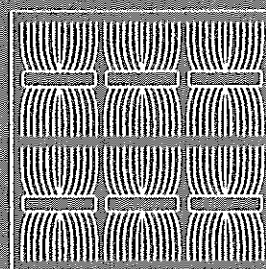


# Comprehensive Basic Study of the Autonomous Region in Muslim Mindanao in the Republic of the Philippines

Final Report



## AGRICULTURE SECTOR

December 2003

**PKII** ENGINEERS  
ENGINEERING CONSULTANT

IN ASSOCIATION WITH



ORIENT INTEGRATED DEVELOPMENT CONSULTANTS INC.

# **COMPREHENSIVE BASIC SURVEY OF THE AUTONOMOUS REGION IN MUSLIM MINDANAO**

**AGRICULTURE AND FISHERIES SECTOR**

**FINAL REPORT**

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## FOREWORD

The “Comprehensive Basic Survey of the Autonomous Region In Muslim Mindanao (ARMM)” in the Republic of the Philippines, hereinafter referred to as the “Survey”, was funded by the Japan International Cooperation Agency (JICA) of the Government of Japan. The Survey had commenced on August 4, 2003 and was for three (3) month duration. The sectors included in the Survey were:

- (1) Agriculture and Fisheries
- (2) Health and Medical Care
- (3) Education
- (4) Basic Infrastructure
- (5) Governance
- (6) Water Supply and Sanitation

All the information/data used in the survey was generated during the aforementioned survey period with the objective of gathering as much as possible the latest statistics available to provide an up-to-date picture of the current situation in the ARMM. What is therefore provided in these reports are the latest available data, though in some cases these already seemed outdated.

The difference between time period (year) reflected by the statistics and the period (year) of the conduct of this Survey shows the inadequacy in the availability of updated information. In instances wherein the desired information/data were not available, the Survey had to generate the necessary information itself through field surveys.





## ***EXECUTIVE SUMMARY***

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### Executive Summary

#### Introduction

1. The Study has the following objectives:
  - a. study and have a better understanding of the existing situation;
  - b. analyze the existing conditions, problems and needs of the agriculture-fishery sector; and
  - c. formulate programs/projects that JICA can promote, considering both aid strategy and viable approaches specially tailor-fit for ARMM.
2. The Study area is the Autonomous Region in Muslim Mindanao (ARMM), which was created in 1989 by Republic Act No. 6734, as amended. It is composed of the provinces of Lanao del Sur, Maguindanao, Sulu, Basilan and Tawi-Tawi. Its regional center is in Cotabato City, which is in the province of Maguindanao, but not a part of the autonomous region
3. Most of the data used for this study were gathered from concerned regional and provincial offices. However, the data collected from different sources are sometimes inconsistent and also most could hardly provide the actual condition at the field level. Therefore, a field validation / in-depth survey is requisite in planning and appraising possible interventions.

#### Overall Situation of the Sector

4. The contribution of the agriculture and fisheries sector to the gross regional domestic product has been increasing from 44 % in 1998 to 51 % in 2001. The sector plays an active role in the economic performance of the region and its importance has become higher.
5. National programs related to the sector being implemented are the Agriculture and Fisheries Modernization Plan (AFMP) and Giningtuang Masaganang Ani (GMA).
6. The Department of Agriculture and Fisheries (DAF) is the responsible agency of the region for the sector. With regard to the agricultural extension service, DAF has maintained the old set-up of the DA Central, i.e., maintain provincial and municipal agriculture extension offices.
7. Multilateral and bilateral donors have provided assistance supporting agricultural and fisheries development either in ARMM area or one that includes an area in ARMM. Common among the projects implemented by national operating agencies would be the organization of a Coordinating Committee and a Project Management Office (PMO). If the project is implemented nationwide, the PMO would be at head office. On the other hand, the PMO could be at a regional center if project coverage is within a region or a number of adjacent regions. Project management, however, is lodge with the PMO. Regional and Provincial level personnel do the work in the field. The problem is in communication and the flow of documents. Training also has to be provided to the field level personnel, especially with respect to documentation requirements on fund reimbursement to avoid delays in fund replenishments.

**Present Situation of Agriculture**

8. Based on the data collected from BSWM, about 520,000 ha are presently used for agriculture, 173,000 ha in Maguindanao, 108,000 ha in Sulu, 106,000ha in Lanao del Sur, 98,000 ha in Basilan and 35,000 ha in Tawi-Tawi. There is no current data showing the average farm size per household as well as land tenure condition covering all farms. Available is the data from the 1991 Census of Agriculture.
9. Major crops planted in the area are palay, corn (white and yellow), cassava, banana, some industrial crops (coconut, coffee, rubber) and some fruits (banana, durian and lanzones in Sulu). Palay, white corn and cassava are staple crops, while industrial crops and fruits are cash crops although the farm management is rather extensive.
10. In terms of area harvested, corn is most extensively planted (280,300 ha), followed by palay (174,100 ha) and cassava (92,300 ha). In output, however, cassava shows the highest with 970,300 tons, followed by corn (636,400 ton) and palay (422,600 ton).
11. The Study area produced 368,800 tons of banana (lakatan, latundan and saba) from 28,400 ha in 2002. Coconut is also commonly found in the area. Total area harvested is about 299,000 ha producing 966,200 tons. Durian and lanzones are popular as marketable fruit crops in Sulu, while rubber is found in Basilan and Maguindanao.
12. Average yield of palay in the area is relatively lower than the national average, namely 3.2 tons/ha under irrigation and 2.0 tons/ha under rainfed. That of corn is more or less the same with those of national average (3.7 tons/ha for yellow corn and 1.8 tons/ha for white corn). Although yield levels in the area is almost similar with those of other regions, it is far below the potential.
13. Coconut and cassava show relatively high productivity in comparison with the national average. Yields of banana and lanzones are the same with the national average.
14. Farming in the region could be considered in its early stage of modernization. In particular, the farming practice employed in the island provinces is basically what have been handed down through generations.
15. In Land Acquisition and Distribution that DAR-ARMM is responsible for implementation, accomplishment is only 59 percent. The workable scope of the program is 289,463 hectares while the area already distributed is only 171,052 hectares. There are now 78 ARCs identified in the region with a total area covered (scope) of 142,050 hectares and some 39,252 farmer-beneficiaries.
16. The region established one research center in Maguindanao as the central station of R (Research), D (Development) and E (Extension) system in ARMMLARC which has five (5) satellite stations. The R, D and E system aims to cover all the aspects of agriculture including lowland, upland, vegetables, fruits, livestock and inland fisheries.
17. DAF has maintained its extension arm at the provincial and municipal levels (PAOs and MAOs). On the other hand, LGUs in the region also hire Provincial and often Municipal Agriculturist, since the devolution of the agricultural extension service to local government units came earlier than the passage of the ARMM charter. It may

