solna, Sweden. Also: Department of Environment and Natural Resources, Bureau of Fisheries and Aquatic Resources of the Department of Agriculture, Department of Interior and Local Government. 2001b. *Philippine Coastal Management Guidebook No.5: Managing coastal habitats and marine protected areas.* Coastal Resource Management Project of the Department of Environment and Natural Resources. Cebu City. Philippines. 106 pp.

[5] Cruz-Trinidad, A. 2003. Socioeconomic and bioeconomic performance of Philippine fisheries in the recent decades, pp. 543 - 576. *In*: Silvestre, G., Garces, L., Stobutzki, L., Ahmed, M., Valmonte-Santos, R., Luna, C., Lachica-Aliño, L., Munro, P., Christensen. V. & D. Pauly, eds. *Assessment, Management and Future Directions for Coastal Fisheries in Asian Countries. WorldFish Center Conference Proceedings 67,* 1120 pp.

[6] Cicin-Sain, B. & R. Knecht. 1998. *Integrated coastal and ocean management: concepts and practices*. Island Press. Washington. USA. 517 pp. Also: Courtney, C. & A. White. 2000. *Integrated coastal management in the Philippines. Testing new paradigms* Coastal Management, 28(1): 39-53.

maintaining the biological diversity and productivity of coastal ecosystems. An important component of ICM is the provision of supplemental and alternative livelihoods and the diversification of the sources of income through development of micro-enterprises, in order to alleviate the poverty of small-scale fishers.[7] The promotion of supplemental and alternative livelihoods is expected to lessen the pressure on coastal resources and improve the economic condition of the fisherfolk.

In the Philippines, micro-enterprises and small enterprises play an important role in creating jobs and providing income for the majority of Filipinos. Micro-enterprises are defined as businesses that have assets below PHP3 million employing less than 10 people while small-scale enterprises are defined as enterprises with assets between PHP3 to 15 million employing 10 to 99 people. In 2004, there were about 820 960 operating business establishments in the Philippines generating 6 million jobs. Ninety-one percent of these businesses are classified as micro-enterprises and small enterprises. They employ 62.5 percent of the total labour force.[8]

The Philippine Government believes that micro- and small-scale enterprises could be an effective tool for providing employment, alleviating poverty in rural areas and for advancing the country's economic development.[9] Micro-enterprise development has been found to work well with people having no or very limited access to the traditional banking sector such as farmers and fishers. Having no means to access funds to be used as start-up capital, these marginalized people have to work with meagre resources originating from their personal savings or from an informal creditor. This process teaches them to save and become self-sufficient while earning additional income at the same time.

FAO, in close cooperation with the College of Fisheries and Ocean Sciences of the University of the Philippines in the Visayas, provided technical assistance and funds to the Banate Bay Resource Management Council Inc. (BBRMCI) and to the Southern Iloilo Coastal Resource Management Council (SICRMC) to support activities in the field of micro-enterprise development and related microfinance support. The project implemented the following activities:

- identification of livelihood and micro-enterprise opportunities and sources of credit and microfinance support for fishers within the jurisdiction of the BBRMCI and the SICRMC in the province of Iloilo;
- conduct of on-the job training of fishers in micro-enterprise development in aquaculture, fish processing and fish marketing, the preparation of business plans, the proper use of credit and microfinance facilities as well as provision of extension services in support of these micro-enterprises.

It is hoped that outputs from this project will be used in the development of micro-enterprises in other parts of the Philippines and in other parts of the world where integrated coastal management is being implemented.

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[7] Luna, C., Silvesre, G., Carreon, M., White, A. & S. Green. 2004. Sustaining Philippine marine fisheries beyond "turbulent seas": a synopsis of key management issues and opportunities, pp.345-358. *In*: Department of Agriculture – Bureau of Fisheries and Aquatic Resources. *In turbulent seas: the status of the Philippine marine fisheries.* Coastal Resource Management Project. Cebu City, Philippines. 378 pp. Also: International Institute of Rural Reconstruction. 1995. *Livelihood options for coastal communities*. International Institute of Rural Reconstruction. Silang Cavite. Philippines. 77p.

[8] Department of Trade and Industry. 2004. *Current situation of SMEs and the SME development plan*. Manila. Philippines.

[9] National Economic Development Authority. 2004. *The Medium-Term Philippine Development Plan. 2004 – 2010.* Pasig City. Philippines.

2. The role of coastal resource management councils

Coastal resource management councils (CRMCs) have been established by local government units in many parts the Philippines to improve the protection and management of coastal resources. The institution of the CRMC has legal support and is encouraged in Philippine laws such as the Local Government Code of 1991 and the Fisheries Code of 1998. CRMCs have been established by several municipalities to better manage large bodies of water, over which these municipalities have jurisdiction, and in areas with long contiguous coastlines. There are advantages in establishing CRMCs because several municipalities can pool their meagre funds for the protection of their fishery resources. CRMCs can also eliminate boundary disputes between municipalities because their municipal waters are combined and treated as a single management unit. Two CRMCs, the Banate Bay Resource Management Council Inc. (BBRMCI) and the Southern Iloilo Coastal Resource Management Council (SICRMC) were selected to participate in the micro-enterprise project. These two CRMCs have been active in implementing projects that are beneficial to the fisherfolk within their jurisdiction.

2.1 Banate Bay Resource Management Council Inc.

The Banate Bay Resource Management Council Inc. (BBRMCI) was initiated by the mayor of the municipality of Anilao in the Province of Iloilo. The municipality, similar to most coastal areas in the Philippines, is confronted with problems of overexploitation of fishery resources, destruction of coastal habitats, illegal fishing activities and poverty of small-scale fishers. The mayor's awareness of the need for coastal resource management and the passage of the Local Government Code of 1991, which provided more powers and authority to local government units, encouraged him to form a coastal resource management council together with the nearby municipalities of Barotac Nuevo and Banate. A series of consultations and dialogues started in November 1995, which culminated in the signing of a memorandum of agreement in February 1996, under which the Banate Bay Resource Management Council Inc. (BBRMCI) was established. The municipality of Barotac Viejo later also joined the BBRMCI.

The BBRMCI has a board of trustees (BOT) composed of the three mayors; an executive director; heads of operational units; representatives of municipal offices such as the municipal legislative body, the municipal planning office, the municipal fishery office; representatives from the provincial legislative body; the Bureau of Fisheries and Aquatic Resources (BFAR) and representatives of non-governmental organizations (NGOs) in the participating municipalities. The board is the policy-making body of the council and has been tasked to prepare an integrated management plan of the bay and to promulgate rules and regulations for the preservation and utilization of the fisheries and marine resources of the bay. A chairperson heads the BOT and presides over its meetings. An executive director executes the policies and rules of the BBRMCI and is responsible for its day to day affairs. The BBRMCI has six operational units that facilitate the implementation of the programmes and projects of the council. Each participating municipality appropriates funds for the operation of the BBRMCI.

The BBRMCI has been responsible for conducting a series of information campaigns on better management of the bay and for organizing fisherfolk into associations and cooperatives. It was also able to implement an integrated zoning plan for Banate Bay and organized a *Bantay-Dagat*, a community-based law enforcement unit, which implements the unified fishery ordinance for the bay. The BBRMCI also coordinated with different government agencies in the establishment of livelihood programmes. In 1998, the BBRMCI won the *Galing Pook* Award, a joint award of the national government and private sector, for its excellence and innovation in local governance.

2.2 Southern Iloilo Coastal Resource Management Council

The Southern Iloilo Coastal Resource Management Council (SICRMC) was started when the University of the Philippines in the Visayas (UPV) and the mayors of five coastal municipalities namely, Guimbal, Miagao, Oton, San Joaquin and Tigbauan, signed a memorandum of understanding in April 2001 to cooperate towards the sustainable development of coastal resources in Southern Iloilo. The UPV, through the College of Fisheries and Ocean Sciences - Institute of Fisheries Policy and Development Studies (CFOS-IFPDS), assisted the local government units (LGUs) in the collection of baseline data on resources and users of the coastal area. The CFOS-IFPDS also assisted in the formation of a technical working group among the LGUs in preparation for the establishment of a coastal resource management council.

The UPV provided technical assistance in the formulation of a coastal resource management plan for southern Iloilo. It pledged to coordinate with LGUs, government and non-governmental agencies in the planning, implementation and monitoring of the coastal resource management plan of southern Iloilo. Each LGU assigned two personnel to the technical working group and gave full support to the planning and implementation of a coastal resource management council and a coastal resource management plan.

On 10 February 2002, a memorandum of agreement was signed by the mayors of the municipalities of Guimbal, Miagao, Oton, San Joaquin and Tigbauan creating the Southern Iloilo Coastal Resource Management Council (SICRMC). The objectives of the council are to help with the restoration of the productivity of the coastal waters of southern Iloilo; to strengthen the capabilities of the local government units for the management of their coastal resources; to educate the fisherfolk in the sustainable utilization of their coastal resources and to develop and promote alternative livelihood schemes for fisherfolk.

3. Identification and development of micro-enterprises

The FAO-supported livelihood project was started in consultation with the officials of the BBRMCI, the SICRMC and the concerned local government units (LGUs) to determine the *barangays* (villages) and project participants, which were to be involved in the micro-enterprise development activities. The approach was to develop at least one micro-enterprise for an organized group, which would then serve as a model in the municipality. The following participants were identified from each municipality, i.e. Anilao: Anilao Fish Processors Association; Banate: Poblacion Fish Peddlers Association; Barotac Nuevo: Lamintao Fisherfolk Association; Barotac Viejo: San Francisco Small Fishermen Association; Guimbal: Cabasi Fisherfolk Association; Miagao: Miagao Salt Producers Association; Oton: Alegre Fish Vendors Association; San Joaquin: Sumakwelan Fisherfolk Association and Tigbauan: the Barangay Council of Barangay Atabayan. This was followed by a series of meetings with the project participants to determine what kind of micro-enterprises they wanted to get involved with and the support they needed. The following micro-enterprises were identified in the consultation process: Anilao: fish ball production; Banate: fish vending; Barotac Nuevo: shrimp paste production; Barotac Viejo: oyster and mussel culture; Guimbal: fish vending; Miagao: salt iodization; Oton: fish vending; San Joaquin: fish sauce production and Tigbauan: shrimp paste production.

The choices of micro-enterprises were influenced by the respective LGU development plans, which focussed on the utilization of the municipality's major products or harvests. In addition, a major factor for choosing a particular micro-enterprise was a low level of risk. Many of the micro-enterprises which were chosen already existed in neighbouring villages

and project participants were generally familiar with the activities involved. The task of the project was to develop new and improved products and look for new markets.

4. Training

The training programmes conducted in the context of the project focused on enhancing the capacity of the project participants to operate their micro-enterprises efficiently, to develop their skills in product innovation and development and in expanding the markets for their products. The training sessions responded to the need of the project participants, which were expressed during the consultative meetings as well as to the recommendations of the technical consultants assigned to each micro-enterprise. A pool of consultants and resource persons from the UPV and LGUs were tapped for these training courses, which can be grouped into training related to the operation of micro-enterprises and training related to product development. Unfortunately, not all project participants were able to participate in these training courses due to limitation of time and resources.

4.1 Training on the operation of micro-enterprises

4.1.1 Starting a business

A one-day training workshop for the Anilao Fish Processors Association on starting a small-scale business enterprise was conducted by Prof. Benmar Panaguiton, Assistant Professor of the UPV College of Management and Director of the UPV Office of Extension. The workshop dealt with the different aspects of a business, i.e. marketing, production, management and finance and ended with the preparation of a simple business plan as the final output. One of the objectives of the workshop was to introduce the project participants to the rewards and risks of being an entrepreneur. To make them aware of what it takes to become an entrepreneur, the project participants were subjected to two sets of personal assessments. The training also included a discussion on what kind of business was right for the project participants. The topics touched on the types of business, on choosing a business location, on different sources of capital and how to obtain it and on the process of registering a business.

4.1.2 Cooperative formation

The salt producers of Miagao signified their intention to transform their association into a cooperative. As a requirement for the registration of their cooperative, members of an association must undergo a pre-membership education seminar for cooperatives. All salt producers participated in a comprehensive three-day seminar conducted by Mr Federico Monsale Jr, cooperative development officer of Miagao. The seminar discussed the definition of a cooperative, how it is formed and who can become a member. It also covered the duties and rights of the cooperative members, the functions of its officers, the organizational structure of a cooperative and the various services that a cooperative can offer as well as its management and source of capitalization.

In Oton, Mrs Ma. Eden Borbon and Mrs Maria Rosena Jaspe of the municipal agriculture office conducted a seminar on cooperatives and basic business management. The resource persons described the nature and aims of a cooperative, cooperative philosophy, principles and practices.

