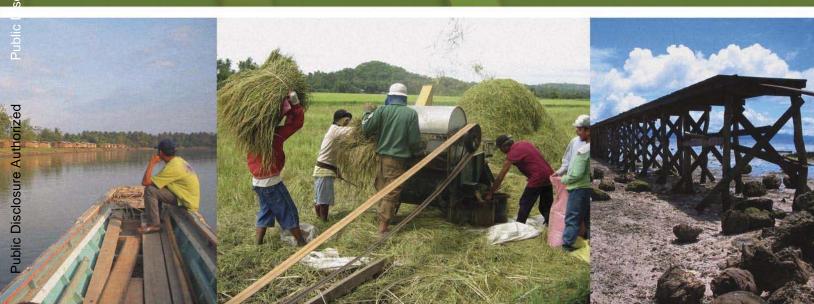
Joint Needs Assessment for Reconstruction and Development of Conflict-Affected Areas in Mindanao



RURAL DEVELOPMENT REPORT

VOLUME 3

The report was produced jointly by the Government of the Philippines, International Funding Agencies, and Mindanao Stakeholders



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Acronyms and Abbreviations

A and D	Alienable and Disposable	DOTC	Department of Transportation and
ABEP	Accelerated Barangay Electrification	DDWII	Communications
ADD	Program	DPWH	Department of Public Works and
ADB	Asian Development Bank	DCWD	Highways
AFP	Armed Forces of the Philippines	DSWD	Department of Social Welfare and
ANR	Assisted Natural Regeneration	EMD	Development
APL	Adaptable Program Lending	EMB	Environmental Management Bureau
ARC	Agrarian Reform Community	EMP	Environmental Management Plan
ARCDP	Agrarian Reform Communities	EPIRA	Electric Power Industry Reform Act
ARCP	Development Project	ERE	Expanded Rural Electrification
ARCP	Agrarian Reform Communities	ERC	Energy Regulatory Commission
ADICD	Project	EU	European Union
ARISP	Agrarian Reform Infrastructure	FAO	Food and Agriculture Organization
4 D 3 4 3 4	Support Project	FAP	Foreign Assisted Project
ARMM	Autonomous Region in Muslim	FELCRA	Federal Land Consolidation and
A CED	Mindanao	PPI DA	Rehabilitation Authority
ASFP	ARMM Social Fund Project	FELDA	Federal Land Development
BAS	Bureau of Agricultural Statistics	PPC	Authority
BDA	Bangsamoro Development Agency	FFS	Farmer Field School
BEIS	Basic Education Information	FMB	Forest Management Bureau
DEAD	System	GAA	Government Appropriation Act
BFAR	Bureau of Fisheries and Aquatic	GEM	Growth with Equity in Mindanao
DIIC	Resources	GOP	Government of the Philippines
BHS	Barangay Health Stations	GRP	Government of the Republic of the
BIARSP	Belgian Integrated Agrarian Reform	IID	Philippines
DIVIC A	Support Project	HD	Human Development
BWSA	Barangay Water and Sanitation	HH	Household
	Associations	IA	Irrigators' Association
CAA	Conflict-Affected Area	IBRD	International Bank for
CAP	Conflict-Affected Province		Reconstruction and Development
CAR	Cordillera Autonomous Region	IDP	Internally Displaced Person
CIS	Communal Irrigation System	IEC	Information Education and
CO	Community Organizer		Communication
CRM	Coastal Resource Management	IFAD	International Fund for Agricultural
CV	Community Volunteer		Development
DA	Department of Agriculture	IFC	International Finance Corporation
DAR	Department of Agrarian Reform	IP	Indigenous People
DC	Development Catalyst	IPP	Independent Power Producer
DepEd	Department of Education	IPRA	Indigenous Peoples Rights Act
DENR	Department of Environment and	IRA	Internal Revenue Allocation
	Natural Resources	IRR	Internal Rate of Return
DND	Department of National Defense	ISA	Irrigator's Service Association
DOE	Department of Energy		

ISLAM	I Sincerely Love All Muslims	OMA	Office of Muslim Affairs
ISWM	Integrated Solid Waste	OPEC	Organization of Petroleum Exporting
	Management		Countries
JBIC	Japan Bank for International	PCO	Public Calling Office
<i>y</i>	Cooperation	PD	Presidential Decree
JICA	Japan International Cooperation	PEO	Provincial Engineering Office
<i>y</i> =	Agency	PEP	Philippine Energy Plan
JNA	Joint Needs Assessment	PFD	Physical Facilities Division
LABRIS	Labangan River Irrigation System	PhP	Philippine Peso
LGU	Local Government Unit	PIO	Provincial Irrigation Office
M&E	Monitoring and Evaluation	PMO	Project Management Office
	Maguindanao Electric Cooperative	PMT	Project Management Team
	Malitubog-Maridagao Irrigation	PNOC-	Philippine National Oil Company-
MALRIP	Malaig River Irrigation Project	EDC	Energy Development Project
MAO	Municipal Agriculture Office	PTCA	Parents Teachers and Community
MEDCo	Mindanao Economic Development	1 1 0.1	Association
11122 00	Council	PWS	Potable Water Supply
MEO	Municipal Engineering Office	RA	Republic Act
MILF	Moro Islamic Liberation Front	RD	Rural Development
MMIP	Malitubog-Maridagao Irrigation	RFU	Regional Field Unit
	Project	RIP	River Irrigation Project
MNLF	Moro National Liberation Front	RIS	Rural Irrigation System
MOA	Memorandum of Agreement	RTDP	Regional Telecommunications
MPB	Multi-Purpose Building		Development Project
MRDP	Mindanao Rural Development	RWSA	Rural Water and Sanitation
	Program		Associations
MRF	Municipal Recovery Facilities	SALT	Sloping Agricultural Land
MTF	Mindanao Trust Fund		Technologies
MTF-RDP	Mindanao Trust Fund-	SBP	School Building Program
	Reconstruction and Development	SEAFDEC	Southeast Asian Fishery
	Program		Development Centre
MTPO	Municipal Telephone Projects	SEDIP	Secondary Education Development
	Office		and Improvement Project
NEA	National Electrification	SEMP	Social Expenditure Management
	Administration		Project II
NEDA	National Economic and	SLF	Sanitary Landfill Facilities
	Development Authority	SOCOT-	South Cotabato Electric Cooperative
NFA	National Food Authority	ECO	•
NGO	Non-Government Organization	SOCCSK-	South Cotabato (Soc), North Cotabato
NIA	National Irrigation Administration	SARGEN	(c), Sultan Kudarat (sk), Sarangani
NCIP	National Commission on		(sar), and General Santos City
	Indigenous People	SPOTS	Solar Power Technology Support
NPA	New Peoples Army		Project
NPC	National Power Corporation	SRA	Social Resource Assessment
NRE	New and Renewable Energy	SRI	Strategic Regional Infrastructures
NTP	National Telephone Program	STARCM	Support to Agrarian Reform in
O and M	Operation and Maintenance		Central Mindanao
ODA	Official Development Assistance	SUKELCO	Sultan Kudarat Electric Cooperative
	•		•

SZOPAD Special Zone of Peace and

Development

TEEP Third Elementary Education

Project

TELOF Telecommunications Office

TFEAM Task Force Engineering Assessment

and Monitoring

TOR Terms of Reference

TransCo Transmission Corporation
TSB Telepono sa Barangay Project

UC Universal Charge

UDP Upland Development Program

UN United Nations

UNDP United Nations Development

Programme

UNMDP United Nations Multi-Donor

Programme

USAID United States Agency for

International Development

USD United States Dollar VHT Vapor Heat Treatment

WB World Bank

WMCIP Western Mindanao Community

Initiatives Project

Executive Summary

Rural development, in general, means enhancing the welfare of the members of the community, a process that involves the sustainable utilization of the available resources. However, there are intervening factors in the process of translating the available resources as a means towards welfare enhancement. In current characterizations, resources are classified into four major categories, namely, natural capital, financial capital, human capital, and social capital.

The fundamental determinant of welfare is the current state of the resources, which is a function of government investments. Essential, too, is how these resources are accessed, controlled, and used by the members of the community. The agrarian structure and institutions that deal with governance and the delivery mechanisms further determine these elements.

Obviously, there is a critical need for interventions to improve the current state of capital available in the conflict-affected areas (CAAs) in Mindanao. Access, control, and use of the available resources result in output either directed as marketed surpluses and/or allocated for subsistence consumption. Marketed surpluses are translated into income and through consumption, affect welfare.

Before such interventions can be drawn up, however, a careful examination of the needs and requirements of the people in the CAAs is required. This is being done under the Joint Needs Assessment (JNA) spearheaded by the World Bank, in preparation for the creation of a multidonor Mindanao Trust Fund-Reconstruction and Development Program (MTF-RDP). The Rural Development (RD) Sector is one of four important sectors that comprise the JNA (see Integrative Report for further details).

The RD Sector comprises three sub-sectors – Agricultural Development, Rural Infrastructure, and Agribusiness and Marketing. The Agricultural

Development sub-component, in turn, includes the following sub-sectors: Crops and Horticulture; Fisheries; Livestock; Post-Harvest and Household Processing; Small-Scale Irrigation; and, Potable Water. Cross-cutting issues such as tenurial concerns, environment, and institutional development are also addressed in the context of rural development.

The two sub-teams of Agriculture and Agribusiness and Marketing undertook field visits to 19 selected municipalities on August 30, 2004 to September 11, 2004. The Rural Infrastructure sub-team, part of the RD Team, carried out its work separately.

At the end of the assessment work, the Team designed a set of interventions within the context of the fundamental relations between resources and institutions. It noted that interventions geared towards enhancing productivity, such as agricultural development, agribusiness, and rural infrastructure, can only be successful if the elements of resource ownership and distribution are considered.

No amount of financial resources can trickle down towards the benefit of the general constituents of the community if the institutions providing for the delivery mechanisms such as the local government units (LGUs) are dysfunctional or inefficient. In addition, the process of resource utilization has environmental consequences, which affects both the environment and the welfare of the community members.

Background on Mindanao

Mindanao is blessed with good agro-climatic endowment. It is rich in mineral resources particularly gold, copper and nickel, as well as limestone. The land area is about 10.2 million hectares (ha). It comprises a large mainland as well as the island provinces of Basilan, Camiguin, Sulu and Tawi-Tawi, and the island city of Samal. Mindanao has a population of almost 20 million in 2004, of which some 68% reside in the rural areas. Of the total population, some 20% are Muslims, 5% Lumads, and 75% descendants of Christian immigrants from Luzon and Visayas.

The Muslims are concentrated in five provinces and two cities: Lanao del Sur and Maguindanao and Cotabato and Marawi cities in the center; and Basilan, Sulu and Tawi-Tawi in the southwest. The Lumads are scattered in many inland areas. Pilipino and Cebuano are the most common dialects. English is spoken by a large part of the population.

Agriculture is the major occupation with Mindanao considered as the food basket of the nation. The region has 1.5 million farms on 3.85 million ha.¹ The dominant crops are coconut, corn and rice. In 2003, the region produced 8 million tons of coconuts (56% of national total), 2.8 million tons of corn (61%), 3.2 million tons of palay (24%), and 4 million tons of bananas (74%). It also produced about 42% of fishery and aquaculture production and some 30% of livestock.

The conflict-affected provinces (CAPs) have a land area of about 5.6 million ha, or 55% of the Mindanao land area. Of this total, some 2.1 million ha were certified Alienable and Disposable (A&D) lands and 3.5 million ha are forestlands. Of the latter, there are 1.9 million ha of established timberlands.

FINDINGS

AGRICULTURAL DEVELOPMENT

The main objectives of this sub-component are to assess the needs of and provide immediate/basic assistance to 19,000 families of internally displaced

persons (IDPs) to enable them to return to their homes; and, to evaluate short to medium-term needs and prepare the ground for sustainable agricultural development.

The first part of the proposed strategy is to assist the returnees in earning a living in the agricultural sector as soon as possible. Speed and timing are important. Assistance should be in place to allow them to be re-equipped quickly to re-start their traditional agricultural activities (farming, fishing, and animal rearing). Assisting the returnees up to harvesting their first crops is necessary as the first step, but not sufficient for them to earn a decent livelihood. Further assistance is needed to allow them to bridge from the immediate requirements towards a more stable and sustainable development path.

Once the basic needs of the returnees are fulfilled and the minimum institutional as well as communal capacities are restored, introducing a vision as well as a direction for a medium to longer term development is required. Major focus would be to maximize the return from the natural resources endowed in Mindanao, while sustaining the environment for future generations.

While the proposed program may be acceptable in achieving the set goals, local institutions are considered inadequate, and the delivery mechanism can present a big impediment to the success of the proposed program. Fundamental guiding principles are necessary regarding: (i) the delivery mechanism of emergency inputs assistance; (ii) the delivery mechanism of small communal infrastructure project such as solar driers or a health center; and (iii) the selection criteria of participating municipalities for implementation.

Selection Criteria

A set of selection criteria of municipalities is required in order to prioritize participating municipalities in the implementation of the program. Progressive municipalities will be selected for early implementation, while less progressive municipalities should have to wait until the criteria are met. This mechanism should motivate the concerned municipalities to improve their governance.

¹ 2002 Census of Agriculture, National Statistics Office

Proposals are classified into two types: Immediate Proposals (one to two years); and Short to Medium-Term Proposals (one to six years).

Immediate Programs

The basic inputs, recommended to be provided for two consecutive crops for IDPs, should include seeds for corn and rice, appropriate fertilizers for the farmers, and fishing equipment for the fisherfolk. In addition, the farmers should be provided the services of draft animals and equipment needed for their immediate land preparation as about 60% of draft animals have been decimated by conflicts.

The IDP households can be provided with chicken and ducks as well as small quantities of vegetable seeds as additional means to complement their future rural income. Other small rural activities that can generate additional income such as seaweed production, or which help reduce losses such as the provision of solar driers are also beneficial to the farming communities during the transitional phase.

Short to Medium-Term Programs

Parallel with the basic assistance to returnees, it is important to assist the affected areas in terms of providing a sense of direction and foundation for sustainable development of the agricultural sector. This calls for the strengthening of the capacity of the extension services, enhancing community organizations, and introducing agricultural practices that can maximize the benefits through the smart development of natural resources in the area.

Activities that can be included in this category are promotion of fruit tree plantation and nurseries, development of fish hatcheries and promotion of fish cage culture, development of small-scale irrigation and potable water supply, capacity building, and community development.

Expected Benefits

These interventions are seen to have multiple benefits including an increase in agricultural production, which will in turn create more jobs and income in the rural communities; strengthened rural institutions such as extension services and community organizations; and, as confidencebuilding measure for the ongoing peace process.

The expected enhancement of agriculture production will be generated in the following domains: (a) field/annual crops due to availability of seeds, inputs, draft animals, irrigated areas, and better extension services; (b) perennial crops such as fruit trees due to the availability of seedling and possibly nurseries; (c) chicken and duck; (d) fish production due to the provision of boats and nets, as well as hatcheries and nurseries for fingerlings; and (e) agriculture production will be saved and value added will be increased due to post-harvest facilities and household agro-processing.

Issues and Risks

However, there are substantial challenges and risks in the implementation of the proposed programs.

These include the following:

- The need to establish (and maintain) peace and order in Mindanao.
- The capacity of the LGUs and local groups to implement the programs in a timely and efficient manner.
- The ability of LGUs to sustain the development momentum with their own resources once the project ends.
- Currently, land ownership is based more on usufruct rights rather than on legal grounds. This would be particularly significant in cases where tree crops are to be planted, which need a long period to bear fruit and are also capital intensive to develop.
- In the absence of formal channels for obtaining credit at normal interest rates, the prevailing high interest rates (ranging from 10% to 20% per month), which farmers are now obliged to pay to the traders or input suppliers to obtain their seeds and fertilizer will make most types of farming uneconomic.
- The absence of adequate farm-to-market roads and/or their maintenance, quite common in Mindanao, makes the movement of products or inputs out or into the farms highly expensive and prohibitive.

- Institutions are generally weak, ranging from unorganized farmers to poor governance and efficiency of LGUs These need substantial strengthening.
- The lack of transparent and accountable governance.
- There are no effective agricultural associations or co-operatives for support in the areas of marketing, input supply, or credit facilities.
- Inadequate development and utilization of water resources due to the inability of irrigators associations to maintain the existing structures in working order.

AGRIBUSINESS AND MARKETING

Mindanao is the agribusiness center of the Philippines. With its rich mix of natural resources, it is the perfect location for multinational corporations dealing with agricultural products. Several corporations are now operating in Mindanao and exporting to the global market fresh bananas, fresh and canned pineapples, processed and canned tuna, seaweed and carrageenan (processed seaweed), banana chips, and asparagus among others.

The banana and pineapple plantations are among the world's best with Del Monte's integrated operations (from farming to processing to exporting) considered as the global benchmark. Del Monte, while started by Americans, is currently a company with a large Filipino equity and managed mainly by Filipinos. The same goes for several cavendish banana operations that are Filipino-owned and managed. Mindanao supplies about 70% of Japan's banana imports and it also exports heavily to China and South Korea. Almost all of Japan's fresh pineapple imports are from the island. Mindanao is also the leading supplier to the world of banana chips.

Rationale

The major rationale for agribusiness development is for the CAAs to ride on the existing supply chains in the region for higher value commodity. Many of these chains are attaining competitive levels on cost, quality, and reliability attributes. Thus, there is no need to reinvent the wheel, so to speak. Established corporations and producer organizations

have found the markets and tested the technologies. Some have explored financing modalities. The principal goals are to increase productivity, promote crop diversification, and enhance value adding.

Potential Immediate Programs/Projects (1 to 2 years)

There are four commodities suggested corn, rice, cassava and banana.

Corn centrals: Corn centrals are proposed which will serve about 500 ha of corn land each.

Compact rice mill: These can be added in rice-based CAAs. As additional criteria, the farmers must express willingness to plant up to three varieties only of rice and the area must be irrigated with assistance from an established farmers association.

Cassava area expansion: CAAs must be near the starch mills (one in Malabang, Lanao del Sur) or near Cotabato City. If there are buying stations of San Miguel Corporation, this offers another option. About 500 ha can be developed initially.

Banana (Cardava) production: The primary goal is to organize farmers in the areas in order to produce cardava banana for chips factories at the cost, quality, and reliability standards.

Potential Short to Medium Term Programs/Projects (1 to 6 years)

The short to medium projects comprise three commodity groups – sugarcane, oil palm, and timber trees.

Sugarcane area expansion: The CAAs must be located either in Maguindanao or in North Cotabato due to their proximity to the sugar mill in Matalam town. The consolidated area of farmers must be at least 50 ha to allow mechanized farming and deep ploughing.

Oil palm contract-growing: There are already growers for a palm oil company in North Cotabato (11 municipalities); Maguindanao (4); Sultan Kudarat (8); and, South Cotabato (4). The total area to date is about 2,500 ha. There is a

mill in Tacurong, Sultan Kudarat that is being eyed for modernization.

Timber tree plantings: A wood processing plant in Makilila, North Cotabato (RNF Summit Woodworks) turns some 30,000 board feet of farmed trees into wood pallets, doors, jambs, windows, doors and mouldings every day. The wood pallets are then sold to banana multinationals and local firms. Today, RNF produces 1,000 pallets a day from Gmelina. Tree planting is profitable but it takes six to seven years to harvest.

Big Push Program

The Big Push program should be a government and private sector effort and will entail a lot of groundwork and planning. It can involve some 10,000 ha for oil palm development along centralized management similar to the FELDA² and FELCRA³ schemes in Malaysia. Over a four-year period, a nursery can be developed and a year later, plantings of about 3,000 ha a year. Some 5,000 families in Moro Islamic Liberation Front (MILF)-influenced CAAs could benefit. The Big Push will enhance visibility, will benefit many families, and will have dramatic multiplier effects. Islamic bank financing should be explored.

Selection Criteria

Considering scarce resources, project areas will be subjected to stringent selection criteria that include the number of beneficiaries; cost per beneficiary; incremental income per beneficiary; willingness of beneficiary to share costs; commitment by the community; and commitment from the local government, national government, and private sector.

Expected Benefits

The programs will enhance value added of primary/ raw products such as banana, timber and fruits, including better milling recoveries for rice mills; higher corn prices as quality improves; higher quality conversion of banana into banana chips; and increased production of wood products from planted timber, i.e., pallets, mouldings, jambs, and doors for export.

The higher production of cardava banana will increase raw material supply for banana chip factories, which are export-oriented. Expanded output of other fruits will increase supply for fresh and processed exports.

On the other hand, higher production of palm oil and timber trees will save foreign exchange by reducing imports. With respect to palm oil, the current demand is about 110,000 tons to 120,000 tons, of which less than 60,000 tons are locally produced. The country imports about half of its log supply and private tree plantings can help reduce the gap.

The main social benefits will be job creation. Additional non-farm and off-farm jobs will help increase family incomes, reduce malnutrition, and induce law and order.

Issues and Risks

The outstanding issues in the CAAs that affect agribusiness investment include:

- Land access and unsecured property rights. Investors are wary of entering areas with conflicting or unsecured land ownership.
- "No law, no order" scenarios put life, money and property at risks.
- Institutions are weak, ranging from unorganized farmers and lack of Non-government Organizations (NGOs) to poor governance of LGUs.
- Poor access infrastructure in part due to fund leakages.
- Lack of transparent and accountable governance.