happen, however, that the local government-hired agriculturalists are political appointees who may not work in coordination with the DAF personnel.

18. The Land Bank is the major institutional credit supplier for agriculture and fishery activities. There are 7 branch offices in and around the mainland provinces and one branch office in each island province of the region. Most of the branches suffer from low repayment rates.

### **Present Situation of Fishery**

19. A total of 476 barangays is located within or near coastal zones and 226 barangays are around lake or marsh area, while 1,777 barangays are inland. It is noted that 191 barangays in Lanao del Sur are located at lakeshore and the provinces of Basilan and Sulu have significant number of non-coastal barangays.
20. The marine fishing grounds of ARMM are vast, varied and generally productive and thus are highly capable of serving both commercial and municipal fishing. Issues on the management and utilization of these fishing grounds often stem from conflicts of boundaries between commercial and municipal fishing. Commercial fishing vessels from other regions are often spotted in municipal waters.
21. Lake Lanao in Lanao del Sur and the Ligawasan Marsh in Maguindanao are the major sources of inland fishes. Their combined area is about 66,000 ha. Lake Buluan in Maguindanao with an area of about 8,000 ha. is also considered as significant source.
22. The number of fisher folks in the ARMM is estimated to be about 60,990 (2002), of which Sulu and Tawi-Tawi accounts for about 50 percent. Over half (57 %) of the municipal fishing bancas they operate are non-motorized. The most common type of gears used are hook and line and gill net with some variations.
23. The fishery production of the ARMM contributed an annual average of 16 % to the national total of 3.3 million tons in 2002. Aquaculture consistently led all other fishery production contributing 72 % to the region's total fishery output in 2002.
24. Commercial fish production in the region has increased in volume and value. In 2002, the region attained 75,200 tons of fish catch, which is 7.7 % of the total production of the country. It is noted that about 74 % (55,500 ton) of the total regional production came from Sulu.
25. Marine municipal fishing contributed a significant amount (about 58,800 tons in 2002) to its total fishery production. Of the five provinces, Sulu has 43 % share (17,446 ton) in the total production in 2002, while Maguindanao recorded the lowest production of municipal marine fishing. This may be attributed to the number of coastal municipalities in this province.
26. While Maguindanao performed poorly in terms of marine municipal fishing, it did well in inland fishing. Its production in 2001 is 10,200 ton which accounts for 58 % of the total regional production. The rest of the total regional inland fishery production came from Lanao del Sur.
27. Aquaculture production contributes a crucial share to the total fishery production of the ARMM. In 2001, it produced a total of 353,000 tons with a value of P 1.5



million. The provinces of Tawi-Tawi and Sulu are the major producers of aquaculture products, primarily seaweeds.

28. Seaweed farming emerged as the most dominant aquaculture activity in ARMM constituting 99 % of the total aquaculture production. Tawi-Tawi and Sulu contributed 50 % and 49 %, respectively. Farming methods for seaweeds are hanging monoline or spider net, bottom-stake and multiple raft that yields an average of 24 ton/ha/yr with six (6) croppings.

#### **Present Situation of Agricultural and Fisheries Infrastructure**

29. The region has a total potential irrigable area of 196,300 hectares. To date, only 28,500 ha have been developed for a low overall development rate of 14.5 percent. Roughly 22,000 ha composed of 15,800 ha (5 NISs) , 5,200 ha (32 CISs) and 1,100 ha (PISs and private) are located in the province of Maguindanao.
30. Farm to market roads has a total length of about 5,960 km, but the paved ratio is only 1.5 %, which is lower than the average paved ratio of Mindanao (3.8 %). The data on the inventory and status of local bridges in the provinces are not available since only the bridges along national highways and provincial roads are covered by available documents.
31. There are a total of 231 ports of different classifications in ARMM, most of these are made of timber with insufficient capacity or need to be rehabilitated. Most of these are municipal ports, which are municipal commercial port (89 sites), municipal fishing port (64 sites) and municipal port (64 sites).
32. Several types of post harvest facilities like warehouses and drying pavements for both land based and marine based products, and stilt driers for seaweeds were established in ARMM. However, these facilities are not sufficient in number to cater to the regions' vast potential in agriculture and fisheries resources.

#### **Present Situation of Marketing**

33. Staple crops (rice, white corn and cassava) are generally consumed within the region, while cash crops (such as banana, coconut, coffee, rubber, yellow corn and some fruits) are mainly sold to local assemblers (middlemen). In many cases, producers are obliged to sell their product at prices dictated by buyers due to lack of market information.
34. Seaweed is the most important aquaculture commodity of ARMM. *Eucheuma cottonii* is the dominant variety which is used as food, additive, in the manufacture of pharmaceuticals, and personal care products as well as the curing of leather. Harvested seaweeds reach local markets and top export destinations such as USA, France and China. On the other hand, the region cannot meet the demand for milkfish and tilapia, although it produced 9,300 tons of milkfish and 1,800 tons of tilapia in 2002.