4.1.3 Accounting for non-accountants

The project participants from Anilao, Banate and Barotac Viejo attended a one-day training session on accounting for non-accountants. Prof Ma. Piedad A. Palacios and Prof Mary Rose

Rebueno, faculty members of the UPV College of Management, conducted the training at the BBRMCI Training Centre. The training exposed the participants to the basics of accounting, the analysis of transactions and their proper recording. They also had a hands-on training on journalizing of accounts and proper accounting of income as well as on the preparation of basic financial statements. As part of the training, the basics of how to cost a product and to calculate its selling price were also taught. With the financial statements they had prepared, the trainees analyzed financial statements by computing ratios for the different financial indicators like profitability, solvency and liquidity. The objective of the financial statement analysis was to help the project participants making sound management decisions based on the results of their operations as reflected in the financial statements.

4.1.4 Sales and salesmanship

Prof Jose Neil Hortillo of the UPV College of Management conducted a seminar on sales and salesmanship for the project participants from Anilao, Banate and Barotac Viejo. Prof Hortillo described ways of how to conduct sales calls and how to close transactions. He elaborated on the selling concept as a part of a decision-making process, on different ways to reach the customers and on crucial steps to successful selling. The training also taught how to motivate a sales force, prepare a sales plan and to conduct sales interviews.

4.2 Training on product development

4.2.1 Fish ball production

During the training session on how to start a business, the Anilao Fish Processors Association proposed to produce fish balls. The members of the association considered fish balls a product that is affordable and ensures a quick return on investment. The association conducted a production and marketing trial run during their town fiesta using their own formula for fish ball making. While the group made a small profit from the three-day sale, the members of the group admitted that they needed to improve the quality of their fish balls.

The FAO-supported micro-enterprise development project tapped the expertise of Mrs Ernestina Peralta, a researcher from the UPV Institute of Fish Processing Technology (IFPT). Mrs Peralta recommended a new formula for making fish balls locally referred to as *bola-bola*. Mrs Peralta also gave a lecture on product labelling and told the group members what information must be placed on the label as mandated by the nutrition labelling act. Following the recommendations of Mrs Peralta, the members of the association produced improved fish balls and fish *bola-bola*. The association also expanded their market and sold to the cooperative store of the Anilao High School, which they now supply on a regular basis.

4.2.2 Shrimp paste production

The fisherfolk from Tigbauan and Barotac Nuevo chose to improve their existing shrimp products through value addition and better packaging. The technical consultants were Dr Erlinda Panggat and Mrs Mercy Quilantang, Professor and researcher, respectively, at the UPV-IFPT. Dr Panggat conducted a half-day seminar on value adding and appropriate processing and packaging technologies for fermented fish products. The seminar covered an explanation of the process of fermentation, a description of raw materials that can be used other than small shrimps, appropriate processing and packaging techniques, principles of value adding as well as other techniques, which can be used for obtaining high quality fermented products. The project participants also visited the IFPT laboratories to observe the facilities and methods for shrimp paste making used at the IFPT.

Dr Panggat gave a half-day seminar on good manufacturing practices and standard sanitary operating procedures at the Barangay multi-purpose hall. She discussed health hazards

associated with contamination of shrimp paste and sanitary requirements and practices for the workers outside and inside the processing area. Hands-on demonstrations for processors were given by the resource persons on the standard shrimp paste processing method, on value addition like producing the spicy adobo shrimp paste and on product packaging and labelling. Mrs Peralta also demonstrated the production of flavoured shrimp paste and gave a lecture on good manufacturing practices and personal hygiene of processors.

4.2.3 Fish sauce production

The Sumakwelan Fisherfolk Association of San Joaquin decided to undertake fish sauce production. During the peak fishing season, the abundance of fish results in a very low price. The members of the association thought that the production of fish sauce during the peak fishing season will give higher value to their fish catch and increase their income. The FAO-supported project provided materials whereas the members of the association provided labour for the construction of a village-type fish sauce processing facility.

The technical consultant of the fish sauce micro-enterprise development project, Mrs Rose Mueda, a researcher of the UPV – IFPT, conducted training and hands-on demonstrations of the processing of fish sauce with emphasis on the hygienic process and on producing a clean and safe product. The first half-day training was on a laboratory scale using 5 kg of fish. The second training conducted for a whole day was on a pilot scale using 50 kg of fish. The fish was fermented in the concrete tank of the fish processing facility. Additional training was conducted on record keeping, costing and pricing and on packaging and labelling with the objective to improve the operation and increase the profitability of the fish sauce micro-enterprise.

4.2.4 Salt iodization

Salt making is one of the livelihood projects supported by the municipal government of Miagao. In addition to providing additional income for fishers, the municipal government wants to preserve their traditional salt making method to promote eco-tourism. During a consultation with the Miagao Salt Producers Association, the members of the association expressed the need for training on the iodization of the salt they produce. Salt iodization is a requirement of Republic Act No. 8172, which mandates that all table salt sold in the market must be iodized and all establishments for the manufacture and preparation of food must use iodized salt.

For the salt iodization micro-enterprise, the technical consultant was Dr Aklani Rose Hidalgo, Associate Professor of the UPV–IFPT. Dr Hidalgo gave a lecture titled “Iodized salt: its importance and proper handling” to the salt producers and other members of the community. This was followed by a demonstration of the process of salt iodization and a hands-on training for all members of the association. Each salt producer was able to iodize 10 kg of salt, which were packed in ¼, ½ and 1 kg plastic bags and labelled. Dr Hidalgo also gave recommendations on improving the quality of the salt produced in the municipality and on packaging and marketing of iodized salt.

4.2.5 Mussel and oyster culture

The San Francisco Fisherfolk Association of Barotac Viejo signified their intention to culture mussels and oysters because there is a demand for shellfish in their town, which is presently met by shellfish from the nearby Province of Capiz. The fisherfolk of San Francisco observed spats of oysters and mussels clinging to various substrates in their coastal area and believed shellfish culture could be a profitable micro-enterprise.

Dr Carlos Baylon, a Professor of the UPV Institute of Aquaculture and Technical Consultant of the micro-enterprise, gave a lecture on the different methods of culturing mussels and oysters. The raft culture method was preferred by the association because of its high yield and because this method would not contribute to the siltation of the culture site. Dr Baylon also gave a lecture on the raft culture method and explained the construction of the rafts. The project provided materials whereas the members of the association provided labour for the construction of the first culture raft. With assistance from the FAO-supported project, two additional culture rafts were constructed owing to the high potential of the micro-enterprise as observed in the high attachment rate of oysters and mussels in the first raft.

4.3 Assessment of training sessions

An assessment was made after the conduct of the training courses to determine the relevance of the topics discussed and the ability of the resource persons to impart knowledge and skills to the project participants. The assessment was made by Mr Arcsel Gerard Sagge, research assistant of the project, through interviews of selected participants of the training sessions and workshops. The interviewed participants mentioned that the resource persons were very patient in explaining the topics and were able to answer satisfactorily the questions asked by the trainees. The participants also said that they were able to understand the subject matter because the lectures had been followed by demonstrations and hands-on training. The following activities implemented by the project participants are proof that the training sessions were effective and put to good use:

- the Miagao Salt Producers Association was able to complete their registration with the Cooperatives Development Authority;
- the members of the San Francisco Small Fishermen Association have started harvesting their mussels and oysters;
- the shrimp paste producers of Barotac Nuevo and Tigbauan are now employing hygienic methods for the preparation of their basic ingredients as recommended by the resource persons and have started to produce flavoured shrimp paste;
- the fish vendors of Banate and Oton have fully repaid their loans;
- the Anilao fish processors are now producing fish balls and *fish bola-bola* on a regular basis and are saving a part of their profits to buy a heavy duty blender so that production can be expanded.

5. Preparation of business plans

Business plans for the different micro-enterprises were prepared with the assistance of technical consultants from the UPV College of Management. The business plans for fish processing (Anilao), fish vending (Banate and Oton), salt iodization (Miagao), shrimp paste production (Barotac Nuevo and Tigbauan), oyster and mussel culture (Barotac Viejo) and fish sauce production (San Joaquin) are shown in Appendix B. Business plans can be used for securing credit or financial assistance for the different micro-enterprises. The different aspects of business plans such as marketing, production and financial aspects are discussed below.

5.1 Marketing aspects

The initial target markets and clients of the micro-enterprises promoted by the project are the members of their local communities and nearby municipalities and the primary consumers within these communities and municipalities. Once the micro-enterprises have achieved and are able to maintain sufficient product quality, markets can be expanded to included populated urban areas like Iloilo City and Metro Manila. The identified markets and the possible marketing channels of the micro-enterprises are shown in Table 1.

The initial distribution of the project participants' products will be done through direct selling by the members themselves. When the micro-enterprises are able to produce a sufficient quantity of products, these will be retailed in stores and supermarkets. In the case of oysters, direct contract selling to hotels and fine restaurants in urban areas is the preferred marketing channel.

5.2 Production and technical aspects

Raw materials, supplies and suppliers: the raw materials needed for the different micro-enterprises are readily available in the respective communities. In Anilao, the raw fish and necessary ingredients to produce and package fish balls and fish *bola-bola* can be sourced from the town's public market. For the shrimp paste production, the basic raw materials are the sergestid shrimps, which are seasonally abundant in the coastal communities of Barotac Nuevo and Tigbauan. The bottles for packaging the value-added shrimp paste can be obtained in Iloilo City, which is less than an hours' drive from the processing site.

The salt water used for salt production can be obtained along the shorelines of Miagao. The bamboos used as drying facility for salt making are abundantly grown in the area. Plastic bags and labels for packing the iodized salt are obtainable in Iloilo City. For the fish vending operation, the fish sold by the project participants in Banate and Oton is unloaded in their municipalities all year round. Should the supply not be sufficient, fish can be bought from the fishing port of Iloilo City.

Equipment: no sophisticated equipment is needed for the micro-enterprises supported by the project. In the fish processing project of Anilao, the kitchen utensils used are already available with the project participants. In future, processors may opt to use an electric sealer for packing their products but the traditional way of using candles or kerosene lamps suffices momentarily. The freezer for storage of their products is available at the processing site provided by the local government. For the shrimp paste production, a grinder will only be required when big quantities will be produced. Currently, the traditional method of preparing shrimp paste with the use of mortar and pestle suffices. For oyster and mussel culture and iodized salt making, bamboos are used, which are abundant in the area. The bamboos are used for the construction of the raft for collecting oyster and mussel seeds as well as for the grow-out of the shellfish.

The costs of the initial investments are shown in Table 2.

Labour and utilities: the manufacturing processes of the products are simple and described in the business plans. Members of groups and associations, who already have the necessary skills, provide the necessary humanpower for the production process. There is an ample supply of utilities to support the production and distribution of the products. Each municipality has abundant water supply, if not a good water system. There is sufficient electrical power supply to run the production equipment and the storage facilities. The electric cooperatives supplying electricity to the communities had minimal major power interruptions during project implementation.

The locations of the micro-enterprises are easily accessible through national and local roads and the use of buses, jeepneys and tricycles. Should the project participants decide to distribute their products in other parts of the country, the existing airport and shipping ports would provide the needed logistics. With regard to communication with other members of the association, suppliers, clients and agents, this is within reach as there are two big telephone companies supplying landline facilities and mobile communications at economical rates.

Table 1: Micro-enterprises, markets and marketing channels

Micro-enterprise	*Identified market*	*Proposed marketing channels*
Fish ball production	Households Individuals Students	House-to-house selling Distribution through stores within the local community and nearby municipalities and eventually in stores and supermarkets in the city of Iloilo and in other major cities in the country Concession in school canteens
Fish vending	Households	Direct selling to households within the local community, the neighboring municipalities and cities like Iloilo
Shrimp paste production	Households Restaurants	Direct selling to households within the local community and nearby municipalities Whosesalers and retailers in different provinces of Luzon, Visayas and Mindanao
Oyster and mussel culture	Households Restaurants and hotels	Direct selling to consumers within the local community and nearby municipalities Contract selling to fine restaurants and hotels in Iloilo City and eventually in Metro Manila and Metro Cebu
Salt iodization	Households	Direct selling to households within the local community and nearby municipalities Retailing in stores and supermarkets in the city of Iloilo and nearby provinces
Fish sauce production	Households	Direct selling to households within the local community and nearby municipalities Retailing in stores and supermarkets in the city of Iloilo and nearby provinces

Table 2: Initial investment cost of micro-enterprises

Micro-enterprise	*Initial investment*
Fish ball production	PHP21 000
Fish vending	PHP 2 600
Shrimp paste production	PHP48 000
Oyster and mussel culture	PHP30 000
Salt making	PHP42 500
Fish sauce production	PHP21 500

5.3 Technical assistance

Technical assistance in support of micro-enterprises can be requested from a number of agencies.

Department of Trade and Industry (DTI): this agency can assist the project participants in investment facilitation, trade promotion, export and small and medium enterprise (SME) development. Among its various services, DTI can be requested to assist in product design and packaging as well as in marketing. As part of its SME development, it can facilitate financing and guarantee programmes and human resource development.