RURAL INFRASTRUCTURE

Addressing the acute need for rural infrastructure in the CAAs of Mindanao will provide immediate and visible opportunities for contributing to peace-building, as well as pave the way for much-needed development to take place. Previous surveys and studies undertaken in the area have consistently shown appallingly low levels of community access to basic services such as health, education, water and sanitation, and transport infrastructure.

² Federal Land Development Authority (FELDA)

³ Federal Land Consolidation and Rehabilitation Authority (FELCRA)

A more recent Japan International Cooperation Agency (JICA) study (2003) examined various infrastructure needs such as the slow development of the road networks, missing vital links, substandard equipment support, poor road construction and design method, accelerated deterioration due to inadequate drainage, insufficient budget for development works, and poor coordination of road/transport project implementation, and unclear delineation of responsibility for these types of works.

The focus of the assessment includes such infrastructure as access facilities (connecting feeder roads, small access roads, critical bridges, and small port facilities); potable water supply systems; construction of core shelters for IDPs; educational facilities; power supply and telecommunication facilities; and, the development of large-scale irrigation facilities. Small-scale irrigation schemes are discussed under the Agricultural Development sub-component.

Rationale

The results of the field assessment reveal that basic levels of social infrastructure facilities are needed in municipalities with CAAs. Basic rural infrastructure would therefore be required, including potable water supply systems, health and education facilities as well as housing units to ensure decent existence for the poverty and warstricken residents. These are necessary ingredients for developing a healthy human resource capable of helping themselves to gain self-respect and improve their quality of life.

Given the fact that municipalities in CAAs are predominantly agricultural based, it is imperative to focus assistance in addressing the need to develop the support facilities of its agriculture and fishery economy. While some municipalities would require construction of new barangay and farm-to-market roads, the majority of these will need to rehabilitate or reconstruct their dilapidated local road network.

Access infrastructure shall be given highest priority in highly populated barangays and those with substantial existing and potential production areas.

Selection Criteria

The following are basic considerations for a subproject to qualify as "Quick Win":

- Accorded highest priority by the community with specific targets in visited sample sites;
- Can be implemented within six months from start of the program;
- Can be completed in a one to two-year period;
- Requires immediate assistance due to danger posed to life or properties;
- Will benefit the majority of the community and with high impact and visibility; and,
- Those with no clear funding support.

Rehabilitation or restoration of war-damaged facilities shall likewise qualify as "Quick Win" as long as these sub-projects meet the criteria above. All the rest of the identified priorities not meeting these basic considerations and without any funding support shall be programmed under the short to medium term potentials.

Immediate Proposals (1 to 2 Years)

CAAs selected for immediate assistance would fit the recommended selection criteria above. This would cover critical access infrastructure, provision of potable water supply systems, critical health and educational facilities, core shelter to IDPs, and rehabilitation or restoration of war-damaged buildings.

Short to Medium-Term Proposals

The 150 identified municipalities are composed of over 3,800 component barangays. However, not all of these are conflict-affected especially those that are along national and provincial roads as well as municipal centers (poblacion). In the absence of an inventory of the actual number of conflict-affected barangays, the figures presented by the Human Development (HD) Report shall be used.

The report estimated about 900,000 individuals displaced during the conflict of 2000 and about 400,000 more during 2003, many of which were the same individuals as that of the first encounter. Given this figure, it is estimated that about one million

individuals were affected by the conflict in both instances. At an average of five members per household, there would be about 200,000 households (HHs) most directly affected by conflict. If the average number of HHs per barangay were estimated at 300, this would translate to about 700 barangays.

Delivery Mechanisms

Delivery mechanisms and implementation mode shall be dependent on the capability of the local governments and the type of sub-projects to be implemented. Initially, this would involve the following options and strategies:

- 1) Where the LGUs lack the capacity: Local governments in most municipalities with CAAs do not have the capability to implement development projects in their respective jurisdictions. Where these LGUs lack the capability, the following options are recommended:
- Engagement of private entity/firm/NGO to administer project implementation;
- Engagement of full-time individual consultant based at the LGU;
- Provision of capacity building training to LGU technical staff;
- Involvement of Provincial Engineering Offices and National Irrigation Administration in irrigation development; and,
- Involvement of municipal interest groups in project monitoring.
- 2) Where the LGUs have the capacity: There are a few LGUs that are capable of undertaking their own development projects and the following schemes are recommended:
- Implement sub-projects by LGU administration or through private contractors with periodic supervision from oversight entity;
- Provide capacity building training to LGU technical staff; and,
- Involve municipal interest groups in project monitoring.
- 3) <u>For less complicated projects</u>: Community participation in development work has proven to improve and increase the chances of ensuring the

sustainability of the completed facilities. In this respect, it is highly recommended to adopt community-based implementation whenever appropriate.

The strategy would involve the following arrangements among others:

- Implement sub-projects through community organizations with proper guidance and supervision;
- Provide capacity building training to LGU technical staff and community organizations; and,
- Involve the Bangsamoro Development Agency (BDA) and municipal LGUs in project monitoring.

Operation and Maintenance (O&M) Strategy

The sustainability of completed infrastructure facilities, especially farm-to-market roads is a perennial issue in programs and projects of this type as these are neglected inadvertently by the LGUs due to insufficiency of funds. Although this is common to LGUs nationwide, it is more pronounced in the CAAs.

This is aggravated by the fact that most of these roads, if any, are not being used and left to deteriorate further with the occurrence of intermittent encounters between government troops and the MILF. As majority of these LGUs are classified under the fifth to sixth class municipalities, the Internal Revenue Allocation (IRA) are usually only adequate to cover personal services (i.e., salaries and wages) with almost nothing left for development purposes.

In this regard, there is a need to ensure that appropriate units are identified and assigned responsibilities to operate and maintain the completed facilities for sustainability. This should be done even before proposed sub-projects are approved for funding.

Issues and Risks

The identified risks and possible constraints are as follows:

- Disturbance of the current peace and order situation in some municipalities
- Political interference
- Lack of LGU capacity
- Absence of governance in some municipalities
- The occurrence of family feud (*rido*)
- Security problems from third-party adverse groups
- Distribution/allocation of minimal resources
- Acceptance of LGU officials of the role played by the BDA in the entire exercise
- Delay in project implementation even if multi-donor financing is available due to limited availability of government counterpart funds
- Difficulty of the LGUs to provide equity contribution as required by National Economic and Development Authority (NEDA)
- Inadequate and untimely release of funds for project implementation
- Difficulty and high cost of transport of construction materials to island municipalities
- Sustainability of completed facilities given the financial inadequacy of the LGUs

CROSS-CUTTING ISSUES

The cross-cutting issues mentioned here are: institutions and implementation mechanisms, agrarian and land issues, and environmental issues. Gender is another important cross-cutting issue that is found in the HD Report.

Institutions and Implementation Mechanisms

The IDPs are a potent labor force. Given the proper development orientation, desirable values, positive attitudes, and relevant skills development training, these people can turn the fertile idle lands and former battlegrounds of the CAAs into productive areas. Highly trained and experienced NGOs can be tapped to organize these groups, in addition to the technical assistance that will be provided by the capacitated LGU extension workers and the region-based state colleges and universities, including private educational institutions.

Agrarian and Land Issues

Agrarian institutions provide the mechanisms through which access, use, and control of productive natural resources are being allocated among members of the society. The current state of poverty, inequality and social instability in Muslim Mindanao are, in part, due to fundamental problems in agrarian institutions. Specifically, conflicting claims, limited access to and control of land resources are some of the primary reasons for the Mindanao conflict and the sub-optimal utilization of land and other productive resources.

Further, the pressure exerted by population on land resources has stunted the organization of agricultural production due to the diminution of agricultural landholdings and the cultivation of marginal lands in the public domain.

The fundamental point of contention regarding the land problem in Mindanao is that the Regalian doctrine of property ownership imposed by the Christian government in Manila has effectively deprived Muslims/Indigenous Peoples (IPs) of much of their land claims due to its non-recognition of ancestral land claim or ownership. Private individuals knowledgeable about the law were able to title under their names (in some instances, fraudulently) lands which were traditionally owned by the Muslims/IPs. Because of the conflicting land ownership frameworks, the Muslims/IPs are demanding that their traditional lands should be returned (particularly, if fraudulently acquired) or that they be compensated accordingly.

On the other hand, many Christian settlers feel that these properties were acquired through legitimate market transactions between buyers and sellers acting in good faith. Thus, they object to any move that the lands they possess be returned to the Muslims/IPs.

At the policy level, there is a need to provide a legislative framework towards harmonizing ancestral land rights and private ownership beyond property ownership rights. Moreover, there is urgency in addressing policy issues that concern agrarian structure such as land distribution, land use and the organization of production. The relevance of these issues lies in the fact that land utilization is ostensibly sub-optimal in Muslim Mindanao.

Environmental Issues

Key environmental and social issues were identified by the JNA Team.

A number of mitigating measures were identified to counter the negative impact of the identified projects. Enhancement measures were also formulated to boost further the positive impact that will be gained when proposed activities are implemented.

Estimated Costs

In order to facilitate fund mobilization with potential donors for the MTF, an attempt has been made to assess the potential needs of the concerned 150 CAAs. The concepts of "needs" could vary greatly depending on the set purpose. However, in this context the needs are defined as the effective requirements of the people in the affected areas, which could feasibly be fulfilled by proposed program interventions. The resulting estimate would indicate the order of magnitude of the needs of the 150 CAAs.

Agricultural Development: For this sub-component, it has been understood that the selection of 19 municipalities was made based on their representativeness in terms of the agro-climatic conditions, needs for both immediate and short to medium term, people, and capacity of the LGUs. The main assumption is that the 19 municipalities are representative. Thus,

the needs of the 150 municipalities have been made by extrapolating the needs of the 19 municipalities, and the potential needs are estimated at USD170 million.

Rural Infrastructure: Similar assumptions are made for this sub-component. The consultants carried out detailed work initially for 19 municipalities, and then extrapolation has been made for 150 municipalities. The total needs for this sub-component is estimated at USD114 million.

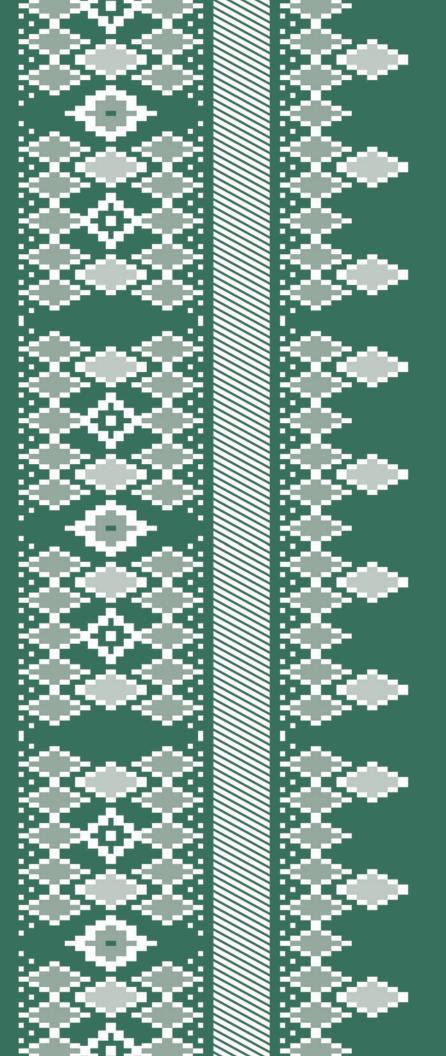
Agribusiness and Marketing: For this subcomponent, the estimation is less straightforward, because the proposals for the 19 municipalities may not be considered representative, and applicable to other municipalities. Example of such proposal is the Big Push program (oil palm) which absorbed as much as 70% of the sub-component cost. For this reason, the experts estimated that the needs of the 150 municipalities are three times that of the 19 municipalities, or USD54 million.

The total needs for the RD component of the 150 municipalities has been estimated at USD 338 million.

MINDANAO TRUST FUND FOR RECONSTRUCTION AND DEVELOPMENT

It should be noted that the MTF-RDP is a transitional assistance for immediate implementation as soon as a peace agreement between the Government of the Republic of the Philippines (GRP) and MILF is signed. As such, it will have limited resources and will focus on the more immediate needs. It will not be able to cater to all the needs of the CAAs. The medium and long term needs will have to be the responsibility of the national, regional and local governments.

Estimated Project Cost by Sector Based on the Sample Areas				
Sector	Total			
	(Unit: US Dollar)			
Agricultural Development	170,000,000			
Agribusiness	54,000,000			
Rural Infrastructure	114,000,000			
Total	338,000,000			





Rural Development Framework



Rural Development Framework

The Government of the Republic of the Philippines (GRP) and the Moro Islamic Liberation Front (MILF), started peace negotiations in 1996, more than a decade after the birth of the MILF, a breakaway faction of the Moro National Liberation Front (MNLF). Although the negotiations broke down a number of times, in February 2004 both parties agreed in Kuala Lumpur, Malaysia to resume formal talks. To support the process the World Bank was requested by the GRP in September 2003 to prepare a multi-donor trust fund - the Mindanao Trust Fund - aimed at funding the early rehabilitation of the conflict-affected areas (CAAs) of Mindanao, once a peace agreement is signed.

The armed conflicts, the latest occurring in 2000 and 2003, have affected thousands of Mindanaoans many of whom lost all their possessions including farms, houses, livestock, crops and others. The total number of internally displaced persons (IDPs) is estimated at about 900,000 (176,000 households), some of whom have been displaced at least twice. While some of these families have not been able to return to their homesteads, others have been able to do so. Many of those who returned, however, face uncertainty with some carrying out farming operations during the day but returning (for safety reasons) to their host homes or camps during the night.

While it is possible that the political aspects of the peace process will take time to be finally resolved, the socio-economic concerns of the IDPs affected by the conflict will need to be addressed quickly. In part, this will facilitate confidence building through which both sides will demonstrate sincerity and commitment to the peace process. It is critical to reconstruct and rehabilitate the affected areas once the peace agreement is signed.

METHODOLOGY

To assess the needs and concerns of the CAAs, it was necessary to carry out a Joint Needs Assessment

(JNA) as a first step. The World Bank, the United Nations (UN), Food and Agriculture Organization (FAO), Asian Development Bank (ADB), and other major donors, carried out this assessment. The JNA exercise focused on an area covering 19 municipalities, out of a total of 150 CAAs as mutually agreed by the GRP and MILF. The current initial phase of the JNA will act as a pilot phase for subsequent phases covering the remaining area. For security reasons, this initial phase has been prepared following visits to only six of the 19 selected municipalities (see Table 1).

The sub-teams of Agriculture, and Agribusiness and Marketing field visits commenced on 30 August and ended 11 September 2004. The Rural Infrastructure sub-team carried out its work separately. The needs of the 19 municipalities had been extrapolated in this study using as a base the six municipalities actually visited by the Team.

The Team was entrusted to assess the needs of the affected areas for agricultural development, both for immediate as well as for short to medium terms. Specifically, as required of the Team, the Terms of Reference (TOR) of the Mission are to:

 initiate a process of local ownership by involving the affected communities in focus group discussions and consultations in

- prioritizing their needs as an input to project design and programming;
- provide a list of prioritized needs identified by the stakeholders and beneficiaries and their suggested service delivery mechanisms;
- recommend several immediate sub-project activities for each sector concern, which can be implemented as soon as a peace agreement is signed, as part of confidence building;
- suggest how assistance from the multi-donor fund can be sustained by linking proposed immediate sub-projects to short-term and medium-term assistance; and,
- propose a rough budget estimate, and if possible, various cost recovery or cost-sharing models for operation and maintenance costs after project completion.

The RD sector consists of three sub-components – agricultural development; rural infrastructure; and agribusiness and marketing. The Agricultural Development sub-component, in turn, includes the following sub-groups: crops and horticulture; fisheries; livestock; post-harvest and household processing; and, small-scale irrigation and potable water. Cross-cutting issues such as agrarian and land concerns, environment, and institutional development were also addressed in the context of rural development.

In project cycle terms, this needs assessment is considered as an identification stage. Although

the Mission has tried to push as far as possible within the time constraints an array of projects, the proposals are far from complete. Therefore, it is strongly recommended that further studies and fine-tuning exercises be undertaken before any of the proposals are implemented.

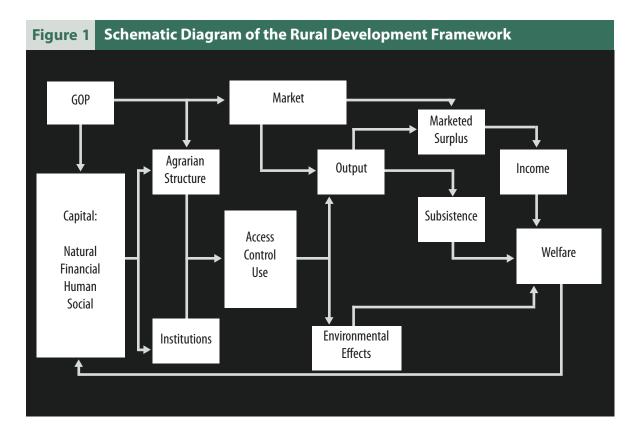
The JNA was a multi-team effort by specialists from the World Bank, UN specialized agencies and other donor partners with the full support of the GRP and the BDA, the development agency of the MILF. The results of the assessment will provide the authorities with a base for seeking support for the MTF for funding an immediate and short to medium-term programs for the CAAs.

RURAL DEVELOPMENT FRAMEWORK

In general, rural development means enhancing the welfare of members of the community, a process involving the sustainable utilization of available resources. However, there are intervening factors in the process of translating the available resources as means towards welfare enhancement.

Figure 1 outlines the schematic diagram of the rural development framework. In current characterizations, resources are classified into four major categories – natural capital, financial capital, human capital, and social capital.

Table 1	Table 1 The Selected 19 Sample Municipalities for JNA Field Work							
Region/Provi	nce	Municipalities						
<u>Autonomous</u> F	Region in Muslim Mindanao (ARMM)							
- Maguindana	0	Matanog, Shariff Aguak, Talayan, South Upi						
- Lanao del Su	r	Butig, Kapatagan, Masiu, Madalum, Balabagan						
Region IX								
- Zamboanga	Sibuguay	lpil						
- Zamboanga	del Sur	Labangan						
Region X								
- Lanao del No	rte	Baloi, Kauswagan, Matungao						
Region XII								
- Sultan Kudar	at	Palimbang						
- North Cotaba	ato	Matalam, Midsayap, M'lang, Pikit						



Natural capital refers to the biological and mineral resource endowments in the area. Financial capital refers to man-made resources that require infusion of financial resources such as physical infrastructure and utilities. Human capital is the level of entrepreneurial skills that would allow for rational decisions. Generally, human capital is defined in terms of level of education and technical skills. In recent developments in various fields of research, social capital has been recognized as one of the critical factors that enhances productivity and welfare in a community. While the process of establishing the concrete definition of what constitutes social capital is still an ongoing concern, it is sufficient to argue for now that social capital is conceptually about the level of goodwill and trust among the members of the community.

The fundamental determinant of welfare is the current state of the resources, which is a function of government investments and how such resources are accessed, controlled, and used by the members of the community. The agrarian structure and institutions that deal with governance and the delivery mechanisms further determine these

elements. Obviously, there is a critical need for interventions to improve the current state of capital available in the CAAs.

Access, control, and use of the available resources results in output either directed as marketed surplus and/or allocated for subsistence consumption. Marketed surpluses are translated into income and through consumption, affect welfare.

It is within the context of the fundamental relations between resources and institutions that rural development interventions will have to be designed and implemented. For instance, interventions geared towards enhancing productivity, such as agricultural development, agribusiness, and rural infrastructure, can only be translated into the general well-being of the community if the elements of resource ownership and distribution are considered.

No amount of financial resources can trickle down towards the benefit of the general constituents of the community if the institutions providing for the delivery mechanisms such as the local governments



are dysfunctional or inefficient. Further, the process of resource utilization has environmental consequences, which affects both the land and the community welfare.

MINDANAO LAND AND PEOPLE

Mindanao has a good, typhoon-free climate that is perfect for the agriculture industry. Geographically, it is 5 to 10 degrees north latitude and 120 to 130 degrees east longitude with its latitude similar to Sabah (East Malaysia), southern Thailand, and Sri Lanka, countries with competitive advantage in agricultural and tree crops. Mindanao has several climate types: distributed rainfall all-year round; wet and dry season; and some pronounced wet and dry seasons, but it is outside the typhoon belt. Topography is varied with long coastlines, coastal and inland plains, highlands, wetlands and tropical forests. It is rich in mineral resources particularly gold, copper, nickel, and limestone. Travel time is about three days by ship to Manila and five days by charter vessel to Japan and northern China ports.

Mindanao has a land area of 10.2 million hectares (ha). It comprises a large mainland as well as the island provinces of Basilan, Camiguin, Sulu, and Tawi-Tawi, and the island city of Samal. To the east is the Pacific Ocean, to the west is Sulu Sea, to the North the Visayas islands and to the south, Celebes Sea. Some 4.1 million ha are classified as alienable and disposable (A&D) lands, and 6.1 million are forestlands. Only 4.3 million ha of the latter are so-called established timberlands. In fact, there were only 210,000 ha of old-growth dipterocarp forests and 1.2 million ha of residual forests in 2000. Mindanao has long coastlines, large areas of shallow continental shelf, marshlands and a few lakes.