#### **Problems and Constraints**

35. The main problem that have kept farmers and fisher folks in the area at a relatively subsistence level are: i) low productivity and poor quality of agricultural and

- aquaculture products, ii) limited opportunities to improve the livelihood of farmers / fisher folks, and iii) inefficient utilization of the resources available in the area.
36. In production of agricultural products, i) peace and order, ii) farming practice related to lack of capital and poor access to improved farm inputs as well as support services, iii) insufficient good planting materials, iv) lack of irrigation facilities, and v) traditional upland farming which is generally mono cropping of cassava/corn/banana are the constraints.
  37. The personnel complement for research work is limited and thus output of adaptive research is limited, although the research and extension system is in place. This has affected the work of the extension workers. Capacity building of extension workers is also required. However, the ARMMIAC, which has just been installed and are supposed to be the center of R, D and E, have yet to be fully functional. Insufficient operating funds as well as lack of transportation facilities also causes inefficient extension work. ✓
  38. The formal credit institutions for agriculture and fishery activities is very limited and most of their branch offices are located in the center of province / town. Naturally, the use of these institutions by farmers / fisher folks is very limited. The activity of private sector including NGOs is also minimal because of the peace and order situation.
  39. The low price offered by buyers during peak harvest season is the main problem in marketing. This is highly related to accessibility of the area and availability of market information. Poor accessibility has made the price offered by buyers low and the remoteness has put farmers ignorant about market conditions.
  40. Problems identified in fisheries can be classified into nine (9) groups, namely, i) coastal / fisheries management practices, ii) institutional capability, iii) production, iv) financial capability, iv) biophysical condition, v) political, vi) technical capability, vii) socio-economic condition of communities, and viii) marketing conditions. Each problem is composed of several sub issues.
  41. Most of the constraints could be addressed through building the capability of institutions, people and communities technically, socially, financially and physically/logistically in aspects related to production technology, marketing, biophysical condition, policy, among others. It also entails bringing back the state of natural fishery habitats like coral reefs, institutional, technical, social and physical or logistical capability.
  42. In seaweed production, insufficient post-harvest facilities, insufficient technical assistance to seaweed growers, lack of information, etc. have influenced the quality of seaweeds.
  43. There is still a great need to developing infrastructure facilities for agricultural and fisheries production, although several donors as well as DAF-ARMM have provided these facilities based on the community needs.
  44. In terms of project implementation, the problems and constraints commonly found are: prevailing unstable peace and order situation; ii) funding constraints, (e.i.,

limitation of GOP counterpart funds, and difficulty of LGUs to provide equity contribution for national funded projects as well as inadequate and untimely release of funds); and iii) difficulty and high cost of transport of construction materials to island provinces.

45. The sustainability of existing infrastructure facilities, especially farm to market roads is a bigger issue as these are increasingly deteriorating due to deficiencies in maintenance by Local Government Units (LGU). Although this is common to LGUs nationwide, it is more pronounced in the ARMM as majority of these LGUs are classified under the 5th to 6th class municipalities. Thus, internal revenue allotment (IRA) are usually enough only to pay for personal services i.e. salaries and wages.

In the maintenance of facilities, there is still a need to enhance the capability of the farmer beneficiaries in terms of instilling a sense of ownership and capacity building in the O & M of the support facilities provided.

46. The island provinces of Basilan, Sulu and Tawi Tawi have no Provincial Irrigation Officers (PIOs). Hence, implementation of irrigation schemes in these provinces would be through a Memorandum of Agreement between the NIA Regional Office IX and the provincial LGUs. This kind of indirect implementation has often jacked up the project cost and cause delays in implementation.
47. The main constraint in regard to the implementation of the Land Acquisition Distribution of CARP is the lack of a clear direction from DAR-ARMM. In capacity building and organizational strengthening, delays in the receipt of funds from DAR Central hamper the operations. Lack of budgetary support also pose problems in capacity building and strengthening the capability of field staff.

### **Current Development Plans**

48. The Medium-Term Development Plan (2003-2006) of DAF-ARMM, which follows the national thrust, is the main strategy adopted for agriculture and fishery development in the region. It aims to attain sustainable development giving priority to zone development which takes into account natural and social conditions.
49. Other important strategies enumerated in the MTDP are: i) development of supporting facilities; ii) maintenance of peace and order; iii) improving leadership capabilities of LGUs; iv) improvement of communication system; v) rural electrification to encourage efficient preservation of agriculture and fishery products; and v) rehabilitation of watershed.
50. In fisheries, BFAR-ARMM aims to achieve nine (9) key objectives in year 2003, to wit:
- a. To attain increased fish production from sustainable aquaculture and sustained yield of inland fisheries within the limits of acceptable environment use
  - b. To enhance the quality of life of the marginal users of aquatic resources
  - c. To promote long-term sustainability and enhancement of fishery resources

- d. To achieve equitable access to fishery resources for the socio-economic uplift of subsistence fisher folks
- e. To enforce existing laws
- f. To provide adequate infrastructure and support services
- g. To improve the capabilities of extension workers as well as that of their clientele for smooth satisfactory and cost-effective execution of training/extension program
- h. To ensure the sustainability of appropriate fisheries technologies for adoption by fisher folks, fisheries industries and other constituents

**Proposed Development Thrust**

- 51. The basic thrusts for agricultural and fishery development are: a) to promote suitable land uses considering the natural and socio-economic conditions; b) to increase the productivity in agriculture and fishery through the enhancement of technical as well as institutional capability; c) to maximize the opportunities for enhancement of livelihood opportunities to rural communities through the improvement of rural infrastructure, marketing and strengthening existing organizations etc.; and d) to promote sound development to make a balance between economic development and sustainable environmental and resource management.
- 52. The objectives in agriculture are: i) food security, ii) diversification, iii) market-oriented production/products, iv) involvement of private sector, v) effective R & D and extension; and vi) community empowerment.
- 53. In fishery the goal is to serve the best interests of all the stakeholders. These are: i) quality improvement and increase productivity; ii) promotion of improved coastal resource management iii) enhancement of fishery resource management capacity of LGUs; and iv) improvement in BFAR's research, development and extension capability.
- 54. In the implementation of infrastructure projects, project sustainability should be addressed by paying attention to the i) size of project (project implementation is often hampered by lack of GOP counterpart funds.); ii) project management (the PMO should also be established at the field level.); and iii) future maintenance.
- 55. A long list of projects to help attain the goals of the development thrusts proposed by the Study is presented below.