Department of Science and Technology (DOST): one of the functions of the DOST is to assist and undertake technological services needed by the different sectors of society. The project participants can request assistance from DOST on technologies both indigenous and imported that can be used for commercial purposes.

Technical Education and Skills Development Authority (TESDA): the TESDA's mandate is to develop the skills of the country's human resources. The project participants have to acquire the necessary technical skills to support their enterprises and might eventually need additional humanpower to run their operations. The TESDA can be tapped to conduct skills training for microentrepreneurs and their co-workers.

One of TESDA's programmes that can be of help to the project participants is also geared towards enterprise development, i.e. the community-based training enterprise development (CBTED). This programme is the fusion of community-based training and enterprise development. The training employs a participatory and consultative approach. The participants are also asked to identify enterprise development opportunities and skills training requirements.

Bureau of Fisheries and Aquatic Resources (BFAR): the BFAR offers support services for the fisheries sector with the objective to increase productivity and income of fisherfolk. It also helps in programme and project formulation as well as in project coordination, monitoring and evaluation. Fisherfolk livelihood development is one of the priority programmes of BFAR. The livelihood programme provides fisherfolk with appropriate hands-on training on various technologies for the culture of fish and other aquatic organisms including seaweeds; on improved fishing methods such as the construction and proper use of passive fishing gears; on post-harvest methods and value-addition as well as on resource management and on the protection of the aquatic environment. BFAR complements its training programmes with funding and helps in securing funds from other sources. The BFAR's other programmes include the so-called *Ginintuang Masaganang Ani* (GMA) fisheries programme, offshore fisheries development, *Bantay-Dagat*, marketing assistance, establishment of mariculture parks, HACCP implementation and aquasilviculture.

Iloilo State College of Fisheries (ISCOF): the ISCOF is an academic institution, which provides higher technological, professional and vocational instructions in fisheries and marine sciences. ISCOF can be tapped for training in fisheries development. It also conducts research and advanced studies in fisheries development and performs fisheries extension work.

Southeast Asian Fisheries Development Center Aquaculture Department (SEAFDEC AQD): this institution is an autonomous intergovernmental body, which was established as a regional treaty organization in 1967 to promote fisheries development in Southeast Asia. Its mission is to develop the fishery potential in the region through training, research and information services and to improve the food supply through rational utilization and development of fisheries resources. The agency can be tapped by the project participants for knowledge and skills development in the areas of seed production and grow-out methods for milkfish,

shrimps, mangrove crabs, snappers, groupers, seaweeds and abalone farming. All these agencies are all located in Iloilo City except for ISCOF and SEAFDEC AQD. The addresses and contact numbers of these institutions are shown in Table 3.

Table 3: Agencies and institutions providing technical assistance for micro-enterprise development

Agency/institution	*Address and phone numbers*
Department of Trade and Industry (DTI)	Aduana Street Iloilo City (033) 3350083 (033) 3350060
Department of Science and Technology (DOST)	Magsaysay Village Lapaz, Iloilo City (033) 3200907
Technical Education and Skills Development Authority (TESDA)	Zamora Street Iloilo City (033) 3362681
Bureau of Fisheries and Aquatic Resources (BFAR)	M.H. del Pilar Street Molo, Iloilo City (033) 3377650
Iloilo State College of Fisheries (ISCOF)	Baranggay Tiwi Barotac Nuevo, Iloilo (033) 3612413
Southeast Asian Fisheries Development Center Aquaculture Department (SEAFDEC AQD)	Tigbauan, Iloilo (033) 3362937 (033) 3362965

Table 4: Registration requirements for micro-enterprises

Activity	*Agency/institution*	*Fees*
Registration of business name.	Department of Trade and Industry (DTI)	PHP 300
Registration to legitimize existence as a cooperative.	Cooperative Development Authority (CDA)	PHP 1 000
Securing of tax identification number and registration of the books of accounts as well as printing of business documents like official receipts	Bureau of Internal Revenue (BIR)	PHP 600
Securing local clearances and business permits	Municipal office, where enterprise is located	PHP 1,000
Registration as an employer in the government's social security programme	Social Security System (SSS)	None
Securing membership in the government health care benefits system.	Philippine Health Insurance Corporation (PhilHealth)	None
Total		*PHP 2 900*

6. Certification and registration requirements for micro-enterprises

The project participants have to formalize their micro-enterprises by registering them with the appropriate government agencies and institutions. The general requirements to be a legitimate enterprise, costing about PHP 2 900, are shown in Table 4.

Registering with DTI

Each micro-enterprise has to ensure that no other entity uses its name by registering with DTI. This allows the micro-enterprise to conduct its business legally under its name anywhere in the Philippines.

In the registration process, the enterprise must submit a preferred business name and three alternative names for the business and pay a minimal fee of PHP 300 for the search and query process. The business name that is unique and not similar to other approved business names becomes the official name of the enterprise.

Registering with CDA

An association wanting to form a cooperative should register with the CDA, which requires that the association should:

- have at least 15 members;
- have a capitalization not lower than P2 000;
- submit four copies of the articles of cooperation and by-laws;
- submit four copies of a feasibility study and
- have the officers of the cooperative duly bonded in either cash, fidelity or surety bonds.

The general registration fee with CDA is 0.1 percent of the authorized share or capital or the basic application fee of PHP1 000, whichever is higher.

Registering with the LGU

All enterprises are required to secure a mayor's permit or a municipal license to conduct their business. Entrepreneurs have to secure an application form and submit three copies together with a simple sketch of the location of the enterprise. The application should be supported with the certificate of enterprise name registration from the DTI. For partnerships or corporations, the SEC certificate of registration and a copy of the articles of incorporation/partnership and of by-laws should accompany the application. Different rates apply to different local government units. The minimum annual registration fee for an enterprise is PHP1 000.

Registering with BIR

The BIR requires all enterprises to register with them for taxation purposes. The enterprise has to secure a tax identification number (TIN) as their permanent record with the BIR. The application form should be supported by the following documents:

- mayor's permit;
- certificate of enterprise name registration from DTI;
- articles of cooperation, partnership or incorporation;
- residence certificate.

The BIR also issues the authority to print invoices, receipts, books of accounts and other accounting records that the enterprise will use in its operations. Registration with the BIR and the application for TIN should be done before the start of business operations. The total cost

of registration is PHP530 consisting of the PHP500 annual registration fee, PHP15 certification fee and PHP15 documentary stamp duty. PHP70 is charged for the cost of manual journals, which the BIR may require.

Registering with SSS

All employers are required to register with the social security system (SSS). An enterprise remits the employees' contributions together with their contributions to the SSS for the employees' benefits. The SSS, in turn, takes care of providing various benefits to the enterprise's employees like reimbursements in the case of sickness, health, disability, death etc. There is no registration fee when applying for an SSS number. The association or cooperative as an employer has to submit the following documents to the nearest SSS office:

- accomplished two copies of the SS Form R-1 (for employer registration) and R1A (employment report) and
- copies of the CDA certificate of registration for cooperatives or SEC registration.

Registering with PhilHealth

In addition to registering with the SSS, employers are also required to register with the Philippine Health Insurance Corporation for their employees' medical insurance coverage and health care benefits. Employees, both in government service and the private sector, are considered as automatic members of the programme and can avail of in-patient hospital care, out-patient care and medical diagnostic benefits. Registration with PhilHealth is free of charge. The following documents have to be submitted to the nearest office of Philhealth:

- accomplished two copies of the ER1 (employer's data record) for the employer's data;
- accomplished two copies of the ER2 (report of employee-member), which should be filled up by the employer;
- accomplished two copies of the M1a (member data record), which should be filled up by each employee and
- copies of the SEC registration, DTI registration or mayor's permit, whichever is applicable.

Other agencies, which microenterpreneurs can approach for their operational requirements are shown in Table 5.

Table 5: Additional registration opportunities for micro-enterprises

Activity	*Agency/institution*	*Fees*
Monitoring of compliance with labour laws	Department of Labour and Employment (DOLE)	None
Secure license as food manufacturer	Bureau of Food and Drugs (BFAD)	PHP 500
Registration as a corporation	Securities and Exchange Commission (SEC)	PHP 1 520
Application for use of bar codes	GS 1 Philippines	PHP 1 300

Registering with DOLE

All enterprises are required to register with the DOLE for monitoring of compliance with labour laws. The registration is free of charge and the enterprise has to submit an application form indicating, among other things, the name and address of the enterprise, the number of

employees, BIR registration as well as technical information regarding machinery and equipment and substances and chemicals used or handled.

Registering with BFAD

The BFAD's mission is "to ensure the safety, efficacy, purity and quality of processed foods, drugs, diagnostic reagents, medical devices, cosmetics and household hazardous substances through state-of-the-art technology as well as the scientific soundness and truthfulness of product information for the protection of public health."

The general requirements for licensing of food manufacturers or repackers with BFAD are as follows:

- duly notarized standard petition form;
- ID picture of the applicant;
- photocopy of SEC registration and articles of incorporation and DTI registration;
- mayor's permit indicating the address of the enterprise;
- itemized fixed assets and operating capital duly notarized;
- floor plan of working area with complete dimensions in meters;
- location and address of enterprise/plant address;
- notarized contract of lease of building and warehouse, if not owned by applicant;
- list of products to be manufactured/repacked;
- list of technical and non-technical personnel and their scholastic attainment.

In addition to these general requirements, BFAD also requires the following technical requirements in two copies:

- organizational chart indicating qualification of key personnel in production and quality control;
- list of production equipment with specifications;
- list of quality control facilities and equipment, if any;
- flowchart of manufacturing process with emphasis on identification of critical control points;
- detailed description of manufacturing procedures;
- quality control procedures employed by enterprise;
- certification with current laboratory analysis for source of water from city/municipal health/sanitary engineer.

Optional registration with the Securities and Exchange Commission (SEC)

If an association or cooperative likes to be recognized as a partnership or a corporation, it should be duly registered with the SEC. The basic requirements are as follows:

- name verification slip;
- articles of incorporation and by-laws or articles of partnership;
- treasurer's affidavit (for corporations only);
- registration data sheet;
- endorsements/clearances from other government agencies, if applicable;
- the minimum paid-up capital is PHP200 000 for partnerships and PHP500 000 for corporations.

The approximate minimum registration fee with SEC is PHP1 520 inclusive of filing fee, legal research fees, articles and by-laws.

Acquiring product bar codes from GS1 Philippines

GS1 Philippines, formerly known as Philippine Article Numbering Council (PANC), is a non-stock, non-profit organization established in 1992 that administers the article numbering in the country. It is a member of the International Article Numbering Association that aims to develop a set of standards for the efficient management of global, multi-industry supply chains by uniquely identifying products, assets and services. One service provided by GS1 is the issuance of bar codes that identifies a certain product, asset or service. Bar coding has contributed a lot to the efficient management of inventories and the monitoring of financial transactions of most businesses. For an enterprise's product to have a bar code, it should subscribe to GS1 Philippines. Subscription for small companies defined as companies with a capitalization of less than PHP1 million, less than 100 product variants and not more than 20 employees, is PHP1 000 annually. For first-time subscribers, there is a PHP1 000 entrance fee and a PHP300 seminar fee. The subscription requirements are as follows:

- formal letter stating its membership or non-membership of any industry association(s);
- photocopy of SEC/DTI registration;
- filled-up product list form(s);
- photocopy of latest SSS payments or a letter stating why there were no SSS remittances and
- completed subscription form and signed license agreement.

Other operational requirements

To support its operations, an enterprise needs utilities connection and communication lines. The cost of securing utilities and communication access are shown in Table 6.

Table 6: Utilities and communications

Utility	*Fees*
Local electric cooperatives for securing electric service connection	PHP 5 000
Local water utilities administration for securing water services connection.	PHP3 360
Philippine Long Distance Telephone Co. (PLDT), Bayantel, Digitel, Smart and Globelines for communication facilities	PHP 5 000
Total	PHP 13 360

In applying for electricity and water connections, the documents required are a sketch of the location of the building and the community tax certificate of the applicant. An application for telephone lines entails the submission of additional documents like valid IDs and proof of billings.

7. Sources of credit and financing

7.1 Financial viability

Business plans were prepared for all micro-enterprises supported by the project and the plans and enterprises are deemed financially viable. The initial capital investments and the annual rates of returns on the initial investment (ROI) are shown in Table 7.

Table 7: Capital investments and returns on investment of micro-enterprises

Micro-enterprise	*Initial capital investment*	*Annual return on investment (%)*	*Annual return on sales (%)*
Fish ball production	PHP 21 000	285	42
Fish vending	PHP 2 600	3 674	18
Shrimp paste production	PHP 48 000	632	35
Mussel culture	PHP 30 000	1 240	62
Oyster culture	PHP 30 000	2 890	72
Iodized salt making	PHP 42 500	2 047	32
Fish sauce production	PHP 21 500	177	16

The financial feasibility of each project is also described in the respective business plans presented in Appendix B.