Mindanao has a population of almost 20 million in 2004, of which some 68% reside in the rural areas. Of the total population, some 20% are Muslims, 5% Lumads, and 75% descendants of Christian immigrants from Luzon and Visayas. The Muslims are concentrated in five provinces and two cities: Lanao del Sur and Maguindanao and the cities of Cotabato and Marawi in the center; and Basilan, Sulu and Tawi-Tawi in the southwest. The Lumads are scattered in many inland areas. Pilipino and

Cebuano are the most common dialects. English is spoken by a large part of the population.

Agriculture is the major occupation with 1.5 million farms on 3.85 million ha (2002 Census of Agriculture, National Statistics Office). Dominant crops are coconut, corn, and rice. In 2003, the region produced eight million tons of coconuts (56% of national total), 2.8 million tons of corn (61%), 3.2 million tons of palay (24%), and 4 millions tons of bananas (74%). It also produces about 42% of fishery and aquaculture production and some 30% of livestock in the country.

Nationally, coconut, rice, and corn account for about three-quarters of the total arable land, which is estimated at 11 million has. Mindanao's agricultural situation also reflects the same pattern. In addition, due to favorable weather conditions, plantation crops such as banana are thriving in the area. The CAPs account for about 54% of coconut areas in Mindanao, 74% of corn areas, 72% of rice areas and 49% of banana areas. They also provide the bulk of harvested seaweeds and tuna.

The CAPs have a land area of about 5.6 million ha, or 55% of Mindanao total land area. Of this, some 2.1 million ha were certified A&D lands and 3.5 million ha, forestlands. Of the latter, there are 1.9 million ha of established timberlands.

Mindanao has six administrative regions. These are Region 9, the Zamboanga Peninsula; Region 10, Northern Mindanao; Region 11, Davao Region; Region 12, SOCCSKSARGEN, which stands for South Cotabato (Soc), North Cotabato (c), Sultan Kudarat (sk), Sarangani (sar), and General Santos City (gen); Region 13, the Caraga Administrative Region; and the Autonomous Region in Muslim Mindanao (ARMM). It has 26 provinces, 23 cities, and hosts about 500 municipalities.

Maguindanao

Maguindanao has a land area of 542,500 ha and a population of 801,000 (2000 Census). It is primarily agricultural with rice and corn in surplus. In 2003, the province produced 310,000 tons of corn on 127,800 ha. This was 11% of Mindanao

Table 2	Mindanao and JNA Provinces* To Total Coconut, Corn, Rice and Banana, 2003 (Area in thousand ha; production in thousand tons)								
		Mindanao	CAA Provinces	Philippines	Mindanao to Philippines, %	CAA Provinces to Mindanao, %			
COCONUT									
Harvested Are Production	ea	1,641 8,054	885 4,458	3,214 14,294	51 56	54 55			
CORN									
Harvested Are Production	ea	1,511 2,826	1,116 2,054	2,642 4,616	57 61	74 73			
RICE									
Harvested Are Production	ea	996 3,242	716 2,277	4,006 13,500	25 24	72 70			
BANANA									
Harvested Ar	ea	198	98	410	48	49			
Production		3,994	2,077	5,369	74	52			

^{*}Three Zamboanga provinces; Lanao Norte; Compostela Valley; Davao Oriental; five SOCCSKSARGEN provinces; and three ARMM provinces (Basilan, Lanao Sur, and Maguindanao).

Source: Bureau of Agricultural Statistics (BAS)

production and 7% of national production. It has substantial timber reserves, especially in Buldon in the north and Upi in the south.

The Mindanao River with its swampy delta and the many brackish-water fishponds in the area supply the province with fish and other fishery products. Liguasan Marsh is at the heartland. Fish from Illana Bay are landed at Cotabato City, which serves as the regional trading center. The main port is in Polloc, 26 kilometers north of the city. Cotabato City is about three hours drive to General Santos City and five hours to Davao City.

The Maguindanaoans, who are Muslims, make up about 90% of the population of the province. Cultural communities include the Teduray. Main dialects are Maguindanao and Cebuano.

Traditionally, the Maguindanaons boast of a long line of distinguished sultanates; they are traditionally rice farmers. Those near the coast have become fisherfolk and traders. They produce fine handicrafts such as brassware, hand-woven malongs, mats and baskets. They are musically inclined, with the kulintang as principal instrument. Their kulintang ensemble has two more large gongs than that of the Maranaos.

The Tedurays are found in Dinaig and South Upi and in the densely forested hills. They are horseriding people living in communal households. They practice kaingin¹ farming, supplemented by hunting and weaving nito vines and rattan into baskets, bags, and hats.

North Cotabato

North Cotabato has a total land area of 656,600 ha and a population of 958,600 (2000 Census). Rice is a major crop. In 2003, some 113,300 ha were harvested producing 394,000 tons. This was 12% of Mindanao production and 3% of national production. North Cotabato produces cash crops, vegetables, bananas, sugarcane, rubber, and a variety of tropical fruits. Cotabato depends on its marshes and rivers for its aquatic resources.

The province is linked by first-class roads to growth areas such as General Santos City, Davao City and

Cagayan de Oro City. The capital, Kidapawan City, is two hours by car from Davao City. Access to these areas not only provides Cotabato markets for its raw materials but also the use of business services such as international seaports and airports. The power needs of Cotabato come from two local electric cooperatives while water supply comes from a formal water system augmented by communal faucets, artesian well, and springs. The province has two modern telephone systems with access to international networks and hosts a banking industry composed of 13 commercial banks, nine rural banks, and two cooperative banks.

It is composed of primarily Christian migrants from Visayas and Luzon and the three minority groups: Maguindanaoans, Manobos, and T'bolis. Kidapawan is a Manobo cultural center. They are closely related linguistically with neighboring groups in Bukidnon: Higa-onon and Ata. The principal dialect is Cebuano.

The Manobos occupy and have adapted to various ecological niches ranging from the coastal to the rugged mountain highlands of the interiors of Mindanao. They practice kaingin farming, supplemented by hunting and food gathering. The communities are widely scattered and placed on high ridges above mountain drainage systems. In some areas, there are long houses that accommodate a number of families usually of an extended kind. Manobo crafts include pottery, basketry, and weaving.

Sultan Kudarat

Sultan Kudarat is predominantly and extensively an agricultural province. It has a land area of about 478,000 ha and a population of 586,500 (2000 Census). It has rich and vast arable areas with rice as the main crop although many other crops are grown including oil palm, coconut, sugarcane, abaca, tobacco and ramie, of which the region is the top producer in the Philippines. It has marketable surplus of rice, corn, beef, coffee, and vegetables, and it has achieved self-sufficient in poultry, swine, and root crops.

¹ Kaingin is a slash-burn farming method with no intent to reforest or rehabilitate the land after use

The province is one of the primary areas for oil palm. As early as the 1970s, some 4,600 ha have been planted under Kenram's auspices. Other important economic activities are cottage industries such as rattan and woodcraft. Industrial establishments include logging, grains complex, palm oil mills, feed mills, oil extraction plant for rice bran, and a refinery.

Three community groups inhabit Sultan Kudarat – Muslims, Christians and IPs. Although still in great number, the Maguindanaoans and other cultural groups like the Iranuns, Tirurays, and Manobos are now outnumbered by Christian migrants from the Visayas and from Luzon. The major dialects spoken in the province are Hiligaynon (Ilonggo), Maguindanao, Ilocano, Cebuano, and Manobo.

Lanao del Sur

Lanao del Sur has a land area of 387,290 ha and a population of 669,000 (2000 Census). The province's fertile soil supports an agricultural economy, with corn and rice as the main crops with coconut-growing along the coast. In 2003, the province had 148,452 ha harvested and produced 360,000 tons of corn, or 13% of Mindanao production and 8% of national production. Other crops include abaca, bananas and fruits. Lanao Lake contains several species of fish with small-scale fishing a dominant livelihood activity in the area.

The most prominent cottage industries are brass-making and malong-weaving. Marawi City, the capital, is a one-hour drive from Iligan City. Wao municipality is the corn center of the province, which is connected to Cagayan de Oro City via Bukidnon. The predominantly Muslim population comprises the Maranaos and to a lesser extent the Iranuns, who are tribal cousins.

The Maranaos are among the most devout and most traditional of the Muslim groups. They are sensitive to *maratabat*, the controlling factor of their social actions. It is intricately linked to family honor and is manifested in the

extravagant display of wealth and in exacting revenge (*rido*). They are very conscious of their status. The province boasts of numerous sultans and clans.

The Maranaos are also known for their exquisite artistry: from artifacts and tools adorned with *okir* (carvings) and *nagas* (serpent figures) to boats and malongs and buntings of brilliant colors. The Maranaos are good traders and are found in most Philippine cities.

Lanao del Norte

Lanao del Norte has a land area of 355,636 ha and a population of 758,123 (2000 Census). Iligan City is the capital, which is less than two hours by land from Cagayan de Oro City. The province's agricultural products are rice, corn, coconut, marine products (such as crabs, shrimps, seashells, seaweed), and wood products.

The province's dominant sources of livelihood are agriculture, fishing and forestry. It is a major producer of fruit and commercial crops such as bananas, coconut, corn and rice with manufacturing establishments that include a coconut oil mill and a flour mill.

Lanao del Norte is composed of migrants from the Visayas region, Muslims, and some Subanons. The Christian-Muslim ratio is 60:40 in favor of the Christians. Cebuano, English and Pilipino are widely spoken among Christians and Maranao for Muslim.

Zamboanga del Sur

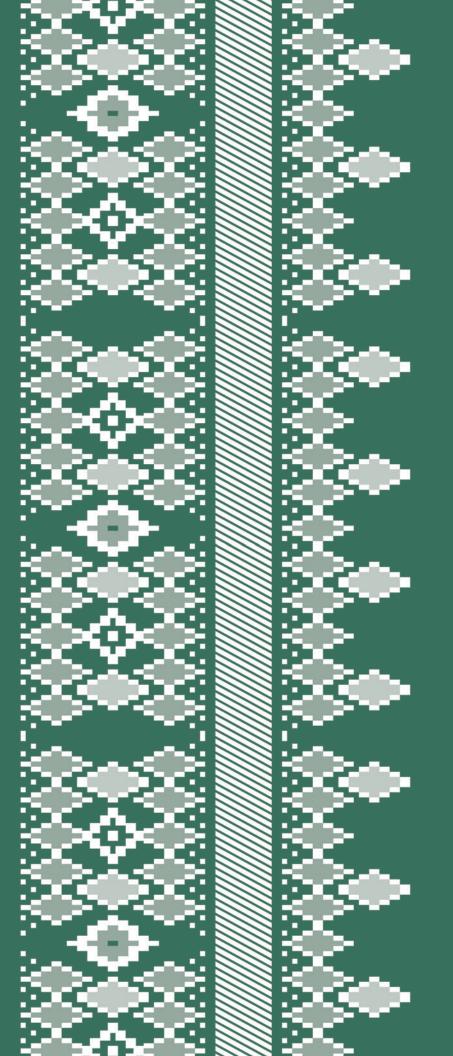
Zamboanga del Sur in Western Mindanao has a land area of about 250,000 ha and a population of about 500,000 (a new province, Zamboanga Sibugay, was carved out of the province). Its capital is Pagadian City. It grows corn, rice, abaca, coconut, and rubber and is rich in fishing resources. It also has vast forest reserve. The province is also engaged in coconut oil production, livestock feed milling, rice/corn milling, and fruit processing. Mat weaving is a cottage industry.

Among the rice areas are Labayan and Aurora. The province grows about 12% of Mindanao's total rice production from 74,000 ha harvested in 2003.

The original inhabitants of the Zamboanga peninsula are the Subanons, who settled along the riverbanks. The next groups of settlers to arrive were Muslim migrants from the neighboring provinces. The Maguindanaoans and Kalibugans were farmers; the Tausugs, Samals, and Badjaos were fisherfolk; and, the Maranaos were traders and artisans.

The major inhabitants of Zamboanga del Sur are the migrants from the Visayas. Cebuano is the major dialect. Also spoken are Chavacano, Tagalog, Subanon, Ilonggo, Maguindanao, Tausug, Boholano, and Ilocano.





2

Current Development Initiatives 2

Current Development Initiatives

There are two major ongoing programs and projects under the Department of Agriculture (DA) that involve the provision of barangay and farm-to-market roads, local bridges, potable water supply, and small-scale irrigation development in the CAAs of Mindanao. These are the World Bank funded Mindanao Rural Development Program (MRDP) and the European Union (EU) funded Upland Development Project (UDP). A third project, the Rural Infrastructure Development Project (RIDP) funded by the Asian Development Bank (ADB) was completed in 2002.

MRDP has completed its Adaptable Program Lending I (APL-I). It has three more APLs to complete the whole program to beyond 2005. Under APL-I, a total of 26 municipalities in four provinces with CAAs are covered. The status of implementation of sub-projects relevant to the Rural Infrastructure sub-sector is shown in Table 3.

The EU-funded UDP is on its fifth year of implementation and is scheduled for completion by end of 2006. The project covers eight of the identified municipalities with CAAs. These are the lone municipalities of Pantukan and Tarragona of Compostela Valley and Davao Oriental provinces, respectively, Tupi of South Cotabato, and five municipalities of Sarangani province. Its status as of August 2004 is shown in Table 4.

Owing to the project's objective of developing a replicable model for sustainable management of the natural resources in the uplands of Mindanao, its interventions in rural infrastructure are confined to the provision of potable water supply to upland communities, some foot trails and footbridges, and only a few farm-to-market roads. They are not appropriate to these areas except for critical road links to barangay centers where the topography permits. The RIDP, which ended on September 2002, was able to provide assistance to the five municipalities of Labason, Kalawit, Payao, Ipil and Titay in the

provinces of Zamboanga del Norte and Sibugay. It covered the rehabilitation and construction of critical provincial and farm-to-market roads and bridges as well as small-scale communal irrigation schemes. As of project completion, the following access infrastructures were completed as shown in Table 5.

DEPARTMENT OF AGRARIAN REFORM (DAR)

DAR adopted the Agrarian Reform Community (ARC) development strategy for its farmer beneficiaries. An ARC is a cluster of barangays in a municipality where there is a concentration of agrarian reform beneficiaries.

In support of the development of these ARCs, several Foreign Assisted Projects (FAPs) of DAR are currently covering about 69 municipalities in 14 Mindanao provinces. These are the World Bank funded Agrarian Reform Communities Development Project (ARCDP), JBIC funded Agrarian Reform Infrastructure Support Project-Phase II (ARISP-II), ADB funded Agrarian Reform Communities Project (ARCP), Belgian funded Belgian Integrated Agrarian Reform Support Project-Phase III (BIARSP-III), EU funded Support to Agrarian Reform in Central Mindanao (STARCM) and the IFAD funded Western Mindanao Community Initiatives Project (WMCIP). The status of implementation of these projects is shown in Table 6.

In addition, the DAR-Spanish funded Solar Power Technology Support Project (SPOTS) covers ten municipalities with CAAs and provides solar power systems (photovoltaics) to about 24 barangays.

Its package systems are composed of the following: i) Solar Home Lighting System; ii) School Package System providing lights and power to TV and VCD operation; iii) Barangay Health Center composed of lighting kit and vaccine fridge; iv) Potable and Agricultural Water Systems providing power to submersible pumps; v) Barangay Hall and Communal Lighting Systems; and, vi) AC-10 Block System designed to supply 10,000 WH daily for agribusiness purposes.

Similarly, BIARSP III will provide latrines to 50 households while WMCIP has two units of fish landing ports undergoing construction. However, it should be noted that assistance under these DAR FAPs in terms of rural infrastructure is minimal and limited only to areas within the ARCs.

NATIONAL IRRIGATION ADMINISTRATION (NIA)

To date, the NIA is undertaking one system rehabilitation and two construction projects covering six municipalities in three provinces in the CAAs. The status of these large-scale or national irrigation schemes is shown in **Table** 7.

Rugnan RIS in the municipality of Taraka, Lanao del Sur has a total service area of 3,050 ha but the rehabilitation works are intended to restore 500 ha only, with an accomplishment to date of about 27%.

Malaig RIP in the municipality of Butig, also of Lanao del Sur with a total potential area of 2,750 ha, is being developed for an initial area of 450 ha under Phase I. It is currently implementing the institutional development component as the Memorandum of Agreement (MOA) between the NIA and the Department of National Defense (DND) is yet to be signed to date. The NIA provincial office and the 52nd engineering

battalion of the Philippine Army jointly undertake the project. Funding sources for both projects are from the national budget.

The ongoing Malitubog-Maridagao Irrigation (MAL-MAR or MMIP) Project has a total design area of about 19,000 ha (Stages I and II) stretching from the municipalities of Carmen and Pikit of Cotabato province up to Datu Montawal (Pagagawan) and Pagalungan of Maguindanao, all of which are municipalities within CAAs. Although implementation of the project had been adversely affected by several skirmishes between government troops and the MILF, partial turnover of Maridagao area for operation and maintenance was finally done on the second week of September 2004. The rest of Stage I is currently ongoing although it has to be deliberated back at NEDA Investment Coordinating Committee for time extension and cost increase. Stage II covering an area of about 9,160 ha, is currently being re-evaluated by the DA, the mother agency of NIA.

To date, NIA has no other large-scale projects in the pipeline with guaranteed funding. However, they have a list of projects in their proposed Irrigation Development Program from year 2005 onwards.

DEPARTMENT OF SOCIAL WELFARE AND DEVELOPMENT (DSWD)

The DSWD-Mindanao Natin has ongoing shelter assistance under the Bangsamoro Pabahay Project, which is funded by the department's budget, the ARMM Social Fund Project (ASFP) and the United Nations Multi-Donor Programme (UNMDP) Phase III. The project covers four provinces of ARMM (Maguindanao, Basilan, Sulu and Tawi-Tawi) involving 21 municipalities with CAAs in the first three provinces.

In the 7th September 2004 DSWD-ARMM report, it said it completed 1,830 units of core shelters for IDPs out of the targeted 4,971. The distribution by province is shown in **Table 8**.

Table 3 Status of MRDP Implementation in Municipalities with CAAs (Four Provinces)							
Province	Municipalities	Complet	ed	Ongoing and P	ipelined		
	(no.)	FMR (kms)	PWS (units)	FMR (kms)	PWS (units)		
Compostela Valley	1	none	none	7.06	none		
Sultan Kudarat	7	186.05	15	18.44	1		
Cotabato	9	109.62	2	45.56	none		
Maguindanao	9	36.40	none	54.94	none		
Total	26	332.07	17	126.00	1		

Note: Status of small-scale irrigation development is discussed under the Agriculture sub-sector

FMR - Farm-to-Market Road PWS - Potable Water Supply

Source: MRDP Progress Report as of July 31, 2004

Table 4 Statu	ıs of UDP impleme	ntatior	ı in Munici _l	palities v	with C	AAs (Four Prov	vinces)
Province	Municipalities		Completed		Ongo	ing and Pipeli	ned
	(no.)	FMR (kms)	5.11 (1.)			Ft. Trails/ Bridges (Im.)	PWS (units)
Compostela Valley	1	none	none	1	none	none	3
Davao Oriental	1	none	none	2	none	none	none
South Cotabato	1	1.30	3,500	4	none	none	1
Sarangani	5	1.50 180 26 none 42 4					4
Total	8	2.80	3,680	33	none	42	8

Source: UDP M and E data as of August 2004

Table 5	Table 5 RIDP Completed Access Infrastructures in Municipalities with CAAs (Zamboanga del Norte and Sibugay)						
Province		Municipalities (no.)	Provincial Roads & FMR (kms)	Bridge (Im)			
Zamboanga de	Zamboanga del Norte Labason & Kalawit (2) 70.89 none						
Zamboanga Si	Zamboanga Sibugay Payao, Ipil & Titay (3) 82.04 1,120						
Total							

Note: Status of small-scale irrigation development is discussed under the Agriculture sub-sector *Source: Project Completion Report, ADB, July 2004*

Table 6 Status of DAR FAPs in Municipalities with CAAs								
Sub-Project Type	Completed	Ongoing	Pipelined	Remarks				
1. Barangay Roads and FMR	103.79 kms	158.85 kms	59.26 kms	These are the combined				
2. Rural Bridges	69.20 lm	34.00 lm	100.00 lm	interventions provided by				
3. Potable Water Supply	24 units	18 units	34 units	projects mentioned above.				
4. Barangay Health Stations	1 unit	2 units	14 units					
5. School Buildings	-	-	18 CL					
6. Multi-Purpose Centers	12 units	9 units	5 units					

Note: Status of small-scale irrigation development is discussed under the Agriculture sub-sector

Source: DAR progress reports

Table 7 Ongoing with CAA		Irrigatio	n (large-:	scale) Sc	:hemes i	in Municipalities
Name of Project Location	Category	Area (ha.)	Cost	Fund	Remarks
		Total	This Program	(mPhP)	Source	
 Rugnan RIS Taraka, Lanao Sur 	Rehab	3,050	500	50	GAA	Ongoing; 27% accomplishment
Malaig RIP Butig, Lanao Sur	New	2,750	450	50	GAA	Ongoing; 10.80% accomplishment
3. Malitubog-Maridagao IP Cotabato, Maguindanao	New	19,000	10,840 (stage I)	2,487	JBIC	Area generated to date is 6,256 ha with 3,120 ha irrigated (Stage I)
Total		24,800	11,790	2,578		

Source: NIA PIO data and MMIP updates 2003

Table 8 Summary of DSWD Bangsamoro Pabahay Project (amount in million PhPs)												
Province	Municipalities (no.)	Target (no.)	w/ Fund Release		Completed		Ongoing		Pipelined			
			no.	amt.	no.	amt.	no.	amt.	no.	amt.		
1. Maguindanao	15	4,118	1,574	39.35	1,564	39.10	10	0.25	0	0		
2. Basilan	1	673	316	4.90	86	1.28	0	0	230	3.62		
3. Sulu	5	180	180	4.50	180	4.50	0	0	0	0		
Total	21	4,971	2,070	48.75	1,830	44.88	10	0.25	230	3.62		

Source: DSWD-ARMM Shelter Assistance Implementation Report as of September 07, 2004

It could be noted that the pipelined projects of 230 units in the DSWD project are remaining shelters for implementation based on the released budget for a combined total of 2,070 units. The balance of 2,901 units from the total target has yet to be funded.