**Agriculture**

- a. Agricultural Technicians/Farmers training and demonstration on rice-based farming system
- b. Training for extension workers on newly generated farming systems or farm diversification technologies
- c. Farm diversification in upland areas
- d. Irrigation development (Rehabilitation / construction of NIPs / NISs)
- e. Irrigation development (Rehabilitation / construction of CIPs / CISs)

- f. Irrigation development (Construction of GWIPs)
- g. Establishment of dual-purpose small ruminant breeding farm
- h. Establishment of dual-purpose livestock farm
- i. Animal dispersal
- j. Distribution of planting materials
- k. Construction of a regional training center for extension workers in the central Experiment Station of ARMMIARC
- l. Renovation of a room in one of ARMMIARC buildings to be made into a certified seed laboratory with necessary equipment.

#### Fisheries

- a. Capacity building of BFAR for resource assessment including establishment of fish health and cyanide detection laboratories
- b. Capacity building of coastal LGUs in resource management and law enforcement including community empowerment
- c. Demonstration/training for fisher folks on fish cage production (marine and fresh water)
- d. Establishment of seaweed nurseries and seaweed demonstration farms
- e. Renovation of freshwater fish farm
- f. Renovation of sea garden
- g. Seaweed seedling dispersal
- h. Fingerlings / brood stock dispersal

#### Post-harvest / Marketing Infrastructure and Others

- a. Rehabilitation / construction of farm-to-market roads
- b. Construction of multipurpose drying pavements
- c. Construction of stilt dryers
- d. Construction of warehouses
- e. Provision of community-based processing facilities (e.g., rice/corn mills, corn shellers, coffee de-huller and banana chip chopper)
- f. Establishment of Techno/Demo seaweed/fish processing plants
- g. Establishment of ice plant and cold storage
- h. Establishment of Techno/Demo fruit processing plants
- i. Construction of trading posts, livestock auction market and slaughterhouse
- j. Capacity building for farmers / fisher folks, technicians and LGUs
- k. Advocacy regarding updated relevant laws, rules, regulations and projects on crops, livestock and fisheries

56. Anchor programs/projects for the agriculture - fishery sector were identified based on the development thrusts and projects / programs proposed by ARMM as well as other related agencies. For agricultural development, four (4) programs are proposed as follows:

#### Irrigation Development Projects (mainly in Maguindanao and Lanao del Sur)

- i. Rehabilitation / New Construction of National Irrigation Systems/Projects
- ii. Rehabilitation / New Construction of Communal Irrigation Systems/Projects

### iii. Development of Groundwater Irrigation Projects

#### Integrated Agricultural and Rural Development in Upland Area (mainly Lanao del Sur and island provinces)

The project mainly aims to assist the communities in upland area in making their upland farms more viable through diversification of crops and farming systems. The project would include the provision of agricultural extension services improvement of farm-to-market roads, provision of post-harvest facilities, establishment of water supply and organizational strengthening.

#### Reinforcement of Function of ARMMIARC

The integrated agricultural research in ARMM, (ARMMIARC) has just been established, but not yet fully functional as expected. There is a particular need to construct a training center in the ARMMIARC Central Experiment Station and install required equipment / facilities for research work so that it could function as a center of agricultural research and extension in the region.

In addition, seed certified laboratory is also needed. A room in one of the buildings of the Central Experiment Station should be renovated and made as a seed certification laboratory and necessary equipment procured. It would help facilitate the use of certified rice seeds by rice farmers in the area.

#### Training of Agricultural Technicians (ATs) and Leading Farmers on Rice Based Farming System

Rice farmers in the area still need to be trained on rice-based farming systems. Considering the activities that PhilRice has undertaken, said entity is considered the most capable institution to provide training on the matter. However, the training should be tied to irrigation development rather than being implemented independently.

#### Establishment of Breeding Station for Dual Purpose Small Ruminants

A dispersal program of dual-purpose small ruminants would be effective in enhancing the livelihood of farmers in the area, especially upland farmers in Lanao del Sur and the island provinces. In order for the scheme to be sustainable, the establishment of breeding farm is necessary.

57. On the other hand, the following four (4) anchor projects / programs were selected for fishery development.

#### Improvement of Quality of Marine Products through Establishment of Drying Facilities

This aims to improve the quality of marine products (seaweeds and dried fish) in the island provinces through the establishment of drying facilities (e.g., stilt dryers and/or drying pavements). This could be tied up with a coastal resource management program which consists of: i) reforestation of mangrove, ii) community organization, and iii) assistance in livelihood development of communities / organizations.



### Capacity Building of LGUs for Proper Coastal Management

Many coastal municipalities need assistance in managing their territorial water since there have been rampant encroachment by commercial fishing vessels. Assistance shall focus on: i) institutional capability building, ii) logistics and equipment support (patrol boats, communication facilities, GPS, etc.), and iii) policy making.

### Increase of Production and Improvement of Quality of Seaweeds

The present technology on seaweed farming has to be upgraded / improved through the rehabilitation/establishment of nurseries and development of demonstration farms with provisions for necessary training.

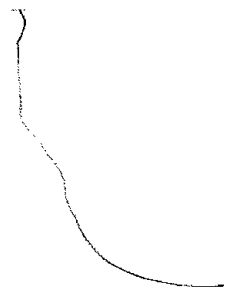
### Improvement / Rehabilitation of Municipal Ports

Most of the existing municipal ports / fish landing centers in the area are generally wood-based with insufficient capacity. There is a need to renovate/upgrade the ports/ fish landing centers in strategic sites of the island provinces and the municipalities around Lake Lanao. However, an inventory survey on existing ports should be undertaken before implementation to identify the strategic sites and the status of facilities.