7.2 Informal sources of credit

The ideal source of capital for an enterprise would be from the personal savings or assets of the owners or proprietors because these do not require payment of interest and have no payment terms to be considered. The project participants of the micro-enterprise development project, unfortunately, neither have sufficient savings nor assets. Their earnings are sometimes not even sufficient to cover their daily expenses. Furthermore, fisherfolk do not own properties of value that can be pawned or can serve as collateral for a loan.

The project participants indicated, however, that easy-to-obtain loans are available and provided by the so called *Bombays*, who are moneylenders of Hindu cultural heritage, who function as informal sources of credit in some rural areas of the Philippines. They provide collateral-free loans that earn on an average 20 percent interest per month. The terms of such loans are easy to compute. The interest at the end of the term is added to the principal and the sum is divided by the number of days of the term. Collection of loan repayment is done on a daily basis. Project participants pointed out that they could not ask relatives or friends for loans as these are financially burdened like them. In addition to informal sources of credit, project participants also identified formal institutions, which could provide the capitalization for their micro-enterprises like rural banks and the *Taytay Sang Kauswagan* (TSKI).

7.3 Financing from rural banks

There is at least one rural bank in or close to the municipalities, where the project participants reside. Located in the municipalities in the Banate Bay area are the Rural Bank of Barotac Viejo and the Rural Bank of Barotac Nuevo. The Rural Bank of Tigbauan and the Rural Bank of Miagao serve the constituents of Southern Iloilo. These rural banks strictly adhere to the six C's of credit, i.e. character, capacity to pay, capital, collateral, conditions and confidence. An interview conducted with the rural bank personnel revealed that, currently, they do not have a credit line for micro-enterprises on a start-up level because of the risks

involved. They are offering only collateralized loans with interest rates ranging from 14 percent to 20 percent per annum depending on the term of the loan. The maximum term is 360 days. To apply for the loan, applicants are required to submit the following documents:

- original certificate of land title;
- tax declaration of a landed property;
- sketch of the landed property site and
- a community tax certificate.

The amount of the loan depends on the value of the landed property as appraised by the bank's personnel. The loan payment terms are monthly, quarterly or semi-annually.

7.4 Borrowing from Taytay sang Kauswagan (TSKI)

Taytay sang Kauswagan is a non-stock, non-profit organization that is involved in microfinancing. It operates in the entire island of Panay, organizes groups and assists them in micro-enterprise development. The procedures in TSKI are similar to Grameen banking employing the so called "centre accountability", wherein group members are jointly liable for their debts. In case a group member fails to pay his or her dues, the other members in the group have to assume the debt. The borrowers can borrow from PHP3 000 to PHP30 000 individually with an interest rate of 16 percent per annum. The requirements to avail of TSKI loans are as follows:

- the association must have at least 25 members, which are divided into groups of five;
- individual members have to submit three copies of ID pictures, residence certificates, barangay clearances and birth certificates;
- each group is subjected to a loan utilization check to ascertain that they will make proper use of the loan and
- borrowers have to undergo a 4-day training conducted by TSKI.

The purpose of the training is to familiarize borrowers with the policies and procedures of TSKI. The training also serves as a venue to assess the capabilities of the borrowers in doing their businesses and enhancing their business management skills.

The initial loan amount a member can avail of is PHP3 000 payable within 6 months on a weekly basis. The loan is subject to a 4 percent service charge and another 5 percent capability building fee. Charges and fees are deducted from the loan amount. The capability building fee and PHP25 compulsory weekly savings are deposited with TSKI and returned to the borrower once the loan has been repaid. Borrowers are also required to pay PHP8 to a so called "Center Compulsory Training Fund" (CCTF) after each release of a loan and PHP5 for the cost of the check. The CCTF is returned to borrowers, who no longer avail of loans from the TSKI. The weekly amortization of the initial loan is PHP167.20 broken down as follows: principal: PHP120; interest: PHP19.20; compulsory savings: PHP25 and a liquidity fund contribution of PHP3, which is used for further training of the group.

7.5 Sourcing capital from government institutions

There are government-owned financial institutions as well as government authorities, which can finance micro-enterprises. These include:

- Land Bank of the Philippines (LBP);
- Development Bank of the Philippines (DBP);
- Quedan and Rural Credit Guarantee Corporation (QUEDANCOR) and
- local government units (LGUs).

Land Bank of the Philippines (LBP)

Farmers and small fisherfolk are priority clients of LBP. In its 2003 portfolio, farmers and fisherfolk were provided with about PHP12.9 billion in loans, which amounts to 11 percent of LBP's total lending to priority sectors like small and medium-scale enterprises (SMEs), microfinance, agribusiness, agri-infrastructure and other agri-related business. Interest charges of LBP for cooperatives range from 12 to 14 percent per annum. Cooperatives are considered as key clients of LBP and given preferential interest rates of 10 percent per annum. Since LBP assists cooperatives in the management of their loans, the bank also charges a 2 percent supervision fee per loan.

Applications from cooperatives for loans from LBP undergo two accreditation processes, i.e. the accreditation with the LBP Development Assistance Center (DAC) and accreditation with the Lending Division using the Risk Asset Acceptance Criteria (RAAC). The DAC assesses the "maturity level" of the applicants taking into consideration its membership, capital build-up or savings mobilization, organizational and leadership management, operations, bookkeeping and accounting, financial performance and affiliation with other similar organizations. Should the DAC assessment of the applicants fall below the minimum requirements, training sessions and seminars are initiated by LBP to improve the "maturity level" of the potential borrower.

Once the applicant passes the DAC assessment, the application is passed on to the lending division and subjected to the RAAC using the following criteria:

- maturity level, divided into class A, B, C or D;
- membership should be at least 60 even though 30 members can be accepted subject to justification;
- paid-up capital should be at least PHP30 000;
- core management team of the cooperative should have at least a manager, treasurer and bookkeeper;
- the applicant should show proof of profitability for at least three years;
- the ratio of debt to equity, taking into consideration the loan applied for, should be at the maximum of six-to-one and
- the liquidity ratio or the ratio between current assets and current liabilities should be at least one-to-one and preferably in favour of the current assets.

The documents to be submitted together with the loan applications are:

- financial statements, i.e. balance sheet, income statement and statement of cash flows audited by an independent accountant and duly received by the BIR;
- duly signed list of members and officers;
- copy of the registration certificate with the CDA;
- articles of cooperation and by-laws;
- board resolution for the application of loans and
- board resolution for the signatories of the loan documents.

Development Bank of the Philippines (DBP)

The preferred clientele of DBP are small and medium enterprises (SMEs). Micro-enterprises have to graduate to the level of SMEs to avail of the credit facilities of DBP. Interest rates for SME loans range from 8.25 percent to 11.25 percent per annum with a maximum term of 15 years. Currently, DBP does not extend loans directly to micro-enterprises. Instead, it channels its micro-enterprise loans to microfinancing institutions like TSKI.

Quedan and Rural Credit Guarantee Corporation (QUEDANCOR)

Quedancor is a government-owned and controlled corporation that offers loan services to farmers and fishermen. The projects that are eligible for Quedancor loans include processing and marketing of fish, seaweeds and other marine products. Quedancor has tie-ups with the Department of Agriculture (DA) and the Bureau of Fisheries and Aquatic Resources (BFAR) for programmes that aim to uplift the socio-economic conditions of coastal fisherfolk like the Integrated Livelihood Programme for Fisherfolk (ILPF). This project provides credit for alternative livelihoods operated and managed by fisherfolk project participants. The loan amount is the total cost of the project not to exceed PHP20 000 per borrower and is repayable in one year with 12 percent interest per annum and an additional 3 percent service fee.

Quedancor also has a so called self-reliant team (SRT) programme, which is a collateral-free lending scheme specifically designed for borrowers engaged or about to engage in fishery, livestock and poultry projects. Its clients include farmers, fisherfolk, the urban poor and the rural poor. To be eligible for the SRT programme, the applicant must be:

- 18 to 63 years old;
- a resident in a community or barangay for at least one year;
- experienced/knowledgeable about the project and willing to undergo training on the project;
- must pass the background and credit investigation;
- must attend the programme and values on credit orientation seminar.

Loans are released to groups. Prospective borrowers should be living in the same barangay and should form groups of 3 to 15 members. The group selects a team leader, who should have a checking account with a bank or should open a checking account under his/her name and be able to issue post-dated checks in favour of Quedancor as loan payments to the group's accountability. It is also the responsibility of the team leader to remind members of their obligations and to collect loan repayment instalments from group members and deposit these in his/her checking account. The SRT programme offers a maximum of P20 000 for working capital loans and P50 000 for production loans with an interest rate of 2 percent per month and 14 percent per annum depending on the term of the loan. Working capital loans are to be repaid within 6 to 12 months depending on the type of the project. Payments are on a weekly, monthly, semi-annual, or annual basis depending on the cash flow of the project. The requirements of the SRT programme are as follows:

- application form with ID pictures;
- barangay certificate of residency and community tax certificate;
- certificate of attendance in the programme and values credit orientation seminar;
- valid IDs and
- memorandum of agreement.

Local government units (LGUs)

Loans or grants can be sourced from local government units like municipal and provincial governments. In their annual budget, local government units allocate a certain portion for projects. Public officials like senators and the congressmen and women have also annual allocations for so called pet projects. To avail of these funds it is a matter of bringing to their attention the worthiness of a particular micro-enterprise.

Micro-enterprises are generally considered good projects because they stimulate creativity and hard work, develop new or innovative products or services, generate income and generate employment. Looking for resources to finance the start-up operations takes some effort on the part of micro-entrepreneurs. But if the micro-entrepreneur has a firm resolve to venture into

business and is armed with a good business plan as proof of commitment, the investor or financier would certainly give a second look at the business proposal.

To assist the project participants in looking for financial support for their respective micro-enterprises, Table 8 below lists different institutions in order of priority.

Table 8: Institutions financing micro-enterprises in Iloilo Province

Priority	*Financing institution*	*Address and contact numbers*	*Contact person*
1	*Taytay sang Kauswagan* (TSKI)	TSKI Pototan Branch, Tel.: 529-7400	Mrs Sarah Sales-Sabina, Branch Manager
2	Quedan and Rural Credit Guarantee Corporation (QUEDANCOR)	Door 2 Prudential Bldg., Ortiz Street, Iloilo City, Tel.: 3367809, 3371569	Mr Narri A. Villaruel Head, Loans and Management Group
3	Land Bank of the Philippines (LBP)	Iznart-Solis Street, Iloilo City, Tel.: 3351002 to 03	Mr Cid B. Malones, Account Officer
4	Development Bank of the Philippines (DBP)	De la Rama Street, Iloilo City, Tel. No 3376330	Ms Antonette T. Young, Account Management Specialist

8. Steps needed to become a full-fledged micro-enterprise

The development of the micro-enterprises initiated with support of the project into full-fledged and fully operational micro-enterprises requires considerable efforts and time. The initial step for becoming a full-fledged micro-enterprise is compliance with all the registration and certification requirements of the government. The different micro-enterprises in Banate Bay and southern Iloilo introduced with the support of the project must comply with these requirements in order to have a legitimate business existence and to have an operational organization as shown in Table 9.

A minimum of PHP2 900 is needed for a basic business registration of micro-enterprises. For a food processor or manufacturer, an additional expense of PHP500 is needed for registration with BFAD. Another PHP1 300 will be needed for application to use bar codes with GS1 and an additional PHP100 for each product to be registered for bar coding. Bar coding is required for items that will be retailed in big grocery stores such as SM Supermarket, Gaisano Supermarket and Iloilo Supermart. To avail of utility services, the micro-enterprise has to advance PHP13 360 for water, electricity and communication. Electric connection may be prioritized over water and communication because water supply is abundant and communication can be facilitated by personal mobile phones.

In addition to complying with the above requirements, a lot of work must be done particularly in the areas of production, marketing and human resource support and management for these micro-enterprises to be viable and sustainable. The micro-enterpreneurs need to find ways to improve the quality of their products and the production processes to minimize costs and eventually maximize profits. Furthermore, it is crucial to reach a sufficient production volume to meet the market demand created by their marketing efforts. As regards marketing, efforts must be exerted to identify potential markets and develop strategies on how to reach them. Prices should be reviewed to be more competitive and promotional tools should be considered like advertising and sales promotions. With regard to management and operation of the micro-enterprise, there should be a suitable organizational structure with appropriate management policies and operational guidelines. The organizational structure shows the lines

of authority and staffing pattern whereas the operational guidelines must contain a suitable internal control system.