DEPARTMENT OF ENERGY (DOE)

The following programs of the DOE and its attached agencies, the National Power Corporation (NPC), National Electrification Administration (NEA), and the Transmission Corporation (TransCo) are relevant to the condition of the power sector in the CAAs in Mindanao.

The Rural Electrification Program

The DOE has adopted programs in support of the government's poverty alleviation efforts

through wider access to electricity supply and services. These are the i) Accelerated Barangay Electrification Program (ABEP) in 1999; ii) O'Ilaw Program from January 2000 to March 2003; and the iii) Expanded Rural Electrification (ERE) Program in April 2003. The O'Ilaw Program has integrated all rural electrification efforts of the DOE, NEA, NPC, and the Philippine National Oil Company-Energy Development Corporation (PNOC-EDC), towards the goal of attaining total barangay electrification by 2006.

The O'Ilaw Program has also encouraged the greater participation of private organizations, business communities including independent power producers (IPPs) and civic organizations in the electrification of marginal barangays through the "advance financing" and "adopt a barangay" schemes.

In April 2003, the O'Ilaw Program was transformed into the Expanded Rural Electrification (ER) Program. The DOE created the ER Team to manage and integrate the country's rural electrification program. It is the objective of the ER Team, among others to accelerate electrification through enhanced public/private partnership and to promote cost-effective uses of new and renewable energy (NRE) for the provision of electricity in remote and unviable areas. Another goal is to integrate all efforts and initiatives to achieve 100% barangay electrification by 2006 and 90% household electrification by 2017.

The Philippine Energy Plan (2004-2013)

Major programs and projects of the Department of Energy are now covered under its Philippine Energy Plan (2004-2013) or PEP. Tied to the implementation of the EPIRA of 2001, the PEP among others seeks to provide wider access to reliable supply of energy (100% barangay electrification by 2006 and 90% of households by 2017) and to increase NRE capacity to 100% by 2013. NRE development projects will promote greater utilization of wind, solar, ocean, minihydro and biomass energy sources. Under the EPIRA of 2001, the NPC shall remain as the government agency to perform the missionary

electrification function through the Small Power Utilities Group (SPUG).

It shall be responsible for providing power generation and its associated power delivery systems in areas that are not connected to the national transmission system. The missionary electrification function shall be funded from the revenues from sales in missionary areas and from the universal charge (UC) to be collected from all electricity end-users as determined by the Energy Regulatory Commission (ERC).

As of May 2004, a total of 38,085 barangays out of the 41,945 target barangays in the country have been energized, equivalent to 90.80% electrification level. The remaining 3,508 barangays (including 1,774 unenergized barangays in franchise areas of Mindanao electric cooperatives with CAAs alone or 50% of total nationwide) have now been programmed for energization until 2008, two (2) years later than the original target of 2006. Most of these remaining barangays are located in remote areas, with an estimated half considered as unviable thus more suitable for NRE type of electrification projects. The following table shows the details of the 2004-2008 electrification program.

Table 9 Electrification Program 2004-2008												
Agency/Office	2004 (June-Dec)	2005	2006	2007	2008	Total						
NEA/Electric Cooperatives	250	200	200	200	200	1,050						
NPC-SPUG	116	116	116	116	116	580						
DOE	180	80	80	80	80	500						
PNOC-EDC	86	100	100	100	100	486						
IPPs/QTPs	489	403	-	-	-	892						
Total	1,121	899	496	496	496	3,508						
Energization Level	93.5%	95.6%	96.8%	98.0%	99.2%							
Remaining Unenergized Barangays (as of May 2004)												
Balance (To be offered to QTPs; NPC-SPUG as last resort)												

Source: DOE website

To encourage inflow of private capital in all missionary and unviable areas, the DOE issued Department Circular No. 2004-01-001, entitled "Prescribing the Rules and Procedures for Private Sector Participation in Existing NPC-SPUG Areas Pursuant to Rule 13 of the IRR of the EPIRA of 2001" dated 26 January 2004. In compliance with said circular, NPC-SPUG identified and recommended the first wave of areas for privatization located in 13 sites that included Basilan and Sulu. To move forward with the privatization of SPUG areas, the DOE, PSALM, and NPC had engaged the International Finance Corporation (IFC) as transaction advisor to assist in the development of appropriate privatization program and selection of new power provider. The IFC is currently conducting pre-engagement surveys for the 13 areas.

DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS (DOTC)

Current projects in the telecommunications sector of the DOTC that have relevance to the Mindanao JNA-covered regions are discussed below.

Domestic Long Distance Backbone

The government through DOTC has developed an alternative backbone transmission network along the eastern side through the Regional Telecommunications Development Project (RTDP) financed through OECF Loan Facilities of Japan and the National Telephone Program (NTP). Phases A and B of the RTDP have been completed while Phase C is ongoing and is targeted to be completed this year. NTP Tranche I-1 was completed while Tranches I-2 and I-3 are in the process of completion. NTP Tranche I-3 (Pilot Project, financed through Italian Protocol Loan Facilities) will serve Regions IX, X, XI and XII.

Under this program (I-3), a total of 11,322 lines were installed in Cagayan de Oro (8,352 lines), Iligan (2,060 lines), and Marawi (920 lines). The Telecommunications Office (TELOF) operates and maintains these facilities on interim basis prior to privatization.

Municipal Telephone Project

The establishment of a Public Calling Office (PCO) in every city and municipality without telephone service was the government's response to serve the need for communication facilities while awaiting the private sector operators to provide completely the service. The Municipal Telephone Act or Republic Act (RA) 6849 established the Municipal Telephone Projects Office (MTPO) to administer the implementation of a nationwide plan to install a telephone in every unserved municipality. RA 6849 gave qualified private telecommunications operators the right of first option to provide, install, and operate public calling stations in all unserved municipalities.

The MTPO completed a national plan for the provision of PCOs in January 1991. A PCO is a telephone service capable of voice and data transmission and is equipped with facsimile machines. It may also be interconnected to an automated teller machine or computers for data transmission applications. The plan specified the participation of six pre-qualified telecommunications companies (PLDT, Piltel, PT&T, Extelcom, Digitel, and Evtelco) in the implementation of province-wide PCO networks in 42 provinces.

Overall, these companies have completed the installation of 427 PCOs in their designated provinces. The MTPO has implemented PCO projects in 38 other provinces. Of the 850 PCOs programmed for completion by the MTPO, about 723 PCOs were built, as of the end of 1996. Of the PCOs built, 182 were privatized and 529 are operated by TELOF. Data provided by DOTC on its website do not show installed PCOs by municipality, hence further validation should be carried out for this purpose.

Telepono Sa Barangay Project (TSB 1 and 1A)

The project's two-phase (TSB 1 & 1A) plan is to establish a total of 11,688 telephone lines in 2,574 barangays of seven provinces, which include Zamboanga del Sur (975 barangays), Zamboanga

del Norte (535 barangays), and Lanao del Norte (300 barangays). Every barangay shall be provided with three payphones using phone cards for outgoing calls and one plain ordinary telephone system for incoming calls. Several barangays visited during the JNA were found to be beneficiaries of this program. However, it was noted that the installed telephones are not being utilized, as mobile telephones are now available and have become the more popular means of telecommunication.

DEPARTMENT OF EDUCATION (DEPED) AND THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

School Building Program (SBP)

An annual budget of PhP 2 Billion is included in the General Appropriations Act (GAA) for the implementation of the SBP. This amount is lodged under the budget of the DPWH, which is the primary agency tasked to implement the SBP. The SBP includes the construction of new classrooms and the repair of existing ones that have been damaged by natural or man-made calamity or dilapidated through many years of normal use.

Actual implementation of the SBP by DPWH is based on an annual listing of specific elementary and secondary schools produced by the DepEd's Physical Facilities Division (PFD), which keeps a record of the physical condition and requirements of public school facilities in all the regions. Each year however, 10% of the SBP budget or PhP 200 million is sub-allocated by the DPWH back to DepEd which then selects specific beneficiary schools upon the discretionary approval of the DepEd's Secretary. DepEd then administers the actual planning, procurement, and supervision of these annual PhP 200 million worth of new and repaired classrooms through its Task Force Engineering, Assessment, and Monitoring (TFEAM) office.

At the present average cost of PhP 400,000 per new classroom (7m x 9m), the annual PhP2 Billion appropriation for SBP can only construct more or less 5,000 new classrooms, enough to cover

only a portion of the present backlog in excess of 50,000 classrooms required across the country. The backlog keeps increasing each year, due to the everincreasing number of pupils that seek enrolment in any one of the 41,370 public schools (36,738 elementary and 4,632 secondary) nationwide.

Based on the latest data from DepEd's Basic Education Information System (BEIS), the total requirement for new classrooms in municipalities with CAAs alone now stands at 4,408. It is estimated that repair work is needed for a total of at least twice that of new classrooms required or equivalent to 8,800 classrooms.

Current commitments from the regular SBP budget and other donor-funded school building projects can only address construction of about 100 new classrooms and the repair of 400 existing ones. Hence an estimated gap of about 4,308 new classrooms and 8,400 classrooms for repair remain unfunded, for a total cost requirement of about PhP 3.40 billion (using PhP 400,000 per unit of new classroom and PhP 200,000 per unit of repair).

There is demand for other facilities such as principal's office, laboratory, HE building, library and even fencing. However, given the acute shortage of classrooms, it is suggested that classrooms be accorded highest priority if ever project funds become available. Other sources may be tapped to meet the other non-instructional facilities, e.g., from PTCA, LGU or similar benefactors in the community.

Third Elementary Education Project (TEEP); Secondary Education Development and Improvement Project (SEDIP); Second Social Expenditure Management Project (SEMP2)

At least three foreign-assisted projects with school building component were identified as present in the JNA covered areas. TEEP which is jointly funded by the WB (six provinces) and JBIC (16 provinces), operates in 22 provinces nationwide including the provinces of Zamboanga del Sur, Zamboanga Sibugay, and North Cotabato. For the year 2004 alone, TEEP has programmed the construction of 78 new classrooms and the repair of 240 existing

classrooms distributed in municipalities with CAAs of these three provinces. The ADB funded SEDIP on the other hand aims to improve equitable access to quality secondary education in 26 provinces including Zamboanga del Sur, North Cotabato, Basilan, Maguindanao and Sulu. SEDIP includes the financing of construction and rehabilitation of school facilities and procurement of school furniture and equipment.

SEMP2 on the other hand is a budget support type of loan made available by the WB to the Philippine Government to finance among others DepEd's 10% share of the annual PhP 2 billion for the SBP and a portion of the same SBP budget being implemented by DPWH. For the current year, SEMP2 will finance the construction and/or repair of a number of classrooms in the provinces of Basilan, Maguindanao, Lanao del Sur and Lanao del Norte.

SPECIAL ZONE OF PEACE AND DEVELOPMENT (SZOPAD) AND ARMM SOCIAL FUND PROJECT (ASFP)

The SZOPAD Social Fund is a World Bank-IBRD and OPEC funded project under the Office of the President. It officially ended on June 30, 2004. Of the 14 provinces and 10 cities covered under the SZOPAD area, 12 provinces have municipalities with CAAs. A total of 520 sub-projects (inclusive of warehouses and solar driers which are discussed under the Agriculture sub-sector) were implemented and completed under WB-IBRD funding with a total cost of PhP 309.42 million while 354 sub-projects were under OPEC funding costing about PhP 310.94 million. Of these numbers, 58 under WB-IBRD and 32 under OPEC were technical assistance on trainings, community organizing, assessments, and capacity building.

For conflict-affected municipalities and under WB-IBRD funding, 39.8 kms of rural roads were rehabilitated with one causeway and one bridge constructed while 30.9 kms rehabilitated with two foot bridges and two rock causeways constructed from OPEC funding. Ten timber ports (three from IBRD and seven from OPEC) were provided and

11 Multi-Purpose Buildings (MPB) commonly used as training centers were constructed with only one funded under IBRD.

SZOPAD originally allowed the construction of communal toilets, which provided 32 units (27 in Lanao del Sur). However, it was observed that these facilities were hardly maintained by the communities or the LGUs hence, under OPEC, the management refrained from providing such assistance but instead integrated the toilets with the structures where necessary.

Meanwhile, the ASFP is an offshoot of SZOPAD Social Fund and a continuing commitment of the Philippine government to the peace and development strategy to overcome conflict and poverty in Mindanao. The loan became effective on May 19, 2003 and project completion is on December 31, 2007. As of August 30, 2004, it has already accomplished several sub-projects in its pilot areas in the CAAs.

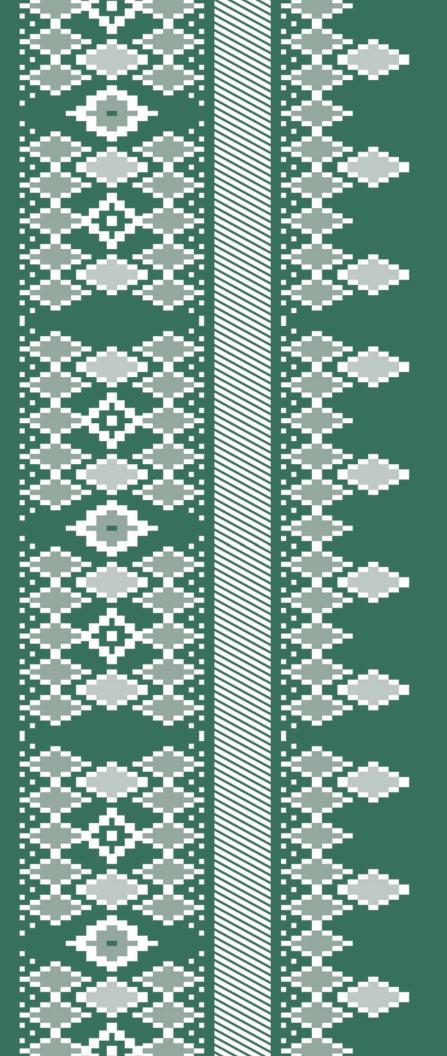
ASFP had also identified about 13 Strategic Regional Infrastructures (SRI), which are in various stages of implementation. It covers five district hospital improvement, three education and manpower development centers, one social services center, three base port facilities improvement, and one regional information, communication and technology center. To date, only the passenger terminal building in Polloc Base Port is ongoing with 31% physical accomplishment as of June 2004.

GROWTH WITH EQUITY IN MINDANAO-PHASE II (GEM-II)

GEM Phase II is an offshoot of GEM I that started on October 1995 and terminated on September 2002. It is a USAID-assisted program implemented through the Louis Berger Group, Inc., a private consulting firm. Unlike GEM I which provided only for technical assistance with very few community infrastructure, GEM II provides for a larger scope of both community and medium-scale infrastructure. This program started in October 2002 and would end by September of 2007. It currently covers about 82 of the

municipalities in the CAAs within 11 provinces of Mindanao.

Access infrastructure covers foot and vehicle bridges and road rehabilitation with shortest length at 1.0 km and the longest at 4.0 kms. Ports include boat and fish landings while MPBs varied from trading centers to community centers. Aside from community infrastructure, GEM II also provided assistance to medium scale infrastructure covering 10 municipalities in seven provinces.





Agricultural Development 3

Agricultural Development

Agriculture continues to be the driving force behind Mindanao's economy. Close to a third of its land area is devoted to agriculture. More than one-third of the island's labor force is employed in the agriculture, fishery, and forestry sectors. Mindanao accounts for over 40% of the Philippines' food requirements and contributes more than 30% to the national food trade.

Mindanao's evenly distributed tropical climate makes it ideal for year-round crop production. If wisely harnessed, Mindanao's rich agricultural resources can serve as the country's foundation for sustainable growth. Mindanao's economy grew at an average of 3% in 1995-1997. This dipped to 0.5 % in 1998 due to the Asian financial crisis but improved to nearly 2% in 1999 following the bullish performance of its agriculture sector (5.84%) and industry sector (5.09%).

However, despite the large contribution of Mindanao to the total rice and corn production in the country, the rice and corn farmers in the area continue to experience difficulty in improving their living standards. Improved technologies for crop production have not helped much the small farmers who, incidentally, are the majority of rice and corn growers in Mindanao, because of their inability to access the right kind and amount of inputs required by the improved technologies.

CROPS AND HORTICULTURE SUB-SECTOR

Current Situation and Constraints

Aggravating the low productivity of the small farmers is the frequent outbreak of conflict in their areas, such as those that occurred in 2000 and 2003. This often leads to the massive displacement of people from their homes and from their sources of livelihood. As noted by the JNA Phase 1, production of major crops such as lowland rice, corn, fruits and other crops declined amid the

abandonment of farmlands, destruction of standing crops, and limited access to farm inputs.

For the majority of the farmers in the CAAs, markets for their products are still tied up with middlemen, particularly with traders who double up as informal credit sources. Although a few cooperatives and farmer associations reportedly existed in some areas, none of them was actively operational. For rice and corn, some of the producers were aware of the National Food Authority (NFA), but they did not seem to understand its limitations in the marketing of grains. Worse, NFA is another government agency that has become ineffective in the purchase of grains from the farmers because of internal fiscal problems.

The generally poor marketing system, associated with small-farm production and the lack of post-harvest facilities, is a major contributory factor to the very serious price disparities in rice and corn in the country. The huge stock at harvest time and the limited capacity of millers to buy and store grains victimize the rice farmers. In need of quick cash for their produce and with limited resources, the small farmers are unable to play with market forces in order to get better prices for their products.

In most of the CAAs visited, farmers articulated their problem as more in accessing than availability of inputs for their crops. In most cases, the farmers were aware of the importance of using improved technologies to attain high yields, but because of their limited resources, they are unable to take advantage of those technologies.

In addition, the general price increases of commodities in the country, resulting from the global increase in the price of oil, will further cause more difficulties to the farmers in accessing production inputs.

Apart from the limited financial resources, farmers' productivity is seriously affected by the inability of the farmers to cope with varying situations such as occasional pest infestations and the availability of good seeds at more affordable prices. They also have to contend with the shortage of irrigation water particularly during a dry spell, weak extension services from the government's agricultural units, and insufficient post-harvest facilities for processing, drying and storing their harvest. There is also the poor financial condition of farmers combined with the lack of appropriate sources of credit and poor road conditions (both at the farm-to-market level and along the major roads). All of these contribute to rising cost of production and marketing of farmers' products.

The situation of the IDPs is even worse. Having lost their working animals and farm implements, and for most of them, even their homes, they have nothing to return to, except perhaps their farms if they are lucky to find them unoccupied by other people. Under these circumstances, their constraints to make a living are even more serious than the others are.

Needs and Potentials for Crops and Horticulture

Due to the uncertainties in food supply brought about by the armed hostilities, food security becomes a high priority in the short term. Coming primarily from farming and fishing communities, much of the initial income and employment of the affected beneficiaries will expectedly come from agriculture and fisheries. Therefore, emergency assistance will have to be provided in the aspects of basic farm implements, draft animals, planting materials and inputs so that returning residents can engage immediately in crop production.

Hands-on upgrading of technical skills must be provided whenever needed. Similar assistance shall be extended to CAA residents who have resettled in their communities, but whose productivity has been restricted by lack of the right tools and materials for production ventures.

The packages should include upgrading of skills in their respective cultures so that optimum yields will be realized. In addition, the farmers should be taught the skills of seed selection in rice for their successive plantings, except for hybrid varieties of rice.

Emergency Needs

In crops, the large majority of the potential beneficiaries in the CAAs are the rice and corn farmers. These are the two major crops grown by farmers in these areas. Coconut is a major crop in the Lanao del Norte area, but farmers seem to depend more on the corn and other crops they grow as intercrops to coconut.

Good quality seeds/seedlings, fertilizers and land preparation and cultivation equipment, together with draft animals, are vital to re-establishing and improving their farming. Table 11 presents the emergency needs with detailed proposals presented in Annex A. The other components of the immediate assistance are found in parallel proposals covering poultry and livestock and agro-processing.