# ***CHAPTER 1***

## ***INTRODUCTION***

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## 1. INTRODUCTION

### 1.1 Objectives of the Study

The objectives of the Study are:

- a. to study and better understand the existing situation;
- b. to analyze the existing conditions, problems and needs of the agriculture-fishery sector; and
- c. to formulate programs/projects that JICA can promote, considering both aid strategy and viable approaches specially tailor-fit for ARMM.

### 1.2 Coverage and Limitations

The survey area – the Autonomous Region in Muslim Mindanao (ARMM) - was created in 1989 by Republic Act No. 6734, as amended. It is composed of the provinces of Lanao del Sur, Maguindanao, Sulu, Basilan and Tawi-Tawi. It has its regional center in Cotabato City, which is in the province of Maguindanao, but not a part of the autonomous region <sup>1/</sup>.

The provinces in the autonomous region are briefly described hereunder.

#### Maguindanao

<i>Location</i>	Maguindanao is in central Mindanao. It is bounded on the north by Lanao del Sur, on the east by North Cotabato, on the west by the Moro Gulf and on the south by Sultan Kudarat.
<i>Land</i>	The eastern side of the province is part of the Cotabato plains crisscrossed by the Rio Grande de Mindanao and its tributaries. The western part is mountainous, except the area around Cotabato City at the mouth of the great Mindanao River.

#### Lanao

<i>Location</i>	Lanao del Sur is in Northern Mindanao, bounded on the north by Lanao del Norte, on the east by Bukidnon, on the west by Illana Bay, and on the south by the provinces of Maguindanao and Cotabato.
<i>Land</i>	<p>Lanao del Sur forms the western portion of the extensive plateau of Northern Mindanao. Adjoining Illana bay on the southeast are a narrow coastal plain and rolling hills that give way to mountain ranges along the boundary with Cotabato and lowlands going east to the boundary of Bukidnon.</p> <p>Lake Lanao, around which most of the province's towns are located, is the second largest lake in the country. It covers 357 km<sup>2</sup> and is 700 meters above sea level. The Agus River that flows for 30 km into Iligan bay is the outlet of the lake.</p>

<sup>1</sup> For a more detailed discussion of the region and background to its creation, please see the Volume on Project Description and Socio Economic Profile.



**Basilan**

<i>Location</i>	Basilan is an island province across the tip of the Zamboanga Peninsula in Western Mindanao. The bodies of water surrounding it are Basilan Strait on the north, Moro Gulf on the east, Sulu Sea on the west, and Celebes Sea on the south.
<i>Land</i>	The province consists of volcanic, hilly main island and 61 smaller islands.

**Sulu**

<i>Location</i>	Sulu lies midway between Basilan and Tawi-Tawi in southern Mindanao. It is surrounded by Sea; on the north and west, the Mindanao Sea on the east, the Celebes Sea.
<i>Land</i>	The province consists of four island groups: Pangutaran, Tapul and Samales that cover 157 islands and islets. Jolo is the name of the capital town, which is also the name of the island, and the group of islands to which it belongs.

**Tawi-Tawi**

<i>Location</i>	Tawi-Tawi is the southernmost province of the country. Across its water is the state of Sabah in East Malaysia. Tawi-Tawi is bounded by the Sulu Sea on the north and west, and by the Celebes Sea on the east and south.
<i>Land</i>	<p>The province consist of three island groups covering 307 island and islets. The Tawi-Tawi island group includes the islands of Tawi-Tawi, Bongao, Simunul, Sibutu, and Sitangkai. The Cagayan de Tawi-Tawi (also called Cagayan de Sulu) Island group is between the southern tip of Palawan and Sulu archipelago. The Turtle Island group is a mere 22 km from Sandakan, Sabah.</p> <p>The island of Tawi-Tawi is a continuous range of low, rolling hills and verdant forests. Except with the use of light boats, navigation is difficult between the smaller islands in the Tawi-Tawi Island group. This is because of the presence of extensive reefs. The capital town, however, has a deep harbor.</p>

**Marawi City**

<i>Location</i>	<p>Marawi City - is in the province of Lanao del Sur, the only chartered city in the geographic area of ARMM whose population opted to join the autonomous region. This city is considered the center of Philippine Muslim culture. It is the only city in the country where Islam is the religion of 92 percent of its population.</p> <p>The boundaries of the City are: on the north the municipalities of Kapai and Saguian, on the south Lake Lanao, on the east by the municipalities of Bubong and Ditsaan Ramain, and on the west by the municipalities of Marantao and Sauian.</p>
<i>Land</i>	It is surrounded by beautiful rolling hills (Signal, Angolo and Arumpac) and mountain (Mt. Mupo). The Angolo hill served as a natural watchtower of Lake Lanao. On the other hand, Mt. Mupo is known for its beautiful and perfect cone shape and untouched tress.

**1.3 Data Collection and Its Limitation**

Data used in this study were gathered from concerned regional and provincial officials, primarily the Director or Chief Agriculturist of the Provincial Agriculture Office, DAF, the Provincial Statistician, BAS and the Provincial Agrarian Reform Officer, DAR. Some data were also obtained from the Provincial Planning and Development Office. In some cases, especially as part of the Consultation-Workshop, data and related information were also obtained from Municipal Agriculturist who were able to attend the Workshop. At the same time, a survey of sample municipalities in all the provinces was also undertaken to obtain supporting data.



Data generated from different sources are sometimes not consistent, thus, conclusions are sometimes made with some reservations. Implications from the survey results are sometimes also used in making conclusions. It may also need pointing out that this report has not benefited from any discussion with farmers, farmer leaders and traders in farm commodities and farm inputs in the region.