Table 9: Requirements of full-fledged micro-enterprises

Activity	*Ano*	*Bte*	*BNo*	*BVj*	*Gum*	*Mgo*	*Otn*	*SJn*	*Tig*
Registration of business name with DTI (PHP300)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Registration to legitimize existence as a cooperative with CDA (PHP1 000)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Securing of tax identification number and registration of the books of accounts as well as printing of business documents like official receipts with BIR (PHP600)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Securing local clearances and business permits (PHP1 000)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Registration as an employer with the government's social security programme (SSS)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Securing membership in the government health care benefits system with PhilHealth	✓	✓	✓	✓	✓	✓	✓	✓	✓
Registration with DOLE for monitoring of compliance with labour laws	✓	✓	✓	✓	✓	✓	✓	✓	✓
Registration with BFAD as a licensed food manufacturer (PHP500)	✓	NA	✓	NA	NA	✓	NA	✓	✓
Application with GS1 for use of bar codes (PHP1 300)	✓	NA	✓	NA	NA	✓	NA	✓	✓
Secure electric service connection (PHP5 000)	OP	OP	OP	OP	OP	OP	OP	OP	OP
Secure water services connection (PHP3 360)	OP	NA	NA	NA	NA	NA	NA	NA	NA
Secure communication facilities connection (PHP5 000)	OP	OP	OP	OP	OP	OP	OP	OP	OP

Legend: Ano: Anilao; Bte: Banate; BNo: Barotac Nuevo; BVj: Barotac Viejo; Gum: Guimbal; Mgo: Miag-ao; Otn: Oton; SJn: San Joaquin; Tig: Tigbauan; OP: optional; NA: not applicable.

Becoming a full-fledged micro-enterprise requires hard work over a period of time, i.e. at least five years. There is also the equivalent monetary resource that should be considered. On the one hand, members of fisherfolk associations and cooperatives need to display fortitude and firmness to make their micro-enterprise viable and sustainable. On the other

hand, stakeholders like funding agencies, academic institutions and other government agencies should continue offering the necessary support for growing micro-enterprises in the form of additional grants and appropriate extension services.

Additional training needs

The project participants of the FAO-supported project have attested that the training sessions they have undergone were very important for starting their micro-enterprises. However, not all members of the fisherfolk associations were able to avail of the training programmes conducted owing to funding and time constraints. All project participants will have to be trained in the following specific areas for the long-term profitability and sustainability of their micro-enterprises.

Management skills development and enhancement: the most critical skill that should be learned by members of fisherfolk associations, which undertake micro-enterprises, is the ability to manage their business operations. The members should be trained further in planning, organizing, implementing and controlling the various micro-enterprise activities. The management should be able to strategize their operations, source out, utilize resources, execute strategies and direct actions. As all of these activities require a lot of interaction, the management should also be adept in both intra- and inter-personal skills.

Values re-orientation: many micro-enterprises fail because their capital is sometimes used for personal purposes. Potential micro-enterpreneurs should be made aware that, for their micro-enterprise to succeed, enterprise transactions should be separate from personal transactions and the capitalization provided for the enterprise should be used primarily for its operations. Only a portion of the income derived from operations can be for personal use and the project participants should be prompted to keep their priorities straight.

Marketing skills related to sales, packaging and product promotion: project participants have to improve their marketing skills. In Anilao, for example, the project participants stated that they lack the skill of selling. They mentioned that they need help to improve their self-confidence to be able to offer their products to customers and to create distribution linkages. This is also true for the other micro-enterprises initiated by the project. Project participants should further be trained in proper packaging of their products as well as learn strategies for effective promotion and distribution. For them to be able to deliver their products in other geographical locations, they should also acquire knowledge of logistics.

Good manufacturing practices, hygiene and food safety: the production aspect of the micro-enterprises has to be improved. Project participants have to learn about the different factors that contribute towards the making of top quality products. Producers must employ good personal hygiene practices and maintain cleanliness of their utensils and working areas to ensure good quality and safety of their products. Good sanitation inside and outside processing sites and plants must also be observed.

In the case of Anilao, the project participants have to improve on the taste of their products. The shelf-life of their fish *bola-bola* has to be established and they have to find ways to lower the cost while maintaining the quality of their products. For the micro-enterprises of Barotac Nuevo and Tigbauan, the producers should be exposed to good manufacturing practices. Hygienic preparation of shrimps has to be observed to achieve quality produce. Innovations of the current shrimp paste produced have to be introduced for it to be differentiated from shrimp paste products of other companies already existing in the market.

Producers in Barotac Viejo have to ascertain that the water, where mussels and oysters grow is of good quality and that water quality is maintained that way and monitored all year round.

This would guarantee that they are able to produce high quality individual oysters and get a good price for their produce. In Miagao, the project participants have to find ways to purify the seawater that serves as raw material in making salt. The drying facilities and methods should also be evaluated for sanitary considerations. This is to achieve a certain quality that would make the Miagao salt the preferred salt in the market.

Financial management skills: financial information is crucial for making sound decisions. Prior to their participation in the project, most of the project participants were not exposed to recording financial transactions and keeping books of accounts. They should be given further training on basic accounting and bookkeeping. In addition to the preparation of financial reports, project participants should also be guided on how to use these reports in making sound decisions through a seminar on proper financial and credit management.

To further inspire them to proceed with their micro-enterprises, an educational tour to some successful micro-enterprises may be arranged. Through this, the project participants can have first-hand information on a similar endeavour that is progressing well. This will also enable them, to validate the learning they acquired from the various seminars conducted by the project. Once exposed to an actual enterprise scenario, their resolve to commit themselves to their micro-enterprise endeavour will be intensified.

9. Conclusions and recommendations

During the implementation of the project, important lessons were learned which may be used as a guide for similar and future endeavours. Stakeholder participation is essential for the sustainability of micro-enterprises. When the FAO-supported project started, a primary consideration was how to sustain the micro-enterprises after the end of the project when funds will no longer be available. An important factor of sustainability is the active participation of officials of the LGUs and CRMCs in the planning and implementation of the micro-enterprises. Officials from these municipalities were the ones, who recommended fisherfolk organizations with a good track record for involvement in the project. In this way, the micro-enterprises established will have a greater chance of success. Project participants had a direct say on what micro-enterprises they wanted to establish and what training programmes and other support they needed. A sense of ownership was developed through the active participation of the stakeholders from the very beginning.

To transform a fisher into an entrepreneur is a long process, which may not be achieved within a short span of time. Values orientation is important for project participants to develop an entrepreneurial character. Project participants should be able to adopt proper attitudes and must develop a firm commitment for their micro-enterprise to become successful.

Different strategies may have to be utilized for different micro-enterprises to attain early success. There is an advantage in implementing a livelihood project through fishers' associations or cooperatives because this fosters cooperation among community members. However, in one micro-enterprise in Banate Bay, some members of the association were not fully committed thus slowing down the progress of the micro-enterprise. In a case like this, it is a good strategy to fully support a few hardworking and enterprising members. Once the micro-enterprise becomes profitable, these members can then hire other members of the association as workers.

Capacity building is vital to the success of a micro-enterprise. Through the various training sessions organized by the pilot project, participants were able to make the operation of their organization more efficient, which led to improvements in production, packaging and marketing of their products.

The development of micro-enterprises is an important strategy to augment the income of small-scale fishers, alleviate poverty and at the same time reduce fishing pressure in the coastal area. For a micro-enterprise to become sustainable requires a long process as well as the implementation of the following recommendations:

- The LGUs and CRMCs must continue to support and monitor the progress of the micro-enterprises established. The concerned municipal official, i.e. the fishery officer, should follow-up and monitor the status of the micro-enterprise and encourage the project participants to continue working for their enterprise until it becomes fully viable.

- There should be active collaboration among municipalities, academic institutions and concerned government institutions to respond to the needs and provide solutions to problems encountered by project participants operating the micro-enterprises.

- Financing institutions should provide special access to loans and capital for micro-enterprises established by fisherfolk associations. The long process and many requirements of the financing institutions have discouraged the fisherfolk from availing loans from financial institutions to start their micro-enterprises.

- There should be a basic set of training programmes for micro-enterprise development, consisting of but not limited to values orientation, organizational strengthening, product development and marketing. Members of a fisherfolk association must undergo these training programmes before starting a micro-enterprise in order to ensure its success.

APPENDIX A

List of resource persons and facilitators

Name	*Title*	*Organization*
Mary Lou Larroza	Executive Director	Banate Bay Resource Management Council
Carlos C. Baylon	Professor	UPV College of Fisheries and Ocean Sciences
Benmar B. Panaguiton	Assistant Professor	UPV College of Management
Erlinda Panggat	Professor	UPV College of Fisheries and Ocean Sciences
Aklani Rose Hidalgo	Associate Professor	UPV College of Fisheries and Ocean Sciences
Jose Neill Hortillo	Assistant Professor	UPV College of Management
Ma. Piedad Palacios	Assistant Professor	UPV College of Management
Mary Rose Rebueno	Assistant Professor	UPV College of Management
Rose Mueda	University Research Associate	UPV College of Fisheries and Ocean Sciences
Mrs Ernestina Peralta	University Research Associate	UPV College of Fisheries and Ocean Sciences
Mercy Quilantang	University Research Associate	UPV College of Fisheries and Ocean Sciences
Noemi Palmares	University Extension Specialist	UPV Office of Continuing Education and Pahinungod
Ma. Eden Borbon	Cooperative Development Officer	Local Government of Oton
Maria Rosena Jaspe	Agriculture Technologist for Fishery	Local Government of Oton
Federico Monsale Jr	Cooperative Development Officer	Local Government of Miagao
Arcsel Gerard Sagge	Research Assistant	University of the Philippines in the Visayas

APPENDIX B

Business plans for micro-enterprises

1. PRODUCTION OF FISH BALLS

Objectives of business plan

The objectives of the business plan are:

- to provide an alternative livelihood for the members of Anilao Fish Processors Association through the processing of fish products;
- to generate income from producing and selling fish balls and fish bola-bola;
- to seek adequate financing for other members of the association.

Business segment

The Anilao Fish Processors Association is composed of housewives, out-of-school youth and students. The group was formed on 19 May 2003 through the Bureau of Fisheries and Aquatic Resources (BFAR) to organize livelihood groups in coastal communities. Each of the 21 barangays in the municipality of Anilao was asked to send two representatives to form the association. Currently, the association has ten active members, who are between 39 and 62 years old. Two members are government employees and the others are wives of fishermen. The members of the association are trained in milkfish (bangus) deboning, fish smoking, processing of sardines and fish ball making.

Products and services

The association will be producing and vending processed fish products. These products will include fish balls, fish bola-bola, boneless bangus and smoked fish. The members will also offer their deboning services to the public for a fee.

During the first year, the association will focus on fish ball and fish bola-bola production. The same basic ingredients will be used for both products, i.e. minced fish meat mixed with other ingredients. The mixture will be formed into balls. The balls for the fish bola-bola will be bigger than those for the fish balls and will be wrapped in wonton wrapper. The fish bola-bola will be marketed in packs of twelve as a substitute for pork balls, which are used for preparing a local soup, i.e. pancit molo soup.

The fish balls will be deep fried in oil and skewered with bamboo sticks in sets of four. The cooking will be done to order and the balls will be sold directly to customers. A choice of sauce dips, regular and spicy, will be made available to customers to enhance the flavour of the fish balls. Eventually, the fish balls will be distributed in plastic packages as a ready-to-cook food item in the stores and supermarkets in Iloilo City.

Marketing segment

The potential markets of the association will be the residents of the municipality of Anilao, of the neighbouring towns and of the City and Province of Iloilo. Anilao has a population 22 170 divided into 1 608 households. The neighbouring towns of Banate and Barotac Nuevo have a combined population of 73 067 living in 4 796 households. The market segment is complemented by Iloilo City, which has a population of 366 391.

The initial target market for fish balls is the student population of the towns of Anilao and Barotac Nuevo. The student population of the town of Anilao in both elementary and high schools is about 2 000 while the student population in Barotac Nuevo is about 6 000. The fish bola-bola's initial target market consists of the households, stores and restaurants in the towns of Anilao, Banate and Barotac Nuevo. The association will eventually cover other towns in the Province of Iloilo and Iloilo City in future years.

There is competition in this industry as there are a great number of food vendors and substitute products for processed fish. The association has already considered this fact and plans to position itself as a quality producer to get a slice of the market. The products will be offered based on competitors' prices. Currently, fish balls are sold for PHP2 per stick of four balls. Once the association is able to produce bigger volumes, the fish balls will be sealed in plastic packs of 300 g and sold in the stores and supermarkets of Iloilo City for P14 per pack. Fish bola-bola will be sold at PHP20 per 300 g pack. Each pack of fish balls will contain about 20 pieces while fish bola-bola packs will contain 12 pieces.

Fish balls will initially be sold directly in the vicinity of the schools, school's canteens and public markets. Ready-to-cook fish balls will be distributed to households in Iloilo City through big stores and supermarkets.

Fish bola-bola will be packaged as an alternative to pork molo balls. Initially, it will be sold to households in Anilao and neighbouring towns but once production is firmly established, it will be distributed to households and restaurants in Iloilo City through stores and supermarkets.