Potentials for the Short to Medium Term

Mindanao has been recognized as the fruit basket of the Philippines with a proven versatility to produce a broad range of tropical crops (field and horticultural crops including industrial crops such as rubber) and even coolseason vegetable species. Its durian production is being viewed as another growing industry because its fruiting season differs from those of Malaysia, Indonesia, and Thailand. The following are potential projects over the short to medium term:

Table 10	Emergency Needs of CAA Residents by Commodity				
Project	Assist	ance Needed			
1. Rice Production	Fertili. Draft a	nnimals mplements			
2. Corn Production		ed seeds zers animals mplements dryers			
3. Vegetable produ	seeds Fertili:	zers			

Table 11	Short-Medium Term Needs of CAA Residents in Fruit Production				
Project	ı	Assistance Needed			
Fruit Production and lanzones)		Fruit tree seedlings, fertilizers, nurseries (including simple basic structures such as greenhouse, screen house, and storage)			

Rationale

Because of the circumstances of the majority of residents in the CAAs, their major concern is to be able to return to their original homes and recover whatever they can of the place they abandoned some time ago. Practically all of the CAA residents are lowland and upland dwellers growing rice and corn. For many of them who have just returned or just preparing to return, they need production inputs, working animals and basic farm implements to be able to start a new life. Assisting them at the start and teaching them how to handle their future needs to sustain their input requirements every growing season will go a long way in re-establishing their livelihood.

Similar help is needed by those who have returned to their communities earlier but continue to suffer from poverty because they have become too dependent on the traders and moneylenders for the supply of production inputs and other basic needs at exorbitant interest rates. The objective then is not only to re-establish them in their communities, but also to be more self-reliant and reduce the costly dependency they have involuntarily built with the middlemen for the production and marketing of their products.

Every household can be given packets of assorted seeds for backyard production of vegetables. Homemakers among the CAA residents had been reported to tend small backyard gardens as source of vegetables for family consumption. Known for their shorter growing season, the vegetables will be most suited for the resettlement situation in the CAAs. Prospectively, some families may find vegetables as additional source of income.

The growing of a few fruit trees by every family is a common practice both as a source of additional nutrition and as a source of additional income. To a certain extent, fruit trees are given aesthetic value for the identity they give to a household, a status symbol as additional family possession and as markers of property boundaries. People tend to plant more fruit trees if there is enough space in the residential dwellings knowing that they can give additional income to the family on long-term basis. This is especially true in Mindanao where the fruit industry has continually grown through the years, encouraged by the climate favorable for many tropical and exotic fruits as well as the growing market for fruits.

There are other primary uses of fruit trees. They are used as alternatives to timber trees in agro-reforestation projects because they make it easier to convince the farmers to withdraw the production of annual crops on the slopes due to the income derived from fruit trees in a much quicker period than from timber trees.

Furthermore, much legality is required to harvest timber trees. In this connection, on the steep slopes of the extensive hills of Upi areas in CAA of Maguindanao, traditionally grown to corn in monoculture system, the farmers have expressed their desire to withdraw some lands from crop production and plant fruit trees instead. They claimed that their corn yields on those areas are already declining rapidly due to the serious erosion of surface soil. They wish to convert some of their corn lands on steep hills to fruit trees.

On the other hand, in areas surrounding Lake Lanao in Lanao del Sur, the residents wish to establish more fruit trees not only for additional income from the fruits, but also to protect the watershed areas feeding the lake. Overall, tree planting must be encouraged and supported for its important roles in nurturing the environment and as a potential source of income for farmers.

Strategy

The general strategy is to extend assistance to the CAA residents that will enable them to quickly return to their farms and become productive. Such assistance can be given in kind in the form of production inputs such as seeds and fertilizers, working animals, and farm implements.

To give them a chance to re-adjust and improve on their productivity, production inputs will be given as a grant for two seasons. The higher production realized for two seasons should give the families enough chance to resettle. Conversely, this will allow the GRP and donor agencies to buy time to develop a bridging program that will make the farmers self-reliant in the long term for accessing their own input needs and, thereby, weaning them from the traders and money lenders for financing.

To ensure that the beneficiaries can maximize their benefits from the assistance under this program, they can be given the opportunity to upgrade their skills in rice and corn production through training. Trainers can be trained more intensively over the short term. They, in turn, can train farmers on-site.

Packets of assorted vegetable seeds and the accompanying fertilizers can be given to each household in the CAAs. Initially, this is intended to augment their household food supply, but this can also expose them to the possibility of growing vegetables for extra income.

The immediate distribution of fruit trees will be more limited initially and can be done in selected communities where the planting of fruit trees will bring positive changes in the ecosystem and eventually give additional income to the beneficiaries. Thereafter, a relatively more extensive distribution of fruit tree seedlings can be done in two distinct ecosystems, e.g., in South Upi, Maguindanao and in the municipalities surrounding Lake Lanao. The residents in these areas have expressed in advance their interest in fruit trees in view of their important role in the protecting the local environment.

Seedling nurseries of fruit trees can be established in strategic locations of the CAAs in order to intensify the program's distribution system. This can be done through the help of cooperatives in supplying the needs of other residents who were not included in the first tranche of distribution.

Preparation for establishing the nurseries can start in Year 3 and distribution of grafted seedlings in Year 4 or early Year 5. Assistance can be extended to set up nurseries in selected strategic locations to cover expansion plantings of fruit trees. Toward the end, the role of private propagators will be strengthened for them to assume a major role in the supply of grafted seedlings. As has been observed in other communities, more residents are expected to plant fruit trees when they realize their value in augmenting family income and in preserving the productivity of their farms.

Criteria for the Selection of Beneficiaries

Because of its mandated objective and limited resources, the program has to be restricted to IDPs following the criteria that will be developed. Identification of the beneficiaries will be done by concerned agencies, such as the BDA, Mindanao Economic Development Council (MEDCo), the DSWD, LGUs, and NGOs. Identification of beneficiaries should include the crop of his or her choice (i.e. rice or corn). The same group will assist in the selection of communities for planting of fruit trees.

Immediate Proposals

As mentioned above, the program for field and horticultural crops can cover emergency or immediate assistance for rice and corn, which are the two major crops grown in the CAAs. Rice is the primary staple and, together with corn, as annual crops they can provide the family income in a period of four months only. In addition, each family can be assisted to grow vegetables in a home garden to supplement family nutrition and income. Some of the vegetables can be harvested in much shorter period of two to three months.

The assistance package can comprise production inputs for two cropping seasons for the three commodities mentioned. Each rice and corn beneficiary can receive a package of assistance comprising of certified seeds and fertilizers for one hectare of land. The assistance can be given for two seasons delivered separately for each season. Similarly, the vegetable package for a backyard garden can be given for two growing seasons

distributed by season to each of the farming and fishing families in the 19 sites. The sample details of this proposal with the corresponding budget are presented in **Annex A**.

Short-Medium Term Proposals

A sample short to medium term proposal has also been drawn up, covering the distribution and production of fruit trees. The fruit trees are intended to supplement family income derived from annual crops on a sustainable basis. However, an equally important objective in the planting of fruit trees is the withdrawal of farmlands on steep slopes from annual crops and replacing them with permanent trees.

The concept, which came from the farmers themselves during a consultation, will correct the continuing surface erosion in the area while at the same time providing them with alternatives that will preserve the productivity of their farms.

In another scenario, fruit trees can be established on farms surrounding Lake Lanao to conserve the watershed areas. Lake Lanao is the second largest lake in the Philippines. It provides fishing livelihood to thousands of people residing around the lake area. However, farming around the lake is felt to have affected its productivity, hence, the preservation of its watershed areas is considered as a priority through agro-reforestation with fruit trees. The fruit trees will provide income to the families and while waiting for fruits, they can grow annual crops as intercrops.

The distribution of grafted seedlings in other parts of CAAs can be done later, in Year 4, after establishing the viability of fruit trees as potential source of added income and as an important component of the environment in the first tranche. For early-bearing trees like rambutan, harvesting will begin after three years while early indications of potentials can be visible already at that time for the other tree species such as durian, mangosteen, lanzones, and mango.

For strategic and logistical reasons, the first tranche of fruit tree production can be done in the two distinct ecosystems in the CAA, e.g., in the intensive corn producing area of Upi, Maguindanao and in the upland farming communities surrounding Lake Lanao. These areas are smaller and localized and they can yield important lessons on the performance of the tree species that will be distributed. They can serve as a show window for the other areas. All plant materials needed for the first tranche can be purchased from nurseries from other areas in Mindanao.

To ensure the availability of supply of grafted seedlings in the CAA communities, nurseries can be established in strategic areas of the CAAs in Year 3, which will lead in the production of grafted seedlings. When justified by demands, private nurseries can also be encouraged to sell grafted seedlings outside of program assistance

Estimated Costs

Indicative cost for the sample immediate crop and horticultural assistance program for crop production and for the short-medium term program for the 19 municipalities is estimated to be about USD 6 million. Indicative amount for all CAAs is USD47 million.

Expected Benefits

Considering that the technical and economic problems experienced by the majority of the farmers in the CAAs are associated with access to production inputs, irrigation water supply, market and accessibility, assistance extended along these aspects will contribute immensely to their productivity. Each of these factors will contribute both independent and interactive incremental increases in the productivity of the beneficiaries. However, maximum profitability cannot be achieved unless all problems associated with them are corrected, in addition to the corrective steps to be undertaken on other social problems experienced by the communities.

Emergency Assistance. With the assistance extended by the program, yields of crops are expected to increase significantly, at least for the two growing seasons that will be covered by the program.

Medium Term. Production benefits from the fruit trees will not be realized until they start bearing fruits, that is, after three or four years at the earliest from planting.

However, indirect benefits can be derived in terms of their immediate effect on the ecosystem, particularly those that will be established to replace some annual crops on the steep hills of Maguindanao and to preserve the watershed areas around Lake Lanao. A reduction of soil erosion can be achieved which will preserve the productivity of lands downhill and reduce siltation in the lake.

Still, an average yield of as much as 10 kilograms (kg) per tree can be realized initially for all trees, increasing each year with age to as much as 100 kg per tree per season, in the case of mangoes.

Short-term goals of increasing productivity are highly attainable by using improved technologies, but can be sustained only by improving other contributory factors to productivity and profitability. The attitudes of the beneficiaries in efficiently managing their resources and live harmoniously within their environment will also play a big role in successful agricultural venture. However, to achieve sustainable production and income, peace is an indispensable element.

Issues and Risks

In any undertaking, there are issues and risks. Certain assumptions are needed to realize certain expectations. Some of these assumptions are that criminality and all other forms of conflict are placed under control and general peace and security assured in all parts of Mindanao, specifically in the CAAs; and, that mutual trust among and between people and government are developed and sustained. It also assumes that all factors of production, including infrastructure, market environment, institutions, and government policies and programs are in place and supportive of farm activities.

Other assumptions are that participants including recipients and donors are expected to

be able to meet their respective responsibilities in the project as planned; recipients are able to manage their resources for optimum productivity under a sustainable environment; and no major calamities, internal nor external to the project, would occur.

FISHERIES SUB-SECTOR

Current Situation and Constraints

The fisheries resource is one of the major and dominant resources in Mindanao. The fishing ground is varied, serving both municipal and commercial fishing activities. The major fishing grounds in the country are located in Mindanao, which include the Sulu Sea, Celebes Sea, Moro Gulf, Illana Bay, Tawi-Tawi Bay, Basilan Strait, Panguil Bay, Iligan Bay, Davao Gulf, Sarangani Bay, and Macajalar Bay. The conflict in the utilization of these fishing grounds often stems from encroachment of commercial vessels from Visayas and Luzon islands and, in some cases, foreign vessels, which indicate weak institutional implementation of existing laws.

In addition, the boundary conflict between municipal and commercial fishing grounds has been extensively violated by commercial fishing activities. This is the result of an unclear national policy. Inland water bodies in Mindanao are estimated at 65,899 ha, river basins and marshes about 265,101 ha, all underdeveloped and available potentially for fisheries development.

The Bureau of Agricultural Statistics (BAS) indicated that the fisheries industry contributed 3,619.2 metric tons to total Philippine agricultural production in 2003. From 1999 to 2001, Mindanao contributed 325.27 metric tons to the total marine municipal fisheries production; 136.3 metric tons to inland fisheries; 379,142 metric tons to commercial fisheries; and, 521,909 metric tons to aquaculture production. The data showed an apparent increase in marine fisheries production from 1999 to 2002 by 3%. This case was similar to inland fisheries production. Commercial fisheries production had steadily increased to about 6-7 % from 1999 to 2002, but aquaculture production decreased by 31.484 metric tons from 1999 to 2000.

The current product marketing system in Mindanao is similar to many areas in the Philippines, and is dominated by, and dependent upon, the activities of middlemen, who in addition to being distributing agents, also acted as the *suki* (regular buyer). They also provide ready credit and other forms of assistance to their regular fisherfolks-suppliers.

This system has been in place even before the conflict. Unless appropriate formal credit systems and rural infrastructures are developed, this will not change as perceived by institutions. The pattern of distribution depends upon the production volume and species composition, availability of support services, infrastructure and proximity of markets. In general, the market flow in many areas is from low-priced village market to high-priced towns and urban markets.

In Mindanao, it is estimated that 65% of the total fish production is sold as fresh. The processing system, such as drying of fish, occurs mainly in villages with marketing difficulties and the fish species used are those generally not favored in the market in fresh form. These practices, however, are carried out with no uniformity in product quality.

The fish catch of small municipal fisherfolks is primarily distributed to nearby market centers. The production of commercial vessels and fishponds are earmarked for major urban and export markets as in the case of the tuna fishing in General Santos City, where distribution is characterized by formal organization and the availability of support and infrastructure facilities, such as storage.

In many urban areas in Mindanao, the middlemen or brokers have proven themselves as effective distribution agents, but their presence is also the apparent cause of the low returns received by fisherfolks and the high prices paid by consumers.

The traditional fishing vessel of municipal fisherfolks is a reinforced dugout canoe (locally called *banca*) of not more than three gross tons. These *bancas* – measuring 4-10 meters in length and about 0.7 meters in width – are fitted with outriggers when in the marine waters, without

outriggers in lakes and inland waters. Most of these boats do not exhibit stability and this limits fishing operation. Its design also does not provide enough space for more than one type of gear as well as the proper handling of fish. The most commonly used engines are the 5-16 horsepower.

The most commonly used gear are the low-cost and easy to operate hook, line, and gill net, notwithstanding the various fishing gears available for municipal fishing. As in many parts of the country, small municipal fisherfolks have remained highly traditional with limited application of inputs and adoption of new technology. There is insufficient data on the number of fisherfolks in Mindanao.

Constraints

In spite of the fisheries potential in Mindanao, its development has lagged behind due to various issues and constraints that inhibit the maximum fishery development in Mindanao. These include the following:

- Socio-economic condition of the communities
- Inadequate infrastructure (the rural road system, fish cold storage, ports)
- Weak extension services to transfer new technology to the fisherfolks
- Limited access to education and training
- Inadequate credit or capital facilities for fisherfolks with limited or no collateral
- Non-sustainability of the production system through resource degradation
- Over-exploitation of resources
- Illegal fishing and harmful fishing practices despite existence of laws and ordinances
- Recurrence of armed conflict

Needs and Potentials

The immediate needs of the people in the CAAs were determined during the initial JNA meetings at Davao City and the during the JNA field visits. The needs identified include (i) employment opportunities; (ii) identifying other income-earning activities; (iii) provision of basic equipment required to be able to engage immediately in productive activities; and, (iv)

skills upgrading relevant to the employment/income-earning activity identified.

In the medium term, enhancing the productivity in these areas will require investments in infrastructure to support the growing industries. Among these infrastructural inputs are farm-to-market roads, fish cold storage, processing system, ports, and other facilities.

Rationale and Strategy

Mindanao has often been referred to as "the land of promise" given its abundant natural resources that have yet to be fully developed. It is ironic therefore that even with its varied and rich resources, poverty is still prevalent among its people.

Recent data showed that the number of poor people in Mindanao is increasing; that it has among the highest poverty incidence in the country; and that among 20 poor provinces in the Philippines, 14 are found in Mindanao (10 in Central and Western Mindanao and the rest are in the ARMM).

The conflict in 2000 affected largely the inland fisheries activity in Lake Lanao in Lanao del Sur and Liguasan Marsh in Maguindanao and North Cotabato. Majority of the fisherfolks in 21 municipalities around Lake Lanao abandoned their activities, and people left their communities for safer places within the province. This is also true in the Liguasan Marsh. These areas are largely linked with the social, cultural, and religious evolution of the people.

The return of the IDPs and the reconstruction of these areas are slow. Many have returned to their homes and are slowly rebuilding their communities. Most of them have returned to their traditional fishing practices consisting of hook, line, and fish traps. The fishery supplies in many of these areas come from other localities and it is an indication of the small catch of the fisherfolks. In order to survive, many fisherfolks have resorted to illegal fishing using dynamite and electric fishing. This has seriously affected fish stocks in many inland waters, notably Lake Lanao. There were 18 endemic cyprinids reported in the lake, which represent important fishery commodities. Recent surveys

conducted by FAO staff indicate that only two species have substantial stocks, whereas all others are close to extinction.

As a confidence-building measure, the GRP and the MILF should help create immediately employment and livelihood opportunities among the conflict victims so that they will feel that they are part of the peace process. Since the CAAs have a predominantly agricultural economy, the initial livelihood and employment opportunities to be generated will have to be in agriculture and fisheries.

Basic fishing implement and seed inputs have to be provided to the residents to enable them to engage immediately in productive activities. Examples include the provision of boats and fishing gear; establishing seaweed farms; the provision of cages in some selected marine and inland coastal areas; and, parallel programs for skills upgrading.

A medium and long-term strategy has to be developed in order to promote the growth and expansion of the fisheries sub-sector in the CAAs.

A strong extension service and training program will encourage fisherfolks and fish culturists into adopting new technology as they realize that these programs will help boost their incomes. Meanwhile, an infrastructure program will provide a highly visible positive sign to the people that has the potential of influencing the entire peace building process.

Immediate Needs

Rehabilitation of Municipal Fisherfolks Livelihood The March 2000 conflict, which started in Kauswagan, Lanao del Norte, affected directly many fishing communities in Lanao del Sur, Maguindanao, North Cotabato and Sultan Kudarat. Many people had been displaced, in some cases the whole community had to leave to safer areas. The majority of fisherfolks in these areas lost their fishing implements, including boats. While many families are still living in other communities, the process of their return is ongoing. In some areas, assistance has been provided by NGOs, the government and church-related groups.

Initial activities should aim at providing basic inputs to families to rehabilitate and improve their fishing livelihood. A starting point could be the offering of basic inputs such as gears, fishing nets of various mesh sizes, and boats for groups of fisherfolks.

Enhancing Seaweed Farming in Coastal Barangays Seaweed culture served as the main income earner for at least 60% of the population in the provinces of Sulu, Tawi-Tawi, and Basilan. From 1997 to 2002, seaweed production in Mindanao accounted for about 78% of the total seaweed production in the Philippines. The proposed emergency project should be developed along the coastal towns of CAAs of Maguindanao, Lanao del Sur, Lanao del Norte, Zamboanga del Sur, and Zamboanga Sibugay.

Short Term-Medium Term Projects

Improvement of Marine and Inland Fish Cage Culture Operation and Production

Inland fisheries activity in Lanao del Sur and Liguasan Marsh were affected by the conflict in 2000 and in 2003. Many facilities were destroyed and abandoned. Some were rehabilitated but the production is low largely due to inadequate supply and quality of fish fingerlings. The objective of this program is to enhance and improve fish production by fish cage culture among IDPs and other members of the community. This will benefit about 500 families in the Lake Lanao and Liguasan Marsh Areas and coastal CAAs in selected parts of Lanao del Norte, Zamboanga del Sur, and Zamboanga Sibugay.

Development of Fish Hatcheries

The success of marine aquaculture projects in Mindanao is dependent on the development of hatcheries to enhance production of quality fingerlings. The poor production from fish cages, fish pens, and fishponds is always associated with poor quality "seeds" or fingerlings. There are small government hatcheries in Lanao del Sur and Maguindanao but these structures have not been operational due to financial constraints.

The project can meet the demand for quality fingerlings of carp, tilapia, and other fish types. It

will also help support the rehabilitation program for fish stocks in Lake Lanao, and rivers and marshes in the Central and Western Mindanao. The project will benefit not only fisherfolks and fish culturists; it will also support the other projects on fish cage culture to be set up in other CAAs in Mindanao.

Estimated Costs

Indicative cost for the sample activities under the fisheries sub-sector is estimated to be USD2.25 million for 19 sample municipalities and USD18 million for all CAA municipalities.

Expected Benefits

The immediate objectives envisioned by the project are to help the CAAs to produce sufficient food and/or access to it, and to develop livelihood opportunities. The rehabilitation of municipal fisherfolks, in both marine and inland waters, can benefit 3,300 families/households in the coastal towns of Sultan Kudarat. Maguindanao, Lanao del Sur, Lanao del Norte, Zamboanga del Sur and Zamboanga Sibugay, and the inland waters of Lanao del Sur (Lake Lanao), Maguindanao, and North Cotabato (Liguasan Marsh).