#### 1.4 Schedule of Work

The general work schedule of the agriculture - fishery sector is summarized as follows:

Period	Activity
1 <sup>st</sup> week (2 <sup>nd</sup> -3 <sup>rd</sup> wk of August)	Inventory and Review of Available ARMM Documents/Previous Studies
2 <sup>nd</sup> week (3 <sup>rd</sup> -4 <sup>th</sup> wk of August)	Meetings with JICA, JICA Consultants, ARMM Officials and Concerned In-Country Japanese Experts Preparation of Data Collection Forms and Questionnaire
3 <sup>rd</sup> week (4 <sup>th</sup> wk of August – 1 <sup>st</sup> wk of September)	Initial Site Visit and Reconnaissance/Field Inspection Collection of Basic Data
25 August – 15 October 2003	Collection of Basic Data
3 <sup>rd</sup> – 6 <sup>th</sup> week (2 <sup>nd</sup> – 4 <sup>th</sup> wk of October)	Provincial Consultation-Workshop and Data Collection
7 <sup>th</sup> – 10 <sup>th</sup> week (4 <sup>th</sup> wk of September – 3 <sup>rd</sup> wk of October)	Data Collection and Analyses Identification of Issues and/or Problems
11 <sup>th</sup> – 12 <sup>th</sup> week (3 <sup>rd</sup> – 4 <sup>th</sup> wk of October)	Preparation of report

**CHAPTER 2**  
***OVERALL SITUATION OF THE AGRICULTURE  
AND FISHERIES SECTOR IN THE REGION***

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## 2. OVERALL SITUATION OF THE AGRICULTURE AND FISHERIES SECTOR IN THE REGION

### 2.1 Overall Performance of the Agriculture and Fishery Sector

The following table shows the overall performance of the agriculture - fishery sector in the regional economy as well as the national economy.

**Table 2-1 Some Economic Indicators Situating ARMM in the National Economy**

Item	1998	1999	2000	2001
Gross Regional Domestic Product (Current, Million PhP)				
Philippines	2,665,060	2,976,905	3,308,318	3,639,980
ARMM	26,641	27,862	30,925	33,527
ARMM as Percent of Philippines	1.02%	0.94%	0.93%	0.92%
Per Capita Gross Regional Product (Current Prices)				
Philippines	35,461	38,770	42,190	45,453
ARMM	11,941	12,247	13,335	14,156
Gross Value Added in Agriculture, Fisheries and Forestry (Current Million PhP)				
Philippines	451,645	510,494	525,873	549,378
(Share in GNDP)	(33%)	(33%)	(30%)	(28%)
ARMM	11,796	13,031	15,875	17,863
(Share in GRDP)	(44%)	(47%)	(51%)	(53%)
Share in National GVA of Agri-sector	3%	3%	3%	3%

*Source of Basic Data: Bureau of Census and Statistical Yearbook 2002*

While the share of agriculture - fishery sector in GNDP has slightly declined from 33% in 1998 to 28% in 2001, the one in the ARMM domestic product (GRDP) has increased from 44% to 51% during the same period. This shows that the agriculture - fishery sector in ARMM plays a vital role in the region's economy and its importance has become higher.

## 2.2 National Programs

### 2.2.1 Agriculture and Fisheries Modernization Plan

The Agriculture and Fisheries Modernization Act of 1997 is summarized in Medium-Term Philippines Development Plan for 2001-2004 prepared by the National Economic and Development Authority and published in November 2001. This is quoted hereunder.

"The Agriculture and Fisheries Modernization Act (AFMA) of 1997 is a comprehensive legislation that provides for the country's blueprint for the sector's modernization and rural development". Its major provisions are shown in Box 1.

**Box 1: Major Provisions of AFMA**

"1. Reforms and reorientation in the provision of public production and marketing services -

- ◆ Focus and concentration of public investments on identified Strategic Agriculture and Fisheries Development zones (SFDZs), which are defined geographical areas of competitiveness and comparative advantage based on biophysical and socioeconomic endowments;
- ◆ Crafting and execution of medium and long-term Agriculture and Fisheries Modernization Plans (AFMAs), in full consultation with stakeholders and based on the SAFDZs;
- ◆ Phase-out and consolidation of directed credit into the Agro-Industry Modernization Credit and Financing Program (AMCFP);
- ◆ Specific principles and guidelines for irrigation and watershed development, providing for economic cost recovery, and the devolution of communal systems to LGUs, promotion of private sector-led development of minor systems;
- ◆ Establishment of the National Marketing Assistance Program (NMAP) and National Information Network (NIN); DA-DPWH-LGU coordination in the formulation and implementation of the Agriculture and Fisheries Infrastructure Plan; and
- ◆ Product standardization and consumer safety, through the establishment of the Bureau of Agriculture and Fisheries Products Standards (BAFPS)."

"2. *Human resource development.* Rationalized and strengthened National Agriculture and Fisheries Education System (NAFES) that offers high quality agriculture and fisheries education at all levels."

"3. *Research and development.* A dynamic, client-responsive National Research and Development System in Agriculture and Fisheries (NARDSAF) under the coordination of the Department of Agriculture."

"4. *Extension.* Integrated, strengthened and rationalized system of National Extension System in Agriculture and Fisheries (NESAF) built on strong partnership among the NGAs, LGUs, civil society and private sector that is fully responsive to the needs of the fishing and farming communities."

"5. *Rural non-farm employment.* Policies and programs designed to employ workers efficiently in the rural areas through a basic needs approach, promotion of rural industrialization."

"5. *Rural non-farm employment.* Policies and programs designed to employ workers efficiently in the rural areas through a basic needs approach, promotion of rural industrialization."

"6. *Trade and fiscal incentives.* Exemption of all agriculture and fisheries enterprises from tariffs and duties in the importation of specific types of inputs."

"7. *Budgetary appropriation provisions.* Provides for an initial year ₱20 billion funding for AFMA and ₱17 billion annually for the next 6 years. For period 2001-2004, and annual budget of ₱20 billion will be allocated to implement AFMA, providing for the needed steady stream of public investment support to agriculture and fisheries modernization."<sup>1</sup>

Source: *Medium-Term Philippines Development Plan for 2001-2004.* National Economic Development Authority, November 2001

<sup>1</sup> Quoted from the National Economic and Development Authority – Medium-Term Philippine Development Plan

AFMA mandates the identification of suitable agricultural land within the alienable and disposable land, setting these aside and protecting the same from unreasonable conversion. The identified areas are referred to as the Network of Protected Areas for Agriculture and Agro-industrial Development (NPAAAD). This provision is designed to ensure the future expansion of Strategic Agriculture and Fisheries Development Zones (SAFDZs) that are to be identified on the basis of biophysical and socio-economic criteria. SAFDZs are to be incorporated into the local government land use and zoning plans. These strategic development zones lends well to the basic approach for AFMA, that is, the adoption of integrated area development. The NPAAAD area in ARMM is shown in (the summary table) Annex Table 2-1.