Production segment

The raw materials used in producing fish balls and fish bola-bola are almost the same except for the size of the ball and some herbs and spices to produce a distinctive flavour. The basic ingredients are minced fish meat, flour, baking powder, white pepper, salt, sugar, onions, garlic, *patis or toyo,* water and oil. Fish balls and fish bola-bola will be prepared as follows:

1. Chop fish meat finely or grind in the food processor for 10 minutes.
2. Add salt until minced fish is translucent in appearance.
3. Add all other ingredients (flour, onions, garlic, carrots etc.) and mix for 20 minutes to obtain homogenized mixture.
4. Form into balls (bigger size for bola-bola and enfold in wonton wrapper).
5. Set in a 40 degree warm water until the balls float.
6. Drain and let cool for packing.
7. Store in freezer.

The initial equipments, tools and their cost are shown in Table 1.

All tools and equipment can be bought from the local market. The main ingredients for fish balls and fish bola-bola are all also readily available in the local market.

Management segment

Initially, the members of the association will carry out the project individually. The function of the association is to monitor the progress of members, who are directly involved in the project. The association meets once a month and the members involved in the business are required to give a report on the results of their individual operations. Once the quality of the products has been established and marketing channels have been established in urban areas, the production will be done by the association to meet a greater demand for the product.

Table 1: Equipment required for fish ball and fish *bola-bola* production and its cost

Equipment	*Cost(in PHP)*
Kerosene burner	750
Aluminium trays, 2 pieces @ PHP70	140
Knives, 2 pieces @ PHP50	100
Weighing scale	250
Basin, large	100
Casserole	150
Frying pan	190
Chopping board, 2 pieces @ PHP60	120
Stainless strainer	70
Mixing bowl	50
Measuring cup	30
Measuring spoon	20
Turner	30
Sub-total	2 000
Ingredients/raw materials for 80 packs of fish bola-bola or a week's supply of fish balls)	1 000
Total	3 000

Financial segment

Based on test runs conducted during the training, it is estimated that an individual vendor will be earning an average net income of PHP5 003.33 for producing and selling fish balls and fish bola-bola. The computations are shown in Table 2.

Table 2: Monthly income from selling fish balls and fish bola bola (in PHP)

Revenue/costs/income	*Fish balls*	*Fish bola-bola*	*Total*
1. Sales revenue	8 000.00	4 000.00	12 000.00
2. Cost of sales	4050.00	2 450.00	6 500.00
3. Gross income (1-2)	3 950.00	1 550.00	5 500.00
4. Depreciation			166.67
5. Amortization of organizational cost			300.00
6. Interest			30.00
7. Interest, depreciation and amortization expenses (4+5+6)			496.67
8. Monthly net income (3-7)			5 003.33

The sales revenue for fish balls is arrived as follows. An estimated 10 percent of the 1 000 students in Anilao National High School or 100 of students will buy two sticks of fish balls on a daily basis for a total of PHP400 for a five-day school week and a four-week school month. The sales figure for fish bola-bola is estimated at 50 packs, which an individual vendor can produce and distribute in one week, and a total of 200 packs per month at PHP20 per pack.

The cost of sales consisting mainly of the cost of raw materials and labour is estimated at 40 percent of the sales value plus the cost of fuel or kerosene amounting to PHP200 per month plus transportation cost, which is estimated at P400 per month. An additional amount of

PHP500 for water and electricity is divided equally between the two products. In the case of fish balls, an additional PHP400 for the rental of space at the school canteen is included in the calculation.

Depreciation represents the total cost of materials and equipment used for production, i.e. PHP 2 000, which is estimated to have a life span of one year. The organizational cost represents the amount to be paid for registration and licensing of the association. This includes registration with the DTI, the CDA, the BIR, the DOLE, the BFAD, local business permits as well as connections with utilities and communication companies. The estimated organizational cost is PHP18 000 to be amortized over five years.

The cost of interest represents the amount that is incurred as interest payment for borrowed funds to meet initial capital requirements of PHP3 000 at an interest rate of 12 percent per annum.

Based on above assumptions, the annual operations would result in a net income of PHP60 040. Since the initial investment of the association consists of materials and equipment worth PHP3 000 and organizational costs of PHP18 000, the annual return on investment is 285 percent. It is worthy to note that the initial investment can be recovered after four months of business operations. The return on sales calculated as the annual net income PHP 60 040 divided by total sales of PHP 144 000 is 42 percent. Both indicators suggest that the business of producing and selling fish balls and fish bola-bola can be very profitable and easily covers the cost of interest as well as the organizational costs.

2. FISH VENDING

Objectives of business plan

The objectives of the business plan are:

- to provide additional income for wives of fishers in Banate Bay;
- to secure additional capital for the members of the Fish Peddlers Association for their fish vending activities.

Business segment

Fish vending is a common livelihood activity of the women in Banate Bay. This can be attributed to the fact that Banate Bay's fishing ground is close by and fish is being sold fresh on an almost daily basis.

The Poblacion Fish Peddlers Association of Banate is composed of 45 female fish vendors, who have been in the vending business for more than five years. Most of the women are full-time vendors augmenting the income earned by their husbands from fishing, fish drying or driving tricycles.

Some members of the association have stalls inside the Banate market while others sell their fish house-to-house. Women can sell as much as 50 to 100 kg of fish daily. Due to the lack of working capital, however, many women only sell an average of 10 kg of fish per day.

Marketing segment

The potential market of fish vendors consists of the 8 255 households in the coastal communities of Banate Bay from Barotac Viejo to Barotac Nuevo. While there are many fish vendors and substitute products for fish, competition is not felt strongly because there is a

strong demand for fresh fish and prices are affordable. The price of fish has a mark-up of between 20 and 40 percent over the cost.

Ten members of the association will receive working capital from the project to enable them to buy and sell larger quantities of fish. Five of these women have stalls inside the market of Banate. The other five women will sell the fish from house-to-house. These women have already established their loyal customers outside of the Banate area and it will only take two to three hours to sell their fish.

The women can buy fish, shrimps, squid and other species at around two o'clock in the morning from one of the three fish brokers in Banate. They can also buy fish directly from fishermen landing their catch near the local market, from their husbands or from the fish brokers in the nearby municipality of Barotac Nuevo. The fish will be weighed and packed. After packing the fish, it will be sold in target areas within and outside the municipality of Banate.

It is estimated that the women participating in the project will be selling about 20 kg of fish daily at least five times a week. Since the purchase of fish is on cash basis, the minimum requirement for the purchase of 20 kg of fish is about PHP 1 600 (Table 3). A mark-up of 20 to 40 percent will be added to the cost of the fish to determine the selling price. Selling of fish in market stalls will require a payment of local tax amounting to about PHP2 while transportation expenses will increase if the vendor opts to sell from house-to-house.

Table 3: Equipment required for fish vending

Equipment/raw material	*Cost (in PHP)*
Fish for vending	1 600
Weighing scale	750
2 plastic containers	150
Transportation expenses	100
Ice	20
Plastic material for packing	10
Tax	2
Total initial investment	2 632

The weighing scales and the plastic containers owned by the vendor form part of her equity. Ice and plastic material for packing are available in the local market.

Management segment

Working capital of PHP 2 000 will be initially provided through the association to the ten members, who participate in the fish vending project. After two weeks, these vendors will start paying back the capital by remitting to the treasurer of the association a minimum amount of PHP50 on a daily basis until the amount received has been repaid. No interest will be charged for the initial loans. The amounts repaid can then be borrowed by other members of the association. The initial beneficiaries can also avail of a second loan. In case of a member availing of a loan for the second time, interest of 2.5 percent will be charged per month.

Financial segment

Individual vendors will be earning an average net income of PHP8 060 per month or PHP403 daily as shown in Table 4.

Table 4: Monthly income from fish vending (in PHP)

Revenues/costs/income	*Amount (in PHP)*
1.Sales	44 800
2. Cost of sales	36 640
3. Gross income (1-2)	8 160
4. Interest on loan	100
5. Net income (3-4)	8 060

The value of sales represents the selling price of 20 kg of fish that has a mark-up of about 28 percent over the buying price. Sales take place five days a week and four weeks in a month. The cost of sales consists of the daily purchase cost of fish from a broker valued at PHP1 600 plus the cost of supplies and other expenses valued at PHP132 and of transportation cost valued at PHP100. The interest cost is not calculated as the actually incurred cost but at a higher market rate of 5 percent per month. This is done to ensure that the fish vending activity is viable and can continue once working capital needs to be sourced from financial institutions. Based on above the annual net income is estimated as PHP96 720.

Like other vending activities, the proposed fish vending business has a very high rate of return on the initial investment, i.e. 3 674 percent since the initial investment to start the business is relatively low. The vendor can further increase her net income by selling more fish. The return on sales as calculated by dividing the annual net income through the value of total sales is 18 percent.

3. SALT IODIZATION

Objectives of business

The objectives of the business plan are:

- to promote the method of making iodized salt;
- to improve the quality and the packaging of the iodized salt product;
- to provide additional income from the sales of improved products and
- to secure financial assistance to support the project.

Business segment

Salt making is part of the rich heritage of the municipality of Miagao. Although labour-intensive, the traditional method of solar salt making in Miagao serves as an attraction for both local and foreign tourists. This is the main reason, why the municipal government is keen to preserve their unique process of salt making.

Every year, salt making starts in December and ends in May. It is one of the banner projects of the municipal government of Miagao under the government's poverty alleviation programme. It was originally planned to set up salt producing sites for each of the 22 coastal barangays of Miagao. Due to the limitation of funds, however, only eight persons from Barangay Guibongan received technical and financial assistance from the project. Barangay Guibongan is a traditional site of salt making in Miagao and the project beneficiaries are all traditional salt producers.

Marketing segment

Guibongan and other Miagao rock salt is made through the traditional method of solar drying using bamboos. This method has a purer yield than salt made by commercial grade

competitors. The granules of Guibongan salt are bigger than the refined iodized salt currently sold in supermarkets and grocery stores. Local customers prefer Guibongan salt since the granules are easily dissolved during cooking. Currently, the salt is sold by the sack. With the improved production method and value adding ingredient of iodate, it will be sold in 1 kg, ½ kg and ¼ kg packages. The salt will be packed in transparent plastic bags and labelled emphasizing its source, i.e. Miagao.

As far as the market for the salt is concerned, there are more than 1 000 households from Miagao and San Joaquin, who frequent the Miagao municipal market during the town's market days, which are Saturdays and Tuesdays. These households are the primary target customers. The salt producers are also interested in selling their salt in other nearby towns and eventually penetrate the market in the city of Iloilo, which has the largest population in the island of Panay.

The members of the cooperative identified as main competing product the Baldoza salt, which is not iodized and produced in Barangay Baldoza in the Lapaz district of Iloilo City. This salt is considered as primary competitor of Miagao salt since it is sold at the relatively low price of PHP15 per *ganta*, which is equivalent to PHP6.80 per kg. The Baldoza salt though of commercial grade has impurities since it is sold in the open and hence contaminated by flies and dirt.

Other competing products in the rock salt category sold in the supermarkets of the City of Iloilo are the SM Bonus iodized rock salt sold at PHP9.75 per kilo and the TJ iodized rock salt at PHP12.00 per kilo. The SM Bonus iodized rock salt is imported from Metro Manila while the TJ iodized rock salt is packed in Iloilo City.

Refined iodized salts that are sold in supermarkets in Iloilo and their prices are shown in Table 5.

Table 5: Brands and prices of refined iodized rock salts sold in Iloilo

Brand	*Price per kg (in PHP)*
Marco Polo	21.50
McCormick	25.75
RAM	19.75
Royal Choice	16.75
TJ	15.50

Currently, one sack of salt containing 40 kg is being sold at the Miagao market for PHP400 to 520 at retail prices. While non-iodized salt is thus priced at PHP10 to 13 per kg, it is planned to sell iodized Guibongan salt for PHP20 per kg, PHP11 per ½ kg and PHP6 per ¼ kg in the Miagao market. This price has been suggested by the local government.

To assure the quality of the product, the beneficiaries will register as a cooperative. The cooperative will facilitate the improvement of the production process as well as monitor the quality of the outputs. All salt produced by its members will be bought by the cooperative and distributed to different stores in Miagao and the neighbouring municipalities. The cooperative will also facilitate the distribution in the urban areas.

The initial market for Guibongan iodized salt will be the municipality of Miagao. The local government of Miagao will provide the salt producers with a strategic location in the municipal market. It will also encourage residents to buy the locally manufactured iodized salt.

Production process

The materials and supplies that will be used in the production process and their costs are shown in Table 6.