It is expected that fish production in these areas can increase by 26.3 metric tons valued at USD 16,964.28 at an average price of USD 0.64 as indicated by data from BAS. In addition, the activities can create "own enterprises" employment for women and possibly the youth in term of fish processing such as fish drying.

The seaweed farms can benefit 3,300 families/households in the coastal towns of Maguindanao, Lanao del Sur, Lanao del Norte, Zamboanga del Sur, and Zamboanga Sibugay. This project can complement the Project on the Rehabilitation of Municipal Fisherfolks. The seaweed project can contribute about 2.1 metric tons of dried seaweeds into the market, both domestic and international, with an average price of USD 6.65.

These projects can have a "multiplier effect" both upstream and downstream. They can provide

income opportunities in seed supply network, market chains, and repair support services. In general, the project can provide employment for the rural poor through direct labor inputs. Indirect benefits of these projects can include an increase in the availability of fish in local rural and urban markets and increase in household income, which will become available through increased local consumption of fish. In addition, sufficient economic opportunities can likely to lead the people in these areas to support lasting peace in Mindanao.

Issues and Risks

The issues and risks for the sub-sector include the following:

- Peace and order
- Inability of small fisherfolks to catch fish due to the encroachment of commercial vessels into the municipal waters
- Diseases caused by inclement weather
- Inadequate extension services by government agencies
- Inadequate credit facilities and market access

LIVESTOCK SUB-SECTOR

Current Situation and Constraints

The armed conflict has adversely affected the productivity of the farms in the CAAs. The lack of draft animals has seriously affected the farmers' capability to till and cultivate their farms. Similarly, the lack of chicken, ducks, and other small farm animals has affected their means of getting supplemental incomes. Fortunately, the strong market for native chicken, duck eggs, and goats still exists.

The significant reduction of the supply coming from the CAAs, as result of the conflict, may have partly contributed to the current market situation. Hence, the current market demand should be able to encourage the IDPs and other farmers to raise those animals and improve their productivity. However, the IDPs do not have the means and resources to engage in these activities unless there is a readily

available source of capital, or unless grants are provided.

During the hostilities, about 60% of the draft and other animals were killed or slaughtered. The emergency situation prompted families to sell their animals at very low prices. They needed cash immediately in order to flee to safer ground. In localities where fighting was intense and heavy, it was estimated that up to 80% of the animals were killed.

Chickens are still the most popular backyard animals raised by the IDPs, especially the corn-growing IPs in the uplands. This may also explain the popularity of swine production among Indigenous People, many of whom are non-Muslim. On the other hand, ducks are more popular among the Muslim IDPs since most of them are living in the lowlands and along lakeshores and riverbanks. Data also show limited ownership of carabaos and cattle among the respondents, reflecting the extent of the damage inflicted on the population of these draft animals and cattle. Cattle rustling is also a concern in certain CAAs.

Needs and Potentials

Based on the assessment of conditions, farming systems, and market situation in the CAAs, the following are the immediate needs of the IDPs:

- Draft animals and basic farm tools, such as plows and harrows, to allow upland and lowland farmers to return immediately to crop production, which is their main source of income.
- 2) Backyard animal projects should be encouraged as a source of additional income, such as layer-ducks for salted eggs processing for IDPs in the lowland-rice growing areas and in marshlands and along coastal areas. For the IDPs in corn-growing uplands and for fisherfolks the raising of native chicken is recommended.

Rationale and Strategy

Because of the conflict, about 60% of draft animals were killed. The provision of draft animals and basic tools such as plows and harrows will enable the farmer-IDPs who lost their draft animals to resume their farming activities.

It is also necessary to provide them with chicken and ducks, the two most popular animals raised by the IDPs even before the war, as sources of supplemental income. Farm and household residues and whatever else may be available at the farmstead and in the surrounding grassland may be utilized as feeds for these chicken and ducks.

Provision of Draft Animals and Basic Farm Tools

Cattle will be the preferred draft animals for both lowland and upland especially in areas where carabaos are difficult to procure. Compared with carabaos, cattles are more efficient as beasts of burden. Unlike carabaos, they do not need to wallow in water to cool off their bodies every one to two hours during hot and sunny workdays.

Due to the large number of potential beneficiaries and the limited availability of draft animals, the beneficiaries (as per validated master list) can be grouped into clusters of 50 families. Each cluster can be provided with 15 animals (3 males and 12 females). Every member of the cluster will have the opportunity to own their draft animal in five to six years, when the females give birth.

Enhanced Backyard Duck-Layer Production

Ducks can be provided to the IDP families living in the lowlands and along lakeshores and marshlands where they can feed on the snails, worms, insects and young weeds that are naturally found in rice fields, lakeshores, and marshes. They can also feed on fallen paddy grains that abound during harvest of rice. Housewives can undertake the layer duck project to give them the opportunity to contribute to the family income.

Clusters of 15 families can be organized. Each cluster can be provided with 200 ready-to-lay ducks and 20 drakes of improved egg type breeds. To add value to the eggs and to add to the product marketability, training on the processing of salted eggs will be undertaken.

Enhanced Native Chicken Backyard Production

This family-based project can be provided to 9,120 upland farming and 2,100 fishing IDP families in the 19 identified CAAs, particularly in the corn-growing uplands, where there is abundance of natural feed resources. The project can also be made available to housewives and to the youth (especially the out-of-school youth) to give them the opportunity to contribute to family income.

Each family can be provided with 13 native or upgraded ready-to-lay pullets and two breeder cockerels or roosters of improved heavy breeds/ strains. However, the locally known "Pawakan/ Basilan/Saigon" strain can be given preference.

Emergency Proposals

The farmer IDPs who lost their draft animals when the hostilities broke out need to be provided with draft animals, plows, and harrows to enable them to immediately return to farming, their main source of livelihood. On the other hand, they, together with other IDPs, which include fisherfolks, should also be provided with a few heads of chicken and ducks to enable them to generate supplemental income.

The following considerations were taken into account in introducing backyard production of chicken and layer-ducks: market demand, availability of feed resources, quick gestation (short production cycles), regularity and stability as source of additional income, and the utilization of available family labor.

The lives of the IDPs and others in the CAAs are still unstable since the outbreak of the conflict in 2000 and 2003. This is because the conflict has not only inflicted social and emotional damage; it has also disrupted their livelihood. About 60%

of the draft animals and other farm livestock were killed on top of the destruction their homes, farms and equipment. Left without means and resources, their return to a normal life is difficult.

Estimated Costs

Indicative cost for the sample activities under the livestock sub-sector is estimated to be USD2.25 million for 19 sample municipalities and USD18 million for all CAA municipalities.

Expected Benefits

There are both social and economic dimensions to this proposed support project for livestock livelihood. Over the long term, it may enhance the confidence-building process to pave the way for peace and stability in the CAAs.

The provision of draft animals and basic farm implements will not only enable them to intensify crop cultivation but will also allow them the flexibility to adjust the cropping calendar in accordance with the rest of the farms.

Housewives/women together with the youth in the lowland-rice-growing, marsh and lakeshore communities can be involved in and benefit by the "Enhanced Backyard Layer-Duck Production" project.

On other hand, the "Enhanced Backyard Native Chicken Production" project, which will also involve the women and youth, can benefit families in the corn-growing uplands and fishing families. In addition to the supplemental incomes and the employment provided by the backyard production projects, the beneficiary families will also be able to improve their protein intake, as eggs and meat become more accessible.

Issues and Risks

This sub-component is best implemented by community-driven development approach. The large number of draft animals, ducks and chicken to be purchased is certain to make suppliers reluctant to serve the order unless prepayment is made given the huge amount involved. Thus it will be necessary to identify in advance all the possible sources/suppliers and major traders of livestock and inform them of the possible volumes of order. This should be done while the master list of beneficiaries is being prepared. It will also be prudent to conduct a background check of the suppliers, their financial capability and business reliability. The local offices of DA and the Land Bank of the Philippines can probably help with this. Another way to minimize risk is to limit the amount of purchase order per supplier.

Suppliers may not be able to deliver animals to CAAs sites due to the bad road conditions and security concerns. Thus designated drop-off points should be specified that are strategically located and with facilities to temporarily hold the animals if necessary. Arrangements should also be made on the number and type of vehicles that are capable of negotiating the roads to the final delivery sites. Delay in delivery could be harmful to the animals. A day before transport and during loading the health and condition of the animals should be checked.

The project managers must address the issue of strengthening the capability of the Municipal Agriculture Office (MAOs) to deliver extension and veterinary services, including the issue of mobility. One way is to conduct training via farmer field schools on the prevention and control of common livestock pests, as well as the benefits of and proper scheduling of vaccination and medication including de-worming.

Monitoring should include seeing to it that the animals are well cared for, not slaughtered to celebrate special occasions or sold to raise cash. This shall be part of the extension and veterinary services of the project staff. In effective extension work, there is no substitute to regular farm and home visits.

Problems are inherent in the process of clustering or grouping of IDPs to share or implement a common project or facility.

The mechanism on the rotational schedule in the use and care of the animals and the dispersal of the offspring should be thoroughly discussed and understood by the members. After discussion, a Memorandum of Agreement (MOA) should be

prepared and signed by all of the members. The MOA should include a provision for the formation of a "Crises and Conflict Committee" to resolve problems that may arise among the members. The strategy described above should also be adopted for the Enhanced Layer Duck Production.

SMALL-SCALE IRRIGATION AND POTABLE WATER SUB-SECTOR

Current Situation and Constraints

The failure of the Irrigators' Associations (IA) and the Rural/Barangay Water and Sanitation Associations (RWSA/BWSA) caused the discontinuation of the operations of communal irrigation systems and of the supply and availability of potable water in most parts of the CAAs. Contributing to the deterioration were the peace and order problem and the clan disputes.

Already inadequate, many of the existing irrigation systems were destroyed during the conflict. A number were used for the warfare to serve as bunkers, trenches, and fox holes. Particularly for the small irrigation systems and potable water systems, maintenance was forgotten as the people fled for safety and survival.

People who participated in the conflict and the people who were forced to flee their homes because of the conflict must be motivated to return and cultivate these fertile lands once more. New settlers must be induced to live here and renew these agricultural lands. The materials to rebuild the lives of people in these areas are available and what is needed is assistance and guidance. The construction/reconstruction of Communal Irrigation System (CIS) and Potable Water Supply (PWS) will be the instruments to make these areas highly productive.

Many of the abandoned farmlands were not revived as the evacuees have so far refused to return to these areas for fear of their safety. There is no assurance that they can harvest their crops. Even those brave enough to return are dismayed to find infrastructure support like communal irrigation systems and the life-supporting potable water systems are no longer functioning.

Rehabilitation of such facilities has been slow, if not totally absent. The institutions mandated to deliver

Table 12	Possible Five-Year Irrigation Program (Year 5 - 2010)				
Project	No. of Scheme New Construction	Service Area (ha) Potential			
Maguindanao Lanao del Norte Lanao del Sur Sub-Total	42 61 11 114	5,591 4,013 1,816 11,420			
Project	No. of Scheme New Construction	Service Area (ha) Potential			
Maguindanao Lanao del Norte Lanao del Sur Sub-Total	24 25 5 54	1,947 1,662 380 3,989			
TOTAL:	168	15,409			

these services are difficult to find in these areas. The construction/rehabilitation of CIS and PWS will be a big contribution towards the renewal of productive enterprise in these areas.

Needs and Potentials

The needs and potentials for CIS projects in the CAAs may be represented by the possible five-year irrigation program in the provinces of Maguindanao, Lanao del Norte, and Lanao del Sur summarized in Table 12.

The above summary considered only the proposed projects with service areas of less than 150 ha. The five-year programs identified specific projects with potential water sources. For the three provinces of the seven pre-identified site provinces alone, there is a need to build 114 schemes to service a potential area of about 11,420 ha and a need to rehabilitate 54 schemes with a command area of 15,409 ha.

For the needs and potentials for PWS projects, the information supplied for 12 municipalities may serve as a representation of the areas and summarized as follows:

- Palimbang, Sultan Kudarat: No existing potable water system in the entire municipality except for individually owned shallow wells.
- Shariff Aguak, Maguindanao: No existing

- potable water system in the entire municipality except for individually owned sourced water.
- South Upi, Maguindanao: PWS Level II located in the poblacion needs major repairs or rehabilitation and no PWS in the other 10 barangays.
- M'lang, North Cotabato: 35 barangays of the 37 barangays composing the municipality have their own PWS-Level II.
- Matanog, Maguindanao: There are no water supply systems; underdeveloped spring source is located 10 kms away from the poblacion.
- Kapatagan, Lanao del Sur: Underdeveloped spring source in Barangay Dimagaling estimated to be capable of serving the needs of the entire poblacion and four other barangays.
- Madalum, Lanao del Sur: Thirteen barangays have existing PWS; the other 24 barangays have spring sources for development.
- Butig, Lanao del Sur: DAR-STARCM assisted PWS in Barangay Sandab has insufficient supply; none of the other 15 barangays have potable water system.
- Baloi, Lanao del Norte: Ten barangays are without potable water system; while six barangays have PWS but need expansion/upgrading.
- Kauswagan, Lanao del Norte: The poblacion has PWS-Level III; nine barangays have PWS-Level II; three barangays have none.
- Labangan, Zamboanga del Sur: Thirteen have

PWS that needs improvement (insufficient transmission line); six barangays without water sources.

<u>Ipil, Zamboanga Sibugay</u>: Thirteen barangays of the 28 barangays are still without PWS.

Rationale and Strategy

The goal in the implementation of the CIS and PWS construction/rehabilitation programs is to optimize the utilization of the abundant water resources in these areas. To implement the programs, the most effective conduits would still be the mandated government agencies, the NIA for irrigation systems and the Provincial Engineering Office (PEO) and the Municipal Engineering Office (MEO) for the water systems considering their expertise, experience, and facilities.

The local governments will be a party to any CIS development through its Provincial Irrigation Office (PIO), PEOs, MAOs, MEOs, and other offices. Throughout the construction/rehabilitation process, the LGUs will be available to advise the IAs. The BDA and NGOs where practicable will also advise and collaborate with the beneficiaries and the IAs.

Proposals

Small-Scale Irrigation Projects

Small projects with service areas of not less than 20 ha but not larger than 80 ha and requiring simple design and easy construction may be proposed to start immediately. The pre-construction stage for these projects can be completed within a six-month period and construction can be completed within two years from the start.

Larger projects with service areas of no less than 80 ha but not greater than 140 ha and requiring more sophisticated design and construction methods may be proposed to start the pre-construction stage after the first year of the program. The pre-construction stage may be started on the second year of the program and construction can be completed within a three-year period. The whole CIS program from start of pre-construction to the completion of the last project can be completed within a six-year period.

The project can construct and/or rehabilitate about 30 projects that will irrigate about 1,600 ha. All projects proposed for inclusion in the CIS program will be subject to a set of selection criteria.

PWS Projects

In general, proposed projects for PWS will be collateral projects to planned CIS projects and will not be considered as a stand alone. They will be proposed together. The project should provide water supply to families. Water from source is tested potable or can be treated potable. Proposed CIS projects for inclusion in the program will be subject to a set of criteria.

Estimated Costs

The unit cost used in this report is a result from analysis of information gathered during the field visits, and data from recently completed projects of the same nature and from consultations with experts. Indicative cost for the sample activities under this sub-sector is estimated to be USD3.5 million for 19 sample municipalities and USD28 million for all CAA municipalities.

Under NIA's current practice, the unit cost includes community mobilization and organization, and training of farmers, which is estimated at 6% of project cost. The unit cost for PWS projects includes the supply of a set of pipe wrench and pipe threader for maintenance purposes, along with requisite trainings of farmer-beneficiaries.

Expected Benefits

The CIS projects are expected to have the following benefits: enhanced yield; multi-cropping; desirability of high-value crops; increased income; and a confidence-build up for peace efforts. The PWS projects are intended to minimize water-borne diseases; improve health of the residents; increase productivity; save time, money and labor; and also as a valuable input for the peace building efforts.

Issues and Risks

The major risks associated with implementation of the CIS are the technical and financial capability of the IAs to maintain on a sustainable basis the completed project. Participatory approach will involve the IAs from the identification of the specific sub-project to completion, giving the IAs opportunities to be familiar with and learn about the project.

The NIA process of project implementation includes institutional development where NIA is required to organize the IA and to provide the requisite trainings. NIA is required to provide technical assistance to the IAs and even financial assistance in case of major repairs.

The capacity of the PIO or even the Regional Irrigation Office is also at risk under the present conditions. Experience shows that a number of projects remain uncompleted, substandard, and the funds not properly expended. The Oversight Office, the LGUs, the NGOs and the beneficiaries will closely monitor the work progress and fund expenditures.

For the PWS, the major risks associated with its implementation are the technical and financial capability of the RWSA/BWSA to maintain on a sustainable basis the completed potable water system. Participatory approach will involve the RWSA/BWSA from the identification of projects to their implementation and completion giving the RWSA/BWSA opportunities to be familiar with and learn about the projects, giving them a sense of ownership.

Training of the RWSA/BWSA members will be included in the process. Maintenance tools such as a set of pipe wrench and pipe threader will be included in the delivery of the project. Technical assistance by the LGUs, through the PEO/MEO, will be extended as necessary.

The ability of the PEO, much more of the MEO, to implement the project is at risk particularly in the CAAs. The implementing office will be strengthened with consultants and experts. The Oversight Office will have to oversee the implementation closely.

POST-HARVEST AND HOUSEHOLD PROCESSING SUB-SECTOR

Current Situation and Constraints

The agriculture sector focused on the assessment

of crops, livestock, fisheries, rural infrastructure, post-harvest and household processing and institutional settings in the CAAs. Conflicts, lack of security, and people displacement resulted in setbacks in farm production, in the distortion of the domestic trading system in farm input supply as well as in the marketing of produce in these areas.

In spite of the ready markets available in Davao, General Santos, and Cagayan de Oro, production in the CAAs failed to respond favorably to these opportunities. Reduction of credit availability from traders and credit providers is primarily due to threats and instability.

Moreover, processing and marketing in the CAAs suffered tremendously due to the inability of farmers to harvest on time. Overall, the low production and lack of investments in the areas resulted in low productivity, poor employment opportunities aggravating poverty and malnutrition among families in CAAs.

In all CAA areas, rice and corn, being the staple food of the families, are the primary crops grown in both irrigated and rain-fed farms. Farmers also grow rice and corn as intercrops in coconut plantations. However, post-harvest facilities in all sites are antiquated and inadequate to handle even the low production crops cultivated at present.

Farmers and local government officials in all areas visited by the JNA assessment team expressed the need for irrigation facilities, farm implements, farm tractors, threshers, dryers, corn shellers, mills, and warehouse and cold storage facilities to store their harvests. Moreover, similar inadequacy exists in handling fruit crops, vegetables, forest products and financial support to stabilize prices during bumper and critical harvests.

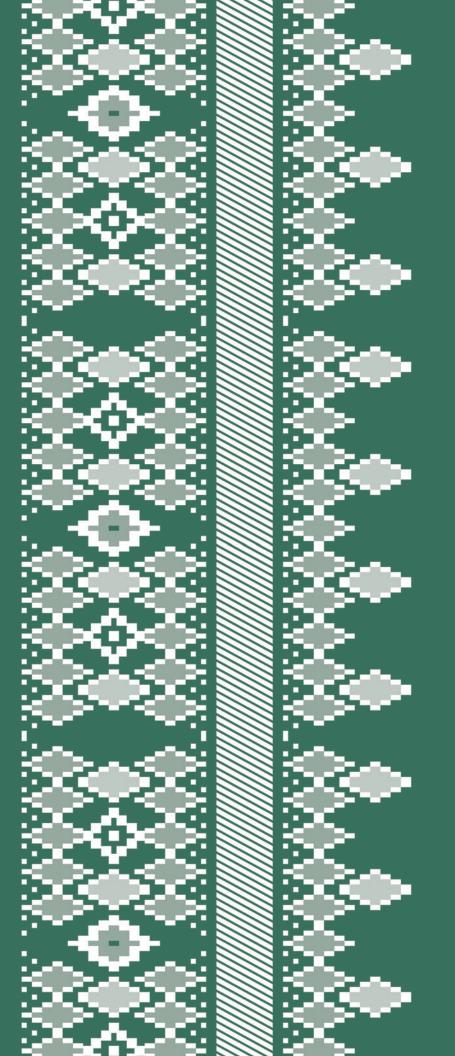
The farmers and entrepreneurs cited the need for the establishment of post-harvest and household processing industries to handle high-value crops, livestock, and fisheries. While the agricultural component of the rural development sector envisioned increases in crops, livestock, and fisheries production, this will require the handling and processing of farm products in the shortest possible time to prevent post-harvest losses in quantity and quality.

Proposals

For this sub-sector, examples of possible projects are presented in **Annex A**: (i) construction of solar dryers; (ii) women's household food processing, and (iii) women's household meat processing.

Estimated Costs

Indicative cost for the sample activities under this sub-sector is estimated to be USD0.4 million for 19 sample municipalities and USD4 million for all CAA municipalities.



4

Agribusiness and Marketing



Agribusiness and Marketing

There are two Mindanaos. One is the traditional Mindanao where majority of the people engage in farming and fishing. Then there is modern Mindanao, the agribusiness center of the Philippines, where the island's diversified agricultural and fishery produce gets added value and full play in the world market.