### 2.2.2 The Ginintuang Masaganang Ani Program

Corollary to the SAFDZ strategy of AFMA, commodity specific program is also implemented. This is called the “Ginintuang Masaganang Ani”. This program aims to push productivity and competitiveness in the priority commodities as shown below.

<i>GMA Rice</i>	This aims to progressively increase sufficiency in domestic production in rice. Activities during the medium term calls for massive promotion in the use of certified seeds, shift in efforts to rehabilitation of existing irrigation systems and promotion of small, farmer controlled systems, nationwide expansion of Farmers' Field Schools using knowledge-intensive modalities in technology promotion and extension, post harvest loss reduction and promotion of hybrid rice technology.
<i>GMA Corn</i>	This aims to transform the current farm clusters into modern agribusiness systems through the establishment of Corn-based Agribusiness Systems Technology (COAST) demonstration projects to generate private sector investments through joint venture or “cooperative” arrangements with farmers' cooperatives in farm clusters.
<i>GMA High Value Crops</i>	This aims to promote income, employment and livelihood diversification among existing farming systems within the context of SAFDZ. Its major strategies include the nationwide development and promotion of high quality planting materials, development of harmonized product standards, cold chain systems and appropriate modern post harvest loss reduction systems.
<i>GMA Livestock</i>	The target for this program is increase in the competitiveness and sufficiency in meat and meat products. The major thrust includes the improvement and conservation of the genetic pool, the control and eradication nationwide of livestock pests and diseases, particularly foot and mouth disease, promotion of modern production and post-production technologies targeting both the domestic and foreign markets.
<i>GMA Fisheries</i>	The program on fisheries involves the intensification of productivity aquaculture, rejuvenation of the municipal fisheries, expansion of marine fishing grounds in the adjacent high seas, promotion of captive marine fisheries systems and improvement of fisheries port infrastructure, post harvest and processing facilities, including the promotion of Hazard Analysis Critical Control Point (HACCP) systems to improve quality assurance and food safety in fish and fisheries products.

**2.3 Present Administrative Structure of Department of Agriculture and Related Agencies****2.3.1 Department of Agriculture (DA Central)**

The Department of Agriculture at central (DA Central), as presently organized has its arms reaching only to the regional level. The different bureaus that used to operate down to the provincial and municipal levels have all been relegated to performing staff functions. These are represented in the regional organization of the department mostly as division supporting the Regional Director and the department activities in the region.

The agricultural extension service has been devolved to the local government units. Thus, it is quite a sad phenomenon to sometimes find the lack of agricultural extension worker in places where they are most needed. This happens when the local government unit is not able to hire the required number of workers.

**2.3.2 Department of Agriculture and Fisheries (DAF-ARMM)**

In regard to the Autonomous Region in Muslim Mindanao, DA Central do not have direct supervisory powers over the operations of what is called in the said region the Department of Agriculture and Fisheries (DAF). Budget of DAF (salaries, maintenance, operating and other expenses, including capital outlay) is part of the annual appropriation to ARMM.

DAF has maintained the original set-up of the DA Central. In regard to the agricultural extension service, DAF maintains provincial and municipal agriculture offices. In addition, since the devolution of the agricultural extension service to local government units came earlier than the passage of the ARMM charter, there are in all the provinces also Provincial and often Municipal Agriculturist hired by the local government. For example, the provincial government of Maguindanao hired Agricultural Technicians assigned to 16 of the 18 municipalities comprising the province. All these technicians work under the DAF Municipal Agricultural Officer. The province-hired Provincial Agriculturist works closely with the DAF Provincial Agriculture Officer and most of the program coordinators of the Provincial Agricultural Office are personnel hired by the provincial government. (Attachment Figure 1 is the organizational structure of DAF while Attachment Figure 2 represents a normal organizational set-up of a Provincial Agriculture Office, DAF)

In the pursuit of activities under a Nationally Managed Programs, either funded from national appropriation or foreign assistance, DAF, if it wishes to implement the same in the autonomous region has to enter into a Memorandum of Understanding with DA Central. Details of undertakings by both parties are spelled out in such memorandum.

### **2.3.3 Department of Agrarian Reform (DAR-ARMM)**

In regard to the Department of Agrarian Reform, the organizational structure previously established in ARMM and the provinces have been maintained. The Department (DAR Central) has still provided support to the regional, provincial and municipal offices to carry out the same activities as those in the other regions. This is primarily the pursuit of the goal towards land tenure improvement and beneficiary development. The Organizational structure of DAR-Provincial Office is provided as Attachment Figure 3.

### **2.3.4 Other Agencies**

With respect to the agencies under the administrative supervision of the DA Central, but whose existence is a result of Congressional action, i.e., through legislation, e.g., the National Irrigation Administration, Philippine Coconut Authority, Philippine Dairy Authority, National Food Authority and others, their presence in the different regions is dictated by available corporate funds<sup>2</sup> and importance of the area to their mandated functions. At this point in time, these agencies are only present within the borders of ARMM if they had previously organized one in the area.

## **2.4 Donor Activities in the Agriculture and Fisheries Sector**

There are many projects implemented by multilateral and bilateral donors in the Agri-Fish Sector as shown in Table 2-2. These are the projects that includes sites in ARMM area. More detailed information of the projects are given in Annex "A", Tables A1-A5. Although the Study was able to get the list of the implemented, on-going and pipeline projects, it was not able to identify the exact location of most of the projects listed.

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<sup>2</sup> Budgetary allocation to these agencies is considered government subscription to their authorized capitalization.