Table 6: Materials and supplies used for iodized salt making and their cost

Materials/equipment	*Quantity*	*Unit cost(in PHP)*	*Amount*
Big bamboos	50 pieces	50	2 500
Spade	1 piece	350	350
Plastic pails	3 pieces	100	300
Weighing scale	1 unit	700	700
Tank/tubs	1 unit	200	200
Sub-total			4 050
Supplies: iodide solution, labels, etc.			200
Total			4 250

These materials and supplies are sufficient to produce three sacks of salt containing 120 kg.

Iodized salt is produced using the following procedures:

1. Approximately 1000 square meters of land are cleared. The land should accommodate an area where sand can be treated with seawater and dried.
2. Water drawn from the sea is repeatedly exposed to the heat of the sun to attain a certain level of saturation and concentration.
3. The concentrated seawater is filtered and purified using the treated/dried sand. The sand is placed in an earthen mound and the concentrated seawater is poured into it. The saturated and concentrated seawater flows from the mound to an earthen saturation pond. The brine solution is treated with a root-like plant that serves as a catalyst for crystallization. One root can be used for two rounds of salt making processes. The root is acquired through barter from upland farmers for two kilos of salt.
4. The treated brine solution is poured into the crystallization ponds made of bamboos (*duy-duyan*) to be exposed to the heat of the sun for approximately two days until the salt crystals have formed and are ready for harvest.
5. The harvested salt crystals are strained overnight and stacked in a large basket called "*Tabungos*". This basket can accommodate 20 sacks of salt.
6. The process is repeated from step 2 to step 6 again and again. Three harvests can be done in one week of operation.

For a household of four to five members, five crystallization ponds are needed to produce three sacks of salt per harvest. This will produce nine sacks of salt per week of operation and a total of 200 sacks per season. The association can produce a total of 1 600 sacks and a total of 64 000 kilos for a whole season.

1. The salt is iodized through the following process:
2. Weigh 10 kg of salt and place in a basin. Flatten salt in basin.
3. Using a plastic spoon, dissolve thoroughly 5 g of potassium iodide into 100 ml of potable water.
4. Measure 25 ml of potassium iodide solution and pour into sprayer.
5. Spray evenly small amounts of iodide solution on the salt.
6. Mix salt thoroughly. Make sure every corner of the basin is scraped.
7. Flatten salt again and spray solution evenly on the salt.

8. Repeat steps 5-7 until all of the 25 ml solution is sprayed. Iodide solution can only be stored up to two days.
9. Pack iodized salt immediately into ¼ kg, ½ kg or 1kg packages.

The personnel doing the idolization should always see to it that he/she has washed his/her hands before and after the iodization process. Gloves should be used during the mixing process.

Management segment

The participants in the iodized salt making project will form and register a cooperative. The manager of the cooperative will serve as a full-time employee of the cooperative together with five other employees, who pack and distribute the iodized salt to the different marketing channels.

The chairperson of the board of directors will serve as liaison with the project coordinator and technical consultant. The technical consultant will provide assistance in iodizing, packaging and marketing of the product.

Financial segment

Based on current operations, the project participants can sell on an average three sacks or 120 kg of salt per week. This is equivalent to about 480 kg per month. The monthly income of an individual iodized salt producer can be calculated as shown in table 7.

Table 7: Monthly income of an iodized salt maker

Revenues/costs	*Amounts (in PHP)*
1. Sales	9 600.00
2. Cost of sales	1 800.00
3. Gross income (1-2)	7 800.00
4. Depreciation	337.50
5. Interest on loan	212.50
6. Total depreciation and interest expenses (4+5)	550.00
7. Net income (3-6)	7 250.00

The sales figure relates to 480 kg of salt that an individual can produce and pack each month. The selling price per kilo is PHP20. The cost of sales figure is composed of the plastic material used for packing the salt, the iodide solution as well as of transportation costs and other expenses like vendor's tax for a total of PHP 1 800 per month. The life span of the equipment used is considered to be 12 month. Interest on loans is the estimated amount of interest due for a PHP4 250 loan at 5 percent interest per month.

Based on the above, the annual net income of an individual producer of iodized salt amounts to PHP 87 000. Once the beneficiaries have formed a cooperative, revenues will increase as the market expands.

The return on investment for iodized salt making is high. On an individual basis, the annual rate of return on the initial investment is 2 047 percent as the initial investment is low. The return on sales is 32 %.

4. SHRIMP PASTE MAKING

Objectives of business plan

The objectives of the business plan are:

- to improve the quality of shrimp paste (ginamos) with appropriate processing technologies;
- to expand the market of ginamos by developing various flavours and adopting appropriate processing and packaging methods;
- to provide income for the producers of ginamos products;
- to secure future financial assistance in support of the venture.

Business segment

Barangay Atabayan is known for its abundant and tasteful small shrimps (*ascetes*). The barangay has a fish landing centre where fish brokers purchase shrimps during the shrimp season. The shrimps are sent to Manila, Cebu and Iloilo City for distribution and also exported to other countries. Some residents also process shrimps into shrimp paste.

The project participants are eight residents of the barangay, who are familiar with the traditional shrimp paste processing methods locally referred to as "*bayo*" and "*lapak*" methods. The "*bayo*" method uses a large improvised mortar and pestle to grind the shrimps. The "*lapak*" method utilizes a large concrete tub, in which dried shrimps are placed and crushed.

The shrimp paste to be produced by the project will be processed under sanitary and hygienic conditions and be given new flavours. These innovations in flavour to be introduced by the project are locally called *adobo, spicy adobo, chili, bicol express and kare-kare*.

Each variety will be packed in 100 g microwave-safe round plastic containers, sealed with a tape and properly labelled. The shelf-life of the product is expected to be one month after the package has been opened. Refrigerating the product extends its shelf-life further.

There are two shrimp paste enterprises in Barangay Atabayan. Each facility is capable of producing an average of one ton of shrimp paste per week during the shrimp season using the traditional "*bayo*" and "*lapak*" methods. Their products are shipped to Manila for further processing and value-addition.

Bottled shrimp paste is also available in supermarkets. All of these competing products are bottled and manufactured in Manila at 250 g per bottle. The brand names and prices of these ginamos products are Chowking priced at PHP45 per bottle, Kamayan priced at PHP48.50 per bottle and Barrio Fiesta priced at PHP 48.50 per bottle. The Atabayan flavoured shrimp paste to be introduced by the project will be bottled at 100 g per bottle and sold from PHP15 to PHP20 per bottle. The price will be similar to the price of already existing products.

Initially, the flavoured shrimp paste will be marketed together with fish and other products of the project participants within the municipalities of Tigbauan and Oton. It will also be exhibited at food fairs during fiestas, agricultural weeks and similar occasions. The barangay officials will help with the promotion of the products by "word of mouth".

As the production increases, the shrimp paste will be sold in supermarkets in the City of Iloilo like the SM Supermarket chain, the Iloilo Supermart chain, Gaisano City and Robinsons' Mall. Eventually, the products will be sold to exporters, who will distribute it to the different parts of the world, where Filipino communities reside.

Production segment

The basic ingredients for shrimp paste can be supplied by the fishers of the barangay during the fishing season of the particular variety of shrimp locally called *hipon*, which is used for making the paste. These shrimps can also be purchased in Barotac Nuevo at almost the same price as in Atabayan.

The materials and equipment and their cost for an initial one-month production cycle are shown in table 8.

Table 8: Cost of materials for shrimp paste production

Materials/equipment	*Unit cost(in PHP)*	*Amount (in PHP)*
Raw materials including salt, herbs, spices and packaging materials		2 000
Plastic basins, two pieces	100	200
Frying pan	150	150
Earthen or glass jars, 4 units	100	400
Ladle or spatula		50
Other materials		200
Total		3 000

The initial capital requirements of the association will amount to PHP48 000 inclusive of the PHP30 000 capital of the ten members of the association at PHP3 000 each and the registration and certification costs of about PHP18000.

All ingredients and materials to produce flavoured shrimp paste are available in the town's public market. Packing materials are available in Iloilo City, which is located close to the processing centre.

The ingredients and corresponding cost for producing 13 cups spicy *adobo* flavoured shrimp paste are shown in Table 9. The third column shows the cost when the shrimp paste is made by the members of the association themselves and the fourth column shows the cost when the shrimp paste is procured from other producers.

The cost and retail price of a 100 g cup of spicy adobo flavoured shrimp paste is shown in Table 10.

The traditional production process of shrimp paste is simple. The basic ingredients are shrimps and salt and the only equipment used are mortar and pestle. Adding flavour to the product requires the use of additional ingredients and of a frying pan. The traditional way of processing ginamos consists of draining fresh shrimp and letting them dry under the heat of the sun for about an hour. The drying of shrimp takes up to six hours when the weather is partially cloudy. The dried shrimp are then mixed with salt. The mixture of shrimp and salt is crushed by using mortar and pestle. When processing large quantities, the crushing is done using feet in a large, improvised tub or an old boat. This method is locally called *lapak*. The resulting mixture is stored in a plastic bag. Sacks and cans are used for large volumes.

Table 9: Ingredients and their costs in flavoured shrimp paste production

Ingredients	*Quantity*	*Cost(in PHP), Shrimp paste made by members of association*	*Cost(in PHP), Shrimp paste procured from others*
Shrimp paste	4 cups	27.75	68.25
Vinegar	1 $^{2}/_{3}$ cups	4.30	4.30
Ground pepper	1 tsp	2.00	2.00
Garlic	15 tbsp	6.00	6.00
Bay leaves (*paminta dahon*)	1 tsp	0.50	0.50
Vegetable oil	14 tbsp	10.00	10.00
Calamansi juice	1 cup	7.50	7.50
Water	1$^{3}/_{4}$ cups	-	-
Brown sugar	1 cup	2.00	2.00
Cayenne	2 tsp	2.00	2.00
Pork	$^{2}/_{3}$ cup	15.00	15.00
Tomato (*kamatis*)	11 tbsp	5.50	5.50
Hot chilli (crushed with seeds)	1 tsp	0.10	0.10
Onion	9 tbsp	4.20	4.20
Total		86.85	127.35

Legend: tbsp= tablespoon; tsp=teaspoon

Table 10: Cost and retail price of 100 g flavoured shrimp paste

Cost/retail price	*Cost (in PHP), shrimp paste made by members of association*	*Cost (in PHP), shrimp paste procured from others*
Materials/ingredients	86.85	*127.35*
Add 20% mark-up for labour, charcoal etc.	17.37	*25.47*
Total cost	104.22	*152.82*
Divided by number of cups per recipe	13	*13*
Production cost per 100g cup	8.02	*11.75*
Packaging & labelling	4.35	*4.35*
Total cost per 100 g cup	12.37	*16.10*
Suggested retail price per 100g cup	18.00	*23.00*
Percentage of mark-up based on costs	*45.51%*	*42.86%*

The alternative method of producing shrimp paste in a more hygienic and sanitary manner followed by the project also starts by draining freshly caught shrimps. Using glove covered hands, the drained shrimps are mixed with salt in a large basin. The ratio to be used is one part of salt for every three parts of shrimps. The mixture is then crushed with clove covered hands. The crushed mixture is stored in an earthen or large glass jar. The top portion of the stored mixture is sprinkled with salt and the container's opening is covered with cellophane and secured tightly by a rubber band. The mixture is stored for three months and left to ferment.

To add flavour to the shrimp paste, all ingredients mentioned above are mixed together and cooked in a frying pan for about an hour together with the fermented shrimp paste. The cooked and flavoured shrimp paste (100 g) is then placed in a microwave-safe plastic container, covered with a lid and sealed with a scotch tape. A label is pasted on the container.

Management segment

The personnel involved in the production process are the members of the producer association. They will be supported by the agricultural technologist (fisheries) of the Tigbauan agriculture office and technical consultants from the UPV. The agricultural technologist will also assist in promoting and advertising the products at the municipal level.

Financial segment

Each member of the association has the capacity to produce 60 cups of flavoured shrimp sauce in one production cycle. Two production cycles can be done in a week. In a month, the association can produce 4 800 cups of shrimp paste. Table 11 shows the expected monthly income of the association.

It is assumed that 4 800 cups of fish sauce are produced in a month and sold for PHP15 each. The cost of sales is composed of the cost of the basic ingredients and the packing materials and includes the transportation expenses incurred during the product's delivery. The cost of sales is estimated at 60% of the sales value. Interest on loans is the estimated amount of interest due for the PHP48 000 loan taken by the association at 5% interest per month. Depreciation is related to the monthly allocation of materials and equipment used by the association for shrimp paste production spread over one year. Organizational cost consists of a portion of the PHP18 000 incurred by the association for registration and certification requirements and is amortized over a period of five years.

The annual rate of return on the initial investment based on above is 632 percent and the annual return on sales is projected as 35 percent based on an annual net income of PHP303 200 and total annual sales valued at PHP 867 000.