Several world-class corporations are located in Mindanao, producing and exporting bananas, pineapples, asparagus and other vegetables, seaweeds and carrageenan, banana chips and many more. Perhaps the most famous one is Del Monte in Bukidnon. Its integrated operation starts from the planting to harvesting of the fresh pineapples, to its processing into canned varieties, and eventually for export into the international market. There are other world-class corporations which are mainly owned and managed by Filipinos.

Mindanao supplies about 70% of Japan's banana requirements and almost all of its fresh pineapple imports. It also exports banana to China and South Korea. In the tuna market, Mindanao is a key player with its total capacity of 700 tons fish per day. Forty percent of its canned tuna is shipped to the European Union and about the same to the United States. The Philippines supplies about 50% of the world's tropical seaweeds and its processed product, carrageenan (a key ingredient in processed foods). Half of the country's seaweeds are produced in Mindanao, mainly from Tawi-Tawi. However, most of the dried seaweeds are processed in Cebu.

Mindanao is also the main source of coconut product exports from coconut oil to desiccated coconut to oleochemicals to activated carbon. A number of large copra crushing plants and desiccated coconut plants are situated all over the island. Mindanao is also the source of natural rubber exports.

As host to 1.50 million farms on 3.85 million ha of farmlands (or an average farm size of 2.56 ha, according to the 2002 Census of Agriculture),

Mindanao is a study of the two worlds. On one hand there are the globally competitive farms and processing operations; on the other hand there are the farmlands that are either subsistence or at low productivity levels.

Of the nearly 3.85 million ha of farmlands, those under "modern" agriculture could be in the order of at most 250,000 ha. The rest are under low-yielding coconut, upland corn and rain-fed rice where small farmers, tenants, and landless workers subsist. While a few modern corporations practice "seed-to-shelf" supply chain management, most of the farms still follow the old ways including multiple layers of layered marketing that keep their profits to the minimum.

Production and Markets

The CAAs belong to the Mindanao where traditional agriculture corn, coconut and rice dominates. There are undoubtedly some exceptions. Many of the corn farms have adopted hybrid seeds. There are some adaptors of hybrid rice. Some entrepreneurs have planted sugarcane, oil palm and fruit trees. Two of the CAA barangays in South Cotabato are very near a large integrated pineapple operation (Dole) in Polomolok and some farmers have become growers.

Some CAA municipalities are close to La Frutera banana plantations in Paglas (Maguindanao) as well as Kenram Palm oil mill in Tacurong (Sultan Kudarat). The CAAs can benefit from the various growership schemes of agribusiness firms, such as in banana, corn, cassava, and pineapple.

Farming in the CAAs is primarily in the early stages of modernization. Its farming practices are still what had been handed down through the generations, with some technological improvements largely in the form of improved seeds and fertilizers. Unfortunately, farm modernization cannot take off due to law and order problems, land issues, access to good infrastructure, and weak local governance.

While rice has local markets, much of the CAA surpluses are sold to other parts of Mindanao, the rest of the Philippines, and overseas. For example, corn is either shipped to northern Mindanao as ingredients for feed mills or "exported" to Cebu and Manila. Copra is brought to the various mills in Mindanao and later exported as crude or refined coconut oil. Cardava banana is brought to chip plants and exported. Today, the CAAs are mainly raw material suppliers and lack the value-adding infrastructure.

Improvement in access infrastructure (transport and to a certain extent, communication) will help in facilitating markets, input supply, and technology. In addition, the perception of "no law, no order" discourages investors in production, trading and banking.

Marketing

The marketing system for agricultural commodities is relatively free. However, there are multiple intermediaries in part because of the small fragmented farms.

Farmers sell their produce to local traders then to a local wholesaler, who in turn, sells it to a bigger wholesaler operating in a provincial trading center. The commodity would eventually find its way to the wholesaler-retailer within and outside the municipality and to local retailers. Traders and input suppliers also provide advances in cash and in kind (e.g., fertilizers). Farmers, by tradition and obligation, sell their produce to the latter.

The agricultural commodities produced in the provinces are relatively diverse. They include rice, corn, coconut, cassava, banana and other

fruits, rubber, oil palm, seaweeds, and fish and fish products.

Rice

As stated earlier, the CAA provinces produce 70% of Mindanao production or 17% of the national production. Most of the rice is consumed in Mindanao, although there are some seasonal exports to the Visayas. For most areas, rice is consumed primarily within the municipalities. Big surplus provinces are North Cotabato, Sultan Kudarat, Zamboanga del Sur, South Cotabato, and Maguindanao.

Corn

Yellow corn is abundant. The CAA provinces account for 73% of Mindanao production or 45% of national production. The trading system is similar to rice. However, big companies (e.g., San Miguel Foods) have established buying stations in key production areas. Farmers groups have also learned to truck their produce to trading centers such as the cities of Malaybalay and Cagayan de Oro. In fact, corn from Wao (Lanao del Sur), Banisilan and Alamada (North Cotabato) find their way to Manila via Cagayan de Oro traders. Because of limited post-harvest facilities and the immediate need for cash to pay debts, small rice and corn farmers sell their produce to traders even at lower prices.

Coconut

The CAA provinces account for 55% of Mindanao production or 31% of national production. Usually, coconut is processed into copra before it is sold. The buyers include local assemblers/wholesalers who, in turn, sell to other wholesalers for further sale to local processors. Local processing facilities, however, are all located outside the CAAs. There are large crushing plants in the cities of Iligan, Cagayan de Oro, Davao, Zamboanga, and General Santos.

Banana

Banana has three main types: Cavendish, Lakatan and Cardava. Cavendish is big business with a large market demand. With the success of the Cavendish banana projects in Davao, foreign and local investors have established two plantations in Maguindanao (Datu Paglas and Buluan). Lakatan, also a table fruit, is produced in commercial quantities in Sultan Kudarat and North Cotabato. Cardava is converted into chips and there are at least 20 plants operating in Mindanao, with primary (first fry) operations in/near the CAAs.

Cassava

Cassava is grown in three ways — monocrop, coconut intercrop, and corn-sequential crop. Its primary end-users in the region are those who use it as their staple crop. However, there is a market for cassava as an industrial crop. There are local cassava starch processors like Matling Agro-Industrial Corporation in Lanao del Sur and Lam San Trading in Maguindanao. San Miguel, a bigger player, buys cassava chips from contract growers or cooperatives for feeds and alcohol plants. Specific standards for dried cassava chips, however, have to be followed strictly.

Other Fruits

Fruits are also abundant in the area, of which mango, durian, and marang are dominant. There is a mango puree plant in Davao City, while Dole has a vapor heat treatment (VHT) plant for mango and papaya exports to Japan in Davao del Norte. Durian and marang are sold mostly in the local markets. However, in most areas, fruit trees are not cultivated under orchard management. Other fruits produced in the area are lanzones, jackfruit, avocado, and mangosteen.

Tree Crops

Commercials crops of importance are oil palm, rubber, and coffee. Oil palm is planted in Sultan Kudarat and is newly planted in North Cotabato and Maguindanao. In Basilan, Zamboanga and North Cotabato rubber is a prime product. Coffee is grown in Sultan Kudarat, North Cotabato, and other areas in Mindanao.

Fishery

This is a dominant resource in the region. The fishing grounds are vast, varied, and generally productive. These are highly capable of serving both commercial and municipal fishing. However, reports of over-fishing and illegal fishing in municipal waters abound. There are six tuna

canneries in General Santos City and two in Zamboanga City. Most of the fishing fleets ply the Southwest Pacific and the waters near Indonesia.

Seaweed

Most of the country's seaweeds are produced in Mindanao particularly in Tawi-Tawi. Seaweed is an important aquaculture commodity in some CAAs. The *Eucheuma cottonii* is the major variety cultivated and is produced on a commercial scale especially in Kauswagan, Lanao del Norte and around the Moro Gulf.

Lack of capital, poor access to improved farm inputs, and weak extension services are among the major causes of the "low input-low output" regime in most of the CAAs. However, modern technologies are not wanting in the other areas of Mindanao. There are tissue culture labs producing banana planting materials, hybrid corn companies, and modern plantations.

Constraints

The marketing problems of farmers in the CAAs are quite similar to those in other areas of the country – the low rice or corn prices offered by buyers during peak harvest season. This entrenched system will take time to resolve given the following factors:

- The long "symbiotic" relationships between the farmers and the traders and/or input suppliers. (The latter not only provide loans and advances for farm inputs but also for family needs.)
- Lack of competition due to poor access to credit, markets, and infrastructure
- Unsecured ownership of lands and/or agrarian reform which lost its collateral value
- Lack of organized farmers groups
- Poor supply chain management in part due to unorganized producers and poor logistics

Despite the richness of the fishery resources in the coastal areas of CAAs, there are issues and constraints that inhibit fishery development. These include coastal or fishery resource management practices; production, institutional, financial, and technical capability; biophysical condition of natural resources; socio-economic condition of communities; illegal fishing; siltation; and political factors. Issues on the management and utilization of the fishing grounds often stem from boundary conflicts between commercial and municipal fishing.

Another constraint is the delivery of credit for production, processing, and marketing activities. The formal credit institutions serving the CAAs are limited and most of these are located in the capital. It would be very difficult for farmers in the remote areas to access these institutions. There are many municipalities with no banks; farmers rely on traders for production financing. In some areas, road robbery or hold-ups occur especially during harvest season when farmers and traders sell their produce to trading centers and return with cash.

Needs and Potentials

Among the most impoverished communities in the nation are those located in the CAAs. There is no need to re-emphasize the numbers as World Bank and other studies confirm this fact. High rural poverty is a result of many factors, among them, low farm productivity, and poor access to markets and resources. There has to be package of interventions that will address farm productivity, diversification, and value adding as well as institution-building.

The potential of the CAAs to become an agricultural-based powerhouse is tremendous. The land has good soil and a favorable, typhoon-free climate (unlike most of the Philippines). Its people can be tapped as farmers, growers and workers. However, certain challenges have to be overcome in order to encourage more private investments into the region.

Among the key findings of the JNA field visits are the following:

 The CAAs have high agribusiness potential. Mindanao is host to many world-class

- agribusiness and aqua-business ventures. Still, there is high poverty and high unemployment.
- 2) There are ready markets/processors for agricultural products such as corn, sugarcane, banana, oil palm, rubber, and timber trees. Producers in these areas, however, cannot respond to demand. The spirit of entrepreneurship is wanting and market resources are limited.
- The agriculture base has uncompetitive supply chains due to poor input supply, traditional farm practices, and high logistics costs.
- Land access issues and unclear property rights limit private investments. Poor governance and law and order problems exacerbate the problem.

Producer-based organizations and other institutions are underdeveloped in the CAAs. This leads to poor economies of scale/scope and countervailing power of producers. Moreover, there are few business support organizations one can speak of, such as a chamber of commerce, in contrast to more advanced cities and towns of Mindanao.

Rationale and Strategy

The major rationale for agribusiness development in the CAAs is to ride on the existing higher value commodity supply chains in the region. Many of these chains are attaining competitive levels on cost, quality, and reliability attributes. There is no need to reinvent the wheel, so to speak. Established corporations and producer organizations have found the markets and tested the technologies. Some have explored financing modalities.

Among the competitive seed-to-shelf supply chains include:

- Cavendish banana. This is exported to most of Asia and the Middle East.
- *Pineapple.* Fresh produce are sent to Japan and processed products to global markets.
- *Banana chips*. These are exported to many countries worldwide.

- Palm oil. Crude palm oil is shipped to Manila for processing and blending.
- Canned tuna. This is shipped to EU, USA, and other countries.

Many lessons can be learned from these existing seed-to-shelf supply chains, and contract-growing arrangements should be explored with their established companies. For other commodities, there are already marketing systems in place.

Consider that for corn, the demand will increase as livestock and poultry products (income-elastic) increase in market demand. Sugar demand is also expected to grow in Mindanao while for cassava there are already local processors for starch and buying stations of a large company for cassava chips. Timber trees have established processors located near the CAAs.

The principal goals in terms of agribusiness and marketing are to increase productivity, promote crop diversification, and enhance value adding. These strategies are anchored on market-driven development and the private sector will be at the forefront in marketing and technology. It is expected that as jobs are created and farm incomes improve, this means that development has started to filter down to the masses. Other supporting factors include the presence of organized producers associations, cooperatives, and government's determination to create a peaceful, investment-friendly environment.

PROPOSALS

Key Recommendations

Short Term

- Organize selected communities to produce more marketable products. The agriculture experts must address seed supply, farm inputs, and farm practices via improved extension and/or contract-growing.
- Identify "development catalyzers" that will link up farmers with agribusiness firms for contractgrowing arrangements. Capacity building is a critical component.

Identify LGUs where good governance, and law and order can be enhanced.

Medium Term

- Address supply chain inefficiencies to ensure steady supply of good seeds, improved farm operations, lower cost of logistics (i.e., farm-tomarket roads), and producer organizations.
- Promote contract-growing schemes to address market and technical constraints.
- Address unclear property rights in pilot areas with good agribusiness prospects.
- Strategic imperatives for a Big Push for MILFinfluenced areas to attain sustainable jobs and incomes.

Short Term Programs/Projects (One to Two Years)

There are five commodities covered: corn, rice, cassava, banana, and seaweeds.

- Corn centrals Two corn centrals are possible in the CAA sites to serve about 500 ha of corn land each.
- Compact rice mill A total of 30 sub-projects are possible in rice-based CAAs. As additional criteria, the farmers must express willingness to plant only three varieties of rice and the area must be irrigated with an established farmers association.
- Cassava area expansion CAA residents must be near the starch mills (one in Malabang, Lanao del Sur) or near Cotabato City. If there are San Miguel buying stations, this offers another option. About 500 ha is possible for initial development.
- Banana (cardava) production The primary goal is to organize farmers in CAAs in order to produce cardava banana for factories producing chips with cost, quality, and reliability standards.
- Seaweeds production Coastal CAAs will benefit.

Medium-Term Programs/Projects (Two to Six Years)

The medium projects comprise three commodity groups: sugarcane, oil palm and timber trees.

- Sugarcane area expansion Must be located either in Maguindanao or in North Cotabato due to their nearness to the sugar mill in Matalam town. The consolidated area of farmers must be at least 50 ha to allow mechanized farming and deep plowing.
- Oil palm contract-growing There are already growers for a palm oil company in North Cotabato (11 municipalities), Maguindanao (four), Sultan Kudarat (eight), and South Cotabato (four). The total area to date is about 2,500 ha. There is a mill in Tacurong, Sultan Kudarat that is being eyed for modernization.
- Timber tree plantings There is a wood processing plant in Makilila, North Cotabato (RNF Summit Woodworks) which turns some 30,000 board feet of farmed trees into wood pallets, doors, jambs, windows, and mouldings every day. The wood pallets are sold to banana multi-nationals and local firms. Today, RNF produces 1,000 pallets a day from the Gmelina species. Tree planting is profitable but it takes six to seven years to harvest.

Other Fruits – Pineapple contract growing can be explored. A large company in South Cotabato now sources about 50% of its pineapple supply from 800 growers. There are CAAs in Maguindanao, Sultan Kudarat, South Cotabato and North Cotabato that will have to be organized in order to attain logistics economies.

The Big Push Program

This program will entail a lot of groundwork and planning. There is a possibility to involve some 10,000 ha for oil palm development along centralized management similar to the FELDA and FELCRA schemes in Malaysia.

Over a four-year period, a nursery will be developed and a year later, plantings of about 3,000 ha every year. Some 5,000 families in MILF-influenced CAAs will benefit. The Big Push will enhance visibility, benefit many families and have dramatic multiplier effects. Islamic bank financing must be explored.

Table 13 CAAs Beneficiaries Per Project and Estimated Cost for 19 Sample JNA Sites					
Project Name	No./Ha.	Target Beneficiaries (No. of families)	Total Cost (USD)	Cost/family (USD)	
Immediate to Short Term					
Community Level Corn Central Program	2 centrals	1,000	411,780	412	
Rice Mill Program	30 rice mills	7,500	1,001,880	134	
Cassava Area Expansion	500 ha	500	489,500	979	
Promoting Fruit Production (Cardava only)	1,200 ha	1,200	924,600	771	
Seaweed Area Expansion	2,000 rafts	1,000	393,030	393	
Total		11,200	3,220,790	2,688	
Short Term to Medium Term					
Sugarcane Area Expansion	1,100 ha	1,000	1,084,995	1,085	
Growership Program (Oil Palm)	1,000 ha	1,000	1,001,815	1,002	
Promoting Tree Plantations (Timber Species and Rubber)	500 ha	500	422,465	845	
Total		2,500	2,509,275	2,932	
The Big Push Program	10,000 ha	5,000	12,681,900	2,536	
Grand Total		18,700	18,411,965	985	

Table 14	Estimated Cost and Phasing of Short Term/Medion 19 Sample JNA Sites	um Term Programs	
Project Nam	e	Total (US\$'000)	
Short Term Community Level Corn Central Program Rice Mill Program Cassava Area Expansion			
Promoting Fruit Production (Cardava only) Seaweed Area Expansion Total		925 393 3,221	
•		1,085 1,002 422	
Total		2,509	
The Big Push Program		12,682	
Grand Total		18,412	

Project Area Selection Criteria

Considering scarce resources, project areas will be subjected to stringent selection criteria that include:

- Number of beneficiaries
- Cost per beneficiary
- Incremental income per beneficiary
- Willingness of beneficiary to share costs
- Commitment by the community
- Commitments from the local government

Estimated Costs

Indicative cost for the sample activities under this sub-sector is estimated to be USD18 million for 19 sample municipalities and USD54 million for all CAA municipalities.

Expected Benefits

Financial Benefits

The agribusiness-related programs are expected to increase farm incomes by diversifying agriculture production and enhancing value added enterprise.

More jobs will be created that will reduce seasonal underemployment and unemployment.

Economic Benefits

Economic benefits encompass foreign exchange earnings or savings, value adding, and multiplier effects on other industries. The programs will also enhance value adding for primary/raw products such as banana, timber, and fruits. Other benefits include:

- Better milling recoveries for rice mills
- Better corn price because of better quality
- Conversion of banana to banana chips will entail a process using coconut oil and sugar
- More wood products from planted timber including pallets, moldings, jambs, and doors for export

Higher production of cardava banana will increase raw material supply for banana chip factories that are export-oriented. Expanded output of other fruits will increase supply for fresh and processed exports. On the other hand, higher production of palm oil and timber trees will save foreign exchange by reducing imports. With respect to palm oil, the current demand is about 110,000 to 120,000 tons, of which less than 60,000 tons are sourced locally. The country imports about half of its log supply and private tree plantings can help reduce the gap.

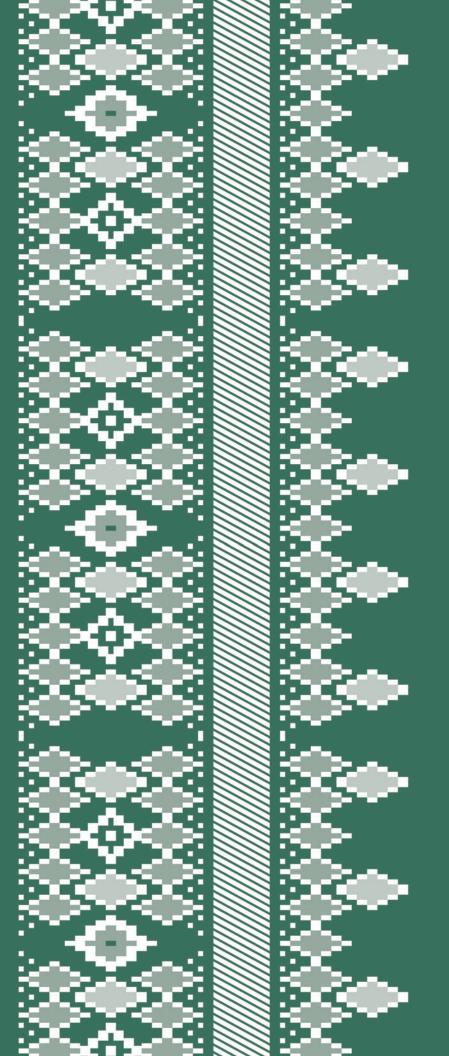
Social Benefits

The main social benefits will be job creation. Additional non-farm and off-farm jobs will help increase family incomes, reduce malnutrition, and promote law and order.

ISSUES AND RISKS

The outstanding issues in the CAAs that affect agribusiness investment include:

- Land access and unsecured property rights. (Investors are wary of entering areas with conflicting or unsecured land ownership.)
- No law, no order" scenarios which put life, money, and property at risk
- Weak institutions (unorganized farmers, lack of NGOs, poor governance by LGUs)
- Capacity building is imperative
- Poor access infrastructure due in part to lack of resources and fund leakages
- Lack of transparent and accountable governance





Rural Infrastructure



Rural Infrastructure

Addressing the acute need for rural infrastructure in the CAAs of Mindanao will provide immediate and visible opportunities for building peace, as well as pave the way for much-needed development to take place. Previous surveys and studies undertaken in the area have consistently shown appallingly low levels of access to basic services in health, education, water and sanitation, transport infrastructure, as well as the overall lack of income and employment opportunities.