Table 2-2 List of Completed and On-going Projects

## (1) Completed

Donor	Project	Amount Committed
<b>a. Multilateral</b>		
World Bank	Second Community Irrigation Development Project	US\$ 42.9 M
ADB	Kabulunan Irrigation and Development Project	US\$ 48.0 M
UNFPA	Population and Development Planning at the Local Level	US\$ 1.6 M
IFAD/GOP	Support Project for the Indigenous Communities and MNLF in the Zone of Peace within ARCs	US\$ 0.8 M + P 33.0 M
UNDP/FAO	Development of Agri-Based Livelihood	US\$ 0.7 M
<b>Bilateral</b>		
USAID	Micro Enterprise Access to Banking Services in Mindanao	US\$ 6.3 M
	Building Unity for Continuing Coconut Industry Reform	US\$ 0.3 M
	Credit Union Empowering and Strengthening	US\$ 2.7 M
	Growth with Equity in Mindanao (GEM)	US\$ 35.0 M
Aus Aid	Philippine-Australia Special Community Assistance to SZOPAD	A\$ 1.2 M
CIDA	Cooperative Business Development Program	P 40.7 M
British Gov	Emergency Livelihood Assistance Program	US\$ 5.0 M
New Zealand Gov	In-country Training Program on Project Management Techniques	NZ\$ 0.1 M/yr
EU	SZOPAD rehabilitation Program	EU 2.0 M
JBIC	Forestry Sector Project	Yen 9,204 M
	Environmental Infrastructure Support Credit Program	Yen 5,168 M
	Agrarian Reform Infrastructure Support Program (ARISP)	Yen 6,150 M
JICA	Kennedy Round Two-Food Production Aid (KR2)	-
	Specialized Training Course on Rice-based Farming Systems for Farmer Leaders and Agricultural Technologists in ARMM	-

## (2) On-going

Donor	Project	Amount Committed
<b>a. Multilateral</b>		
UN	UN Multi-donor Program Phase III	US\$ 25.0 M
WB	Mindanao Rural Development Project	US\$ 1,670.0 M
	Second Rural Finance Project	P 22.0 M
	Third Rural Finance Project	P 35.0 M
IFAD	Western Mindanao Community Initiative Project (WMCIP)	P 678.3 M
ADB	Agrarian Reform Communities Project	US\$ 97.0 M
	Southern Philippines Irrigation Sector	US\$ 103.0 M
	Infrastructure for Rural Productivity Enhancement Sector	P 6,849.0 M
	Grain Sector Development Program (GSDP)	P 4,882.0M
	Infrastructure for Rural Productivity Enhancement Sector Project (InfRES)	P 6,849.0M
UNDP/FAO	Development of Agri-Based Livelihood	US\$ 0.7 M
<b>Bilateral</b>		
USAID	Livelihood Enhancement and Peace Project (LEAP2)	US\$ 5.0 M
	Growth with Equity in Mindanao Phase 2	US\$ 54.8 M
Netherlands Gov	Environmental Protection in Support to Sustainable Livelihood Component in Lake Lanao	US\$ 0.7 M
CIDA	Socio-economic Development through Cooperatives in the Philippines (SEDCOP)	C\$ 9.7 M
	Development Partnership for Armed Conflict Victims	US\$ 0.8 M

Donor	Project	Amount Committed
	Mindanao Program for Peace and Development	US\$ 0.5 M
	Upland Farming Model Village Project	US\$ 0.9 M
Assi Development Foundation-Tabang Mindanao (CIDA)	Integrated Return and Rehabilitation Program for Civilian War Victims of Mindanao	US\$ 0.9 M
New Zealand Gov	Small Project Fund Program	NZ\$ 0.2 M/yr
EU	Support to Agrarian Reform Communities in Central Mindanao (STARCM)	P 243.5 M
	SZOPAD Rehabilitation Project	P 249.0 M
JBIC	Malitubog-Maridagao (MALMAR) Irrigation Project I	Yen 7,387 M
USAID	Community-Based Mangrove Forest Management	US\$ 12.0 M
USAID	Integrated Rural Accessibility Planning (IRAP)	-

## **2.5 Lessons Learned in the Implementation of Past Projects**

### **2.5.1 Problems Observed**

A common organizational set-up among projects implemented by operating agencies is to create a Coordination Committee and a Project Management Office (PMO). If the project is implemented nationwide, the PMO would be at head office. On the other hand, the PMO could be at a regional center if project coverage is within a region or a number of adjacent regions. Project Management is normally lodge with PMO. However, actual implementation in the field is undertaken by the personnel at the regional and provincial levels. Where consultants are involved, they would also be primarily stationed at the Program Management Office. Problems often met are in communication as well as the flow of documents through the organizational protocol (PMO – Regional – Provincial Offices).

In addition, most of the field level personnel are not familiar with the procedure of foreign funded projects, especially with respect to the process and preparation of documents on fund reimbursement. Thus the usual reason cited in operation is delay in fund releases because of slow process of the required documents, even where budgetary allocations are available in the head offices.

On the other hand, the participation of prospective beneficiaries is now getting to be the norm in the implementation of the project. Where consultants are involved, their technical knowledge alone would not suffice. They have to have a knack for inter-personal relationship, both with the local field officers and the beneficiaries.

**2.5.2 Lessons Learned**

What seems to be important in the implementation of foreign assisted project is to have the Project Management Unit that is directly involved in operations at the field level. When field officers of the implementing department are needed to perform tasks (these should be specified) for the project, proper assessment of the time the field personnel can make available to the project and the tasks they have to perform have to be made. In addition, the field office unit has to be provided sufficient funds, especially for maintenance and other operating expenses. It may even be important to provide incentive bonus or allowance to the assigned field personnel.

Systems and procedures, especially documentation requirements and reimbursement schemes have to be discussed and properly understood, before the start of implementation. This should help avoid possible delays.

In terms of projects that require a lot of interactions between implementing personnel and the beneficiaries, i.e., organizational strengthening and organization of farmer groups, utilizing the services of a local NGO with capability supported by track record, appears to have advantages.