Table 11: Monthly income of shrimp paste producer association

Costs/revenues	*Amount (in PHP)*
1. Sales	72 000
2. Cost of sales (60% of sales)	43 200
3. Gross income (1-2)	28 800
4. Interest on loans	2 400
5. Depreciation	833
6. Organizational cost	300
7. Interest, depreciation and organizational expenses (4+5+6)	3 533
Monthly net income (3-7)	25 267

5. MUSSEL AND OYSTER FARMING

Objectives of business plan

The objectives of the business plan are:

- to provide an alternative livelihood for fisherfolk through mussel and oyster farming;

- to acquire the necessary skills and technology to produce good quality mussels and oysters;
- to identify markets for good quality mussels and oysters in the region and
- to secure financial assistance to support the mussel and oyster farm project.

Business segment

The San Francisco Fisherfolk Association is an organization of municipal fishers in Barangay San Francisco, Municipality of Barotac Viejo, Iloilo Province. Most of these fishers have boats of less than three gross tonnes and the most common fishing gears used are gill nets, long lines and hook and lines. The raft culture of mussels and oysters will be undertaken to provide additional income for the San Francisco fishers.

Marketing segment

It is planned that mussels will be grown and sold at a size of 5 to10 cm shell length after 4 to 6 months of culture. The price of mussels in Iloilo markets ranges from PHP20 to 30 per kg. Oysters will be grown individually to a size of 8 to 10 cm shell length and will be sold at PHP10 each.

The nearest markets for mussels and oysters produced by the San Francisco fishers will be the municipal markets surrounding Banate Bay. Most of the mussels and oysters sold in these areas are still coming from the nearby Province of Capiz. Mussels and oysters produced in Banate Bay can also be sold in major cities of the island of Panay such as Iloilo City, Roxas City and Passi City. Metro Manila can be a major market for mussels produced by the fishers of San Francisco. The primary market of oysters, however, will be fine restaurants and hotels in urban areas such as Iloilo City, Cebu City and Metro Manila.

The major producers of mussels and oysters in the island of Panay are in the Province of Capiz. The San Francisco fishers can sell their mussels and oysters in Iloilo markets at a lower price compared to Capiz producers since their transportation costs will be lower. The distribution of mussels and oysters is similar to other seafood products. During their initial year, San Francisco producers will be selling mussels and oysters in the municipal markets in Banate Bay area.

Production segment

The initial investment requirement for mussel culture is estimated to be PHP30 000 for the construction of three rafts. The cost of construction for one raft is shown in Table 12.

Table 12: Cost of construction for one raft used for mussel culture

Material	*Cost (in PHP)*
Bamboos, 40 pieces	2 000
Rope, 2 rolls	3 500
Binder, 10 rolls	500
Sinkers, 25 kg	1 500
Labour	2 500
Total	10 000

The mussel farming process is divided into four stages, i.e. raft construction, spat collection, grow-out and harvesting stage. The farming process starts with the construction of the raft that is used to collect mussel spats. The San Francisco fishers opted to use the raft culture method since this farming method is considered superior in terms of biomass potential and

financial returns and more environment-friendly compared to the popular stake, rack and broadcast methods. The raft is made of bamboo.

Spat collectors like empty oyster shells and strips of coconut husks are stringed on polyethylene or polypropylene ropes (20mm diameter) at 5 to 6 cm intervals and hung on the raft spaced 10 cm apart. Weights are tied at the ends of the ropes to keep them vertical. Once the collector ropes become heavy with spat settlement, they will be hung in their final positions on bamboo frames.

Grow-out ropes are hung in the raft. The raft is inspected regularly to monitor the condition of the mussels. The farmers will regularly remove predators and foulers like crabs, starfish, barnacles and sponges as these add extra weight to the raft and prey on the oysters. The weight and length of the mussels will be measured every week to monitor their growth. The mussels will be harvested after four to six months or as soon as the sizes are acceptable in the market. Medium-sized oysters will be collected individually and grown out in wooden trays to prevent clustering.

Management segment

The San Francisco Multi-purpose Cooperative will manage the micro-enterprise. The members of the cooperative will take responsibility for maintaining and monitoring the mussel farming project.

Financial segment

The raft is expected to yield 10 tonnes of mussels annually. One kg of mussels will be sold for PHP20. The net annual income is projected in Table 13.

The sales estimate is arrived by assuming that 30 000 kg of mussels can be produced by three rafts and sold for PHP20 per kg. The cost of sales is composed of labour for the monitoring of the mussels and oysters, the maintenance of the rafts, delivery and transportation expenses. It is estimated at 30 percent of the sales figure. The interest on loans reflects the amount of interest due for the PHP30 000 loan taken by the association at 5 percent interest per month. Depreciation relates to the cost of the rafts of PHP30 000, which are estimated to last for a year.

Table 13: Annual income of mussel and oyster culture

Revenues/costs	*Amount (in PHP)*
1. Sales	600 000
2. Cost of sales (30% of sales)	180 000
3. Gross income (1-2)	420 000
4. Interest on loans	18 000
5. Depreciation	30 000
6. Interest and depreciation expenses (4+5)	48 000
7. Net income (3-6)	372 000

Based on above, the annual rate of return on the initial investment of PHP30 000 by the association is estimated as 1 240 percent while the annual rate of return on sales is 62 percent based on an annual net income of PHP372 000 and annual sales of PHP600 000.

Culture of individual oysters in trays

Culture of individual oysters is another potential source of income for the fisherfolk of San Francisco. The medium-sized oysters from the raft can be transferred individually to wooden trays, 1m x 3m, and grown for two months. It is estimated that 400 pieces of individual oysters can be grown in one tray. The production for six trays (400 pieces per tray) with six crops in one year will yield 14 400 oysters per year.

The cost of one tray (1m x 3m) amounts to PHP600 and includes the cost of materials such as wood and nails estimated at PHP400 as well as labour for construction of the tray estimated at PHP 200.

Financial segment

One tray is estimated to produce 400 oysters and the sale price of one oyster is PHP10. Using six trays and six crops, PHP 144 000 can be earned per year from growing out individual oysters in trays. Deducting expenses for labour for maintenance, delivery and transportation of PHP36 000, the annual gross income is estimated at PHP108 000. Deducting further interest and depreciation costs, the annual net income is estimated as PHP104 040. This gives an annual rate of return of 2 890 percent on the initial investment of PHP3 600 and in an annual rate of return on sales of 72 percent. The financial indices would suggest that culture of individual oysters will have a higher return than raft culture of mussels.

6. FISH SAUCE PRODUCTION

Objectives of business plan

The business plan aims to provide alternative livelihoods for the members of the Sumakwelan Fisherfolk Association of Siwaragan, San Joaquin, Iloilo. More specifically it includes

- the construction of a village-type processing facility for the production of fish sauce;
- training of the Sumakwelan Fisherfolk Association members on basic processing technologies for the production of fish sauce;
- production and sale of fish sauce to augment the income of the association's members and
- to facilitate adequate financing to start the business.

Business segment

The Sumakwelan Fisherfolk Association was registered with the Securities and Exchange Commission in October 2004. The association is composed of thirty-two fishermen and their wives. While the husbands are engaged in fishing, their wives are selling their catch. Currently, only ten members are actively participating in the association's activities.

The catch of the members of the association is sold at a public market or from house-to-house within the community. During the peak fishing season, the members of the association earn reasonable incomes. Fish, which cannot be sold or used for home consumption, is not properly utilized because of a lack of storage and processing facilities. During the lean season, income is minimal and the members of the association have to find ways to augment their income. One of the alternatives identified by the association is to process excess catch during peak season into fish sauce, which can be sold during the lean season and provide income.

Marketing segment

The initial market for fish sauce will be the village, where the members reside as well as neighbouring barangays. There are 918 households with a total population of 15 608 in the coastal area of San Joaquin. The association can further sell their fish sauce to the municipality of Miag-ao after the demand of the neighbouring barangays of Bucaya and Tiolas has been met. Once their production has increased, the association will compete with the other fish sauce producers in stores and supermarkets at the local and possibly national level.

There are no known direct competitors in the target area with the same product. The closest fish sauce producer is located in the Province of Antique. There is competition, however, from products on sale in supermarkets. The products displayed in the shelves of supermarkets in Iloilo City are shown in Table 14.

Table 14: Commercial fish sauce brands and their prices

Brand name	*Price (in PHP) per bottle of 350 ml)*
Marca Piña	9.00
Datu Puti	12.50
SM Bonus	11.50
Carp	10.75

The fish sauce to be produced by the members of the association will be sold in 350 ml bottles and sold for PHP10 per bottle. The fish sauce is ideal for dips and as a flavouring ingredient for cooking. The promotion and selling of the product will be done by a team composed of barangay officials, municipal employees and members of the association. While barangay officials will promote the product at the barangay level, the office of the municipal agriculturist of San Joaquin will help by advertising the product during municipal activities like the town fiestas and the agriculture week. Members of the association will sell the bottled product in the neighbourhood. The association will eventually sell through stores and supermarkets in urban areas like Iloilo City and nearby municipalities.

The initial investment requirement for the project is PHP21 500. This amount is composed of the PHP10 848.50 to be used for the construction of the processing facility and PHP10 700 for the cost of an initial production cycle. The materials needed for the initial production of 2 000 bottles of fish sauce are shown in Table 15.

Table 15: Materials and supplies for fish sauce production

Materials	*Quantity/cost(in PHP)*	*Amount (in PHP)*
Fish	50 kg @ PHP40	2 000
Salt	20 kg @ PHP15	300
Bottles	2 000 pieces @ PHP4	8 000
Labels	2 000pieces @ PHP0.20	400
Total		10 700

The initial production cycle will produce 7.5 kg of fish extract equivalent to 2 000 bottles of 350 ml fish sauce. The members of the association will provide some of the fish to be used for fish sauce production. Fish can also be bought for PHP20 per kg from local fishermen. Ingredients for fish sauce processing such as salt can be bought from stores in the barangay, in San Joaquin or in the Miagao public market. Materials like jars, bottles, stickers and plastic bags can be purchased in Miagao or in the city of Iloilo.

Production segment

The production of fish sauce is divided into three major phases, i.e. construction of the processing facility, training on fish sauce production and marketing and the actual fish sauce production.

An initial 20 square meter (4m x 5m) *nipa* hut will be constructed to serve as processing facility for the production of fish sauce. The nipa hut will be composed of a roof made of nipa, a wall made of bamboo slats and a concrete floor. The cost of construction of the hut is estimated as PHP10 848.

Earthen jars, concrete tanks or food grade plastic jars may be used as fermenting tanks. A concrete tank of (1m x 0.5m x 1m) is to be constructed to serve as mixing and initial fermenting tank for the fish/salt mixture. A provision for drainage is to be made for easy cleaning.

A pilot-scale production of fish sauce will be conducted with approximately 40 kg of fish. This volume of fish will require approximately 15 kg of salt. The fermentation will take 9 to 10 months. The liquid extract will be filtered and further processed before bottling and labelling.

Management segment

Members of the association will help to construct the fish sauce processing facility and monitor the fish sauce fermentation and help with the processing. The project manager and technical consultant will provide assistance in fish sauce processing, monitoring, packaging and marketing.

Financial segment

It is expected that the initial production cycle will produce 2 000 bottles of 350 ml fish sauce. The estimated net income is shown in table 16.

The cost of sales is composed of the cost of fish used and the cost of salt, bottles and labels as per breakdown presented in Table 16 plus 20 percent for labour and overhead costs. Included in this amount is the manager's honorarium, which is equivalent to 5 percent of the total sales value of the products, and delivery expenses of about PHP1 000 per month.

Table 16: Monthly net income from fish sauce production

Revenues/costs	*Amount (in PHP)*
1. Sales	20 000
2. Cost of sales	14 840
3. Gross income	5 160
4. Interest on loans	1 075
5. Depreciation	904
6. Interest and depreciation cost	1 979
7. Net income	3 181

Interest payments are calculated for the initial investment of PHP21 500 calculated at 5 percent per month. The amount of depreciation is derived from the cost of the processing facility, i.e. PHP10 848, amortized over a 12-month period.

Based on the above, the annual rate of return on the initial investment (ROI) of PHP21 500 is estimated as 179 percent. The annual rate of return on total sales is estimated as 16 percent based on a net annual income of PHP38 172 and a sales value of PHP240 000.

The goals of the National Workshop on Micro-enterprise Development in Coastal Communities in the Philippines were to exchange experiences and good practices and identify financial and institutional support services and facilities to sustain livelihoods and micro-enterprises in coastal areas. The discussions at the workshop showed that livelihoods diversification and the improvement of income and employment opportunities in coastal fishing communities are crucial for their participation in the conservation and management of aquatic resources. Key elements of sustainable micro-enterprise development as identified by the workshop include capability building of fisherfolk organizations such as cooperatives and associations to implement livelihood projects, the preparation of feasibility studies and business plans, technical skills development, sound financial management practices, development of innovative and high quality products, access to new markets including urban and regional markets and the full participation of fisherfolk in the identification of livelihood activities and micro-entrerprises.

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