In a 1996 survey by UNDP, a majority of those surveyed in various areas of Mindanao were found to have inadequate or no sanitation facilities and lack access to safe drinking water. Only 38% of households surveyed were found to have access to potable water systems. Roughly only 6% of those households surveyed in five provinces were found to have sanitary toilets.

A more recent 2003 JICA study examined various infrastructure needs (i.e., the slow development of the road networks, missing vital links, substandard equipment support, poor road construction and design method, accelerated deterioration due to inadequate drainage, insufficient budget for development works, poor coordination of road/transport project implementation and unclear delineation of responsibility for these types of works).

The focus of the assessment includes such infrastructure as access facilities, such as connecting feeder roads, small access roads, critical bridges and small port facilities; potable water supply systems; construction of core shelters for IDPs; school buildings and madaris; power supply and telecommunication facilities; and development of large-scale irrigation facilities. Small-scale irrigation schemes are discussed in the Agriculture sub-sector.

Access Infrastructure

All urban centers (poblacion) of the 150 municipalities with identified CAAs are accessible

by land transportation either by way of the national or provincial road network, except for the island municipalities, which can be reached only by motorized sea craft.

Although this is the case for the urban centers, the interim report of the JNA-Phase I on the Infrastructure Component revealed that one of the most important expressed needs of these municipalities as confirmed during the stakeholders' consultation is access infrastructure. This is either in terms of barangay accessibility (barangay roads) from the municipal centers or farm-to-market roads and connecting bridges in the remote production areas.

The conduct of actual field visits to the identified sample sites confirmed this need at both the municipal government and barangay/ community levels. Out of the 275 component barangays of the 12 municipalities visited, about 145 barangays representing 53% are not accessible from the municipal centers to date.

The identified 150 municipalities with CAAs are distributed in 14 provinces composed of 231 component municipalities in five regions of Mindanao. These represent a substantial 65% of the total number of municipalities in these 14 provinces. An attempt to disaggregate the data of the municipalities with CAAs was done but most data from the provincial level were not presented by municipality. Hence, some tables are presented on a province-wide basis.

The 12 provinces (excluding Zamboanga del Norte and Sarangani provinces, which have no data available) have a total land area of 47,839.21 square kilometers (km²) with a total barangay and farm-to-market road (local) network of about 20,322.61 km. Of this length, only an insignificant portion is paved and most of the remaining unpaved roads are not even passable in all weather condition. Local road density averages at 0.43 km per sq km of land area. This figure is comparable to that of the Mindanao and national averages at 0.44 and 0.41 km per square km of land area, respectively.

While this figure looks fine when viewed in totality, individual provinces register big disparities in terms of local road density. Table 15 shows that the provinces with lower road density than the

Mindanao and national averages (e.g., Lanao Norte, Davao Oriental, Compostela Valley, Sultan Kudarat, Maguindanao and Basilan) would require new road construction while the rest of the other provinces have to concentrate on rehabilitation or reconstruction of their dilapidated local road systems.

Although Zamboanga del Norte and Sarangani provinces have no provincial record on existing local roads, it was claimed that majority of its barangay roads are passable but a few are impassable during rainy season. As mentioned earlier, the poor state of access infrastructure in Mindanao had been existing even before the conflict occurred. The table above presents a province-wide scenario, though it should be noted that the situation in municipalities with CAAs is even worse.

Table 15 Existing	g Barangay and	d Farm-to-	-Market (loca	ıl) Roads in Pr	ovinces v	vith CAAs
		Overall Provincial Data				
Province	Municipalities (no.)	Land Area (kms²)	Brgy Rds/FMR (kms)	Density (kms/km²)	Paved (kms)	Paved Ratio (%)
Region IX	•		•		•	
1. Zamboanga del Norte	27	7,205.94				
2. Zamboanga del Sur	27	4,734.91	2,580.14	0.55	n.d.a.	
3. Zamboanga Sibugay	16	3,228.30	1,313.71	0.41	0	0
Region X						
4. Lanao del Norte	22	3,096.60	902.83	0.29	n.d.a.	
Region XI						
5. Davao Oriental	11	5,164.46	889.62	0.17	n.d.a.	
6. Compostela Valley	11	4,666.93	1,178.83	0.25	9.94	0.84
Region XII						
7. Sultan Kudarat	12	4,828.09	1,488.69	0.31	30.36	2.04
8. North Cotabato	18	6,565.90	3,910.93	0.59	29.88	0.76
9. South Cotabato	11	3,705.90	2,431.08	0.66		
10. Sarangani	7	3,957.54				
ARMM						
11. Lanao del Sur	39	3,872.89	3,709.44	0.96	16.00	0.43
12. Maguindanao	26	5,047.60	1,050.00	0.21	35.00	3.33
13. Basilan	7	1,327.23	212.34	0.16	10.44	4.92
14. Sulu	17	1,600.40	655.00	0.41	18.00	2.75
Total	231	59,002.69	20,322.61	0.43*		
Mindanao		102,630	44,891.00	0.44		
Philippines		300,000	121,965.00	0.41		

^{*}excluding Zamboanga del Norte and Sarangani provinces

[&]quot;--" = no data available

Source: Provincial SEPs, DPWH and DAR ARMM Documents

The inventory and status of local bridges in the municipalities along barangay and farm-to-market roads is not available as only bridges along national highways and provincial roads are covered by available provincial profiles and documents. Hence, there is a need to identify and conduct inventory of these facilities on a per municipality basis to determine the actual needs to be addressed.

Irrigation

Irrigation development is under the mandate of the NIA. These are classified as national schemes (large-scale) if the area is above 1,000 ha and communal (small-scale) for those with areas of 1,000 ha and below. The national schemes are operated and maintained by NIA while communal schemes are through the farmers organized as Irrigators' Service Associations (ISA). While communal (small-scale) schemes will be discussed under the Agriculture subsector, these are initially included under this sub-section to illustrate the current irrigation development rates of the respective provinces with identified CAAs.

The Local Government Code of 1991 devolved the communal irrigation development to the LGUs. This adversely affected the development of communal schemes nationwide, as the LGUs were not capable of undertaking the development works due to funding constraints and lack of technical capability.

The potential irrigable area of the 12 provinces (provinces of Davao Oriental and Compostela Valley were excluded as only one municipality from each were identified with CAA and their data would not substantially contribute to the overall rate of irrigation development in the areas covered) is recorded at 471,513 ha. Of this, only 184,201 ha have been developed to date with an overall development rate of 39.07%.

Although the existing service areas in municipalities with CAAs can be disaggregated, NIA data on the potential irrigable area is lumped on a province-wide basis. Table 16 shows the distribution of these areas by province for the

national and communal schemes as well as those privately owned and areas irrigated by pumps.

From the data above, more than half of the combined total potential irrigable areas in these provinces are still in need of development assistance. In addition, of the 12 provinces, Lanao del Sur has the least developed irrigable area at 8.88% while Maguindanao has the highest potential at 146,365 ha (but with only 15.17% development rate) among the rest. On top of this, all municipalities of these two provinces are with CAAs, and rank first and second in terms of number of municipalities affected, providing an idea of the development strategy to be adopted.

Of the total number of households residing in the sample municipalities visited, an average of 47% have access to potable water, and 35% had sanitary toilet facilities. In terms of the number of barangays, only 101 or 36.73% of the total component barangays of the 12 municipalities have existing potable water supply systems. This even includes those that fall under Level I category or point sources such as pitcher pumps or artesian wells.

The disparity between the more developed municipalities such as M'lang (1st class) and Ipil (2nd class) with the less developed ones (those falling in the 5th and 6th class categories such as South Upi, Matanog and Butig) is markedly wide. In access to potable water for instance, while M'lang and Ipil recorded 93% and 60% respectively, South Upi, Matanog and Butig only attained 6% to 10% of their total households. Similarly, in access to sanitary facilities, M'lang and Ipil registered 70% and 45% respectively, while South Upi, Matanog and Butig only attained between 5% to 8%.

On solid waste disposal, all of these municipalities have yet to develop their identified landfill sites. Some have acquired land for the purpose, which passed the DENR criteria while others are still in the process of acquiring these sites. Current solid waste disposal of these municipalities still make use of open garbage pits.

Power

About 140 barangays or 51% of the total 275 in the sample municipalities have electricity to date. From these energized barangays, the difference in the cases between the lower and higher-class municipalities is evident. South Upi, Matanog and Butig have less than 6% of their households enjoying the convenience of electricity, while M'lang and Ipil have 28% and 29%, respectively. Factors that contribute to such low access to electricity in the CAAs are: (i) remoteness from existing major transmission lines; (ii) user's charges collection problems among existing connections; and (iii) lack of financial capacity among potential users.

Among the critical areas where the lack of access to power was raised, three cases stand out which seem to represent the predicaments that communities in CAAs are facing.

First is that of Palimbang, Sultan Kudarat. On record, Palimbang is already energized. However, it is only through an existing 54.4 kw diesel-powered generator owned by NPC providing only four to five hours of electricity daily to only three out of the 40 barangays within the municipality. Due to its remoteness and according to the Sultan Kudarat Electric Cooperative (SUKELCO), there are two options to fully energize Palimbang.

One is the installation of 69 kv transmission lines to connect with South Cotabato Electric Cooperative (SOCOTECO) substation in Kiamba estimated to cost PhP 60 million. Another is the installation of 69 kv transmission line via Tacurong-Kalamansig in the province of Sultan Kudarat estimated to

Table 16 Potential Irrigable Area and Development Rate in Provinces with CAAs									
			Existing Number and Service Area (ha)						
Province		ential	NI	NIS		CIS		Total	Dev't.
		gable a (ha)	no.	area	no.	area	Private area	area	Rate (%)
Region IX									
Zamboanga de	l Norte 1	3,809	none	none	49	5,962	349	6,311	45.70
Zamboanga de	l Sur		3	12,019	36	4,949	5,101	22,069	
Zamboanga Sib	J ,	2,913							60.91
Zamboanga Cit	у		1	3,143	45	6,334	683	10,160	
Region X									
Lanao del Norto	e 2'	9,255	1	4,927	32	5,305	1,683	11,915	40.73
Region XI				Only the CAA	of Tarragona h	as no potential	irrigable area		
Davao Oriental		Only the CAA of Pantukan has about 800 ha of potential irrigable area							
•	Compostela Valley		•,			ас осо па стро			
Region XII									
Sultan Kudarat	_	1,802	3	20,484	32	8,082	3,700	32,266	52.21
North Cotabato		1,777	5	27,766	43	6,139	7,352	41,257	50.45
South Cotabato		3,612	4	19,645	20	4,624	2,645	26,914	80.07
Sarangani		8,049	2	1,772	27	4,653	0	6,425	79.82
ARMM									
Lanao del Sur		0,186	1	2,500	5	1,035	35	3,570	8.88
Maguindanao		6,365	5	15,843	32	5,228	1,130	22,201	15.17
Basilan		1,035	none	none	6	319	42	361	34.88
Sulu		2,710	none	none	8	666	86	752	27.75
Total*	471	,513	25	108,099	335	53,296	22,806	184,201	39.07

^{*}Total does not include provinces of Davao Oriental and Compostela Valley (Dev't Rate: Development Rate) Source: Latest NIA-RIO and PIO data

cost PhP 240 million where Palimbang may later be connected. SUKELCO is currently under negotiations with the NEA and the DOE to pave the way for the latter.

Under certain provisions of the Electric Power Industry Reform Act of 2001 (EPIRA), cost of installing 69 kv transmission lines in Mindanao shall now be borne by electric cooperatives, while those of 138 kv and above shall remain within the responsibility of the TransCo. SUKELCO admits it does not have the financial capacity to carry out the second option.

The second case is that of Matanog, Maguindanao. Power lines were installed as part of an assistance package after the all-out war in 2000. However, the entire municipality has remained un-energized since the local power service provider (Maguindanao Electric Cooperative-MAGELCO) refuses to connect due to unsettled accounts. The previous municipal association of electric bill collectors reportedly did not remit collected payment for power usage during the period 1994-95 amounting to PhP 600,000 and the current LGU administration is not keen on the settlement of such back account.

The third case is that of Madalum, Lanao del Sur. The municipality is close to the largest source of hydroelectric power supplying the Mindanao Grid. However, only 10 of its total 37 barangays are energized. Moreover, majority of households in the 10 barangays along the highway that may be served by existing lines are also not connected, since it was reported that most are not willing or cannot afford to pay the initial connection fees.

Fifteen electric cooperatives operate among the 150 municipalities with CAAs distributed in the five regions in Mindanao. The status of energization as of end-2003, on the average, was about 70%. The mean proportion of energized barangay is about 71% for the CAA areas and the ratio of total connections is only about 50%.

Based on the findings during the field visits, it may be further noted that CAAs among the municipalities covered by the existing electric cooperatives are either the ones that remained unenergized or have the lowest connection rates when compared with the rest of Mindanao, or worse when compared with the rest of the country.

Communications

Nine of the 12 municipalities visited during the assessment are now being served by either one or two major cellular mobile telephone companies. Three of these municipalities (M'lang, Kauswagan and Ipil) are also linked with fixed telephone lines. Three (Palimbang, Madalum, and Butig) remain without either mobile or fixed telephone connections. Communication for these three municipalities is limited to VHF radio, telegraph facilities operated by the LGU, and by mail or courier.

None of the municipalities visited have access to the Internet. M'lang has a fixed line cable television service provider while some households in a few other urban areas of higher-class municipalities have home based satellite link to cable television. Radio on AM frequency continues to be the most popular means of accessing news.

Telecommunications data as of end-2002 provided by the National Telecommunications Commission (NTC) show that on a regional basis, in the distribution of telephone lines, ARMM and Region XII (SOCCSKSARGEN) are among the three regions with the lowest installed capacity (the other being Region II). While the national average teledensity for installed capacity is 87 per 1,000, ARMM and Region XII registered only 18 per 1,000 and 30 per 1,000, respectively.

Region IX and ARMM also recorded the lowest rates in terms of subscription with nine per 1,000 and 4 per 1,000 respectively, when compared to the national average of 42 per 1,000 subscribed teledensity.

In terms of the regional distribution of broadcast stations (AM, FM, TV, TV relay), the CAAs also registered some of the lowest in the country. As of December 31, 2002, ARMM in particular only

had eight AM stations, five FM, five TV and 24 CATV – for a total of 42 stations and networks, or by comparison lower than the 68 in the Cordillera Autonomous Region (CAR) in Luzon.

Both regions rank at the bottom of the list where the national average is 176 stations and networks per region. Region XII is only slightly better than ARMM in this respect, with 73 stations and networks, while Regions IX, X, and XI are within range of the national average, with 140, 189 and 193, respectively.

Housing for IDPs

Internal mass displacement of residents brought about by a series of armed conflict in majority of the towns visited is common. This is particularly true in the towns inhabited by Muslims and ethnic groups in the provinces of Sultan Kudarat, North Cotabato, Maguindanao, Lanao del Sur and Lanao del Norte.

Conflicts in these areas are often due to armed confrontation between government forces and rebel groups, family feud (*rido*) and simple criminal acts like cattle rustling. This internal displacement has compounded the problems of the local government concerned. Some LGUs had become unwilling hosts to these IDPs as they witness their already scarce and limited resources drained. On the other hand, other LGUs experienced a sudden reduction in their population. IDPs in most areas live either in informal resettlement areas, with relatives or in government buildings. Most of them live in squalid conditions with no basic amenities.

Several government line agencies and NGOs have introduced core-shelter housing projects to these IDPs. Among these line agencies and NGOs are the DSWD (both National and ARMM), Tabang Mindanao, I Sincerely Love All Muslims (ISLAM), and several others.

It is notable, however, that some of these coreshelter housing projects in other areas or towns are uninhabited. Some beneficiaries refused to resettle in these structures due to various reasons. One reason is that some core shelters were built far away from their original places of residence and therefore away from their sources of livelihood. In addition, some were built near military detachments which they consider as security risks to them.

Residents in areas visited expressed the common view that they do not know, as of the moment, if the government has programmed projects to address the housing needs of the IDPs. If ever the government or NGOs wish to address this need, the affected residents are one in saying that they should be consulted first in determining the best location for the housing projects.

School Buildings

Inadequacy and lack of school building in areas visited are very common. In areas where there are school buildings, most of them are up to primary level only. However, most of these structures either need immediate repair to make them conducive to learning or need additional classrooms to address the perennial issue on multi-grade accommodation in a single classroom.

In most cases, classrooms are without decent furniture such as desks, chairs and even blackboards. Most barangays, especially those in far-flung areas, do not have school buildings at all. Students from far-flung sitios have to travel by foot along mountainous trails just to reach the nearest schools, which are commonly located in barangay centers or poblacion.

In some cases, school buildings in CAAs are abandoned, burned or occupied by IDPs. Those abandoned can be rehabilitated and made operational while those burned during the conflict need to be re-constructed. Based on DepEd's Basic Education Information System's (BEIS) recent count, there is an estimated need for 4,408 additional classrooms (combined elementary and secondary schools) in the identified conflict affected municipalities.

As of end August 2004, the total enrolment for all CAAs is 419,340 (combined ES and SS), with only 5,054 existing classrooms or an average of

83 students per classroom which is way above the desired 45:1 student-classroom ratio.

Health Centers

In general, aside from the lack of health centers to serve communities in far-flung barangays and sitios, the insufficient delivery of health services is compounded by the lack of medicines and the absence of qualified health workers in barangays where there is a health center. The problem can be attributed to the lack of capability of the LGU concerned to operate and run such a basic facility.

There are few health centers in the barangays covered by the JNA. About 190 (69.10%) of the 275 barangays in the 12 municipalities have no barangay health stations (BHS). Consequently, high mortality and low life expectancy rates are observed in these areas.

NEEDS AND POTENTIALS

Expressed Needs and Identified Priorities (Based on Field Consultations)

Although the field visits were intended to cover 12 municipalities inclusive of one barangay each, actual consultations were attended by representatives from 18 municipalities and a total of 51 barangays. Representatives from the six additional municipalities were from the province of Zamboanga Sibugay while those from additional barangays were from the municipalities of Palimbang, South Upi, M'lang, Kapatagan, Madalum and the province of Zamboanga Sibugay. Even if this was not foreseen, it worked to the advantage of the sub-sector team as more barangays consulted yielded better and more reliable results.

It is worth mentioning that the conduct of consultations went smoothly with almost all of the members of the community (men and women alike) actively participating and articulating their problems and basic needs in their respective barangays. The municipal LGU officials were likewise open with their ideas in providing inputs to the team and in putting forward the current issues and concerns that beset their respective municipalities.

The results of the consultations would reveal that access infrastructure was accorded the highest priority by both the LGU and community while potable water supply ranked second. This is followed by health and education facilities with power needs ranking fifth. Requirements in irrigation was a poor sixth and this could be attributed to the fact that only two municipalities out of the 12 sample sites have a substantial irrigation potential for development.

It should be noted that even if separate consultations were done for the LGU officials and the communities, the expressed priorities of both significantly coincided in terms of ranking. This would confirm the almost common pattern of the results in various surveys and assessments conducted in rural areas by different institutions.

Under access infrastructure, rehabilitation and/ or construction of barangay access roads ranked first, followed by farm-to-market roads linking production areas to barangay centers with some provincial roads and bridges included. The prevalence of existing rural roads in such severe conditions reflect more of overall neglect, lack of maintenance and poor design particularly in providing for adequate drainage, rather than damage brought about by the armed conflict. It should also be noted that maintenance under such unsafe circumstances if ever, would have been rarely undertaken or suffer from low funding allocation by concerned units and agencies.

Demand for the provision of safe and reliable domestic water supply systems would range from upgrading of existing ones with insufficient supply to development of new ones with potential spring sources. However, there are areas without spring sources where a deep well scheme has to be provided. Where water supply systems (i.e., individual or shared piped systems, developed springs or deep wells) are lacking, residents resort to unprotected shallow dug wells, or fetching water from creeks or springs, which may be a kilometer or more away. In some cases, drinking water is bought by the container from the poblacion or from peddlers.

Third and fourth in the list of prioritized projects are those that fall under the social infrastructure category, school buildings and BHS. Requests for school buildings include construction of new classrooms, repair of existing ones, including the rehabilitation or restoration of several that were damaged partially or totally during the war. The team visited the school buildings damaged by war in the municipalities of Matanog, Butig, Baloi, and Kauswagan. Construction of a municipal hospital was a top priority by both the LGU and the community in Palimbang, Sultan Kudarat. In most cases, the request for BHS was accompanied by the LGU's assurance of its funding support for health workers.

The people also articulated the need for the repair or restoration of war-damaged mosques and madaris. While previous work had been done on an undetermined number of damaged mosques and madaris, the assessment revealed that several more had been left in varying degrees of disrepair. The team visited damaged mosques and madaris in Kapatagan, Butig, and Baloi. Other immediate concerns expressed by the communities are multipurpose centers, latrines, and some housing needs in Baloi and Kauswagan.

Rural Infrastructure Potentials for Short to Medium Term

Although the need for power, large-scale irrigation schemes, municipal hospital and other concerns were expressed and prioritized during the consultations, these would involve huge funding requirements and long gestation periods. Hence, needs of these types would appropriately fall under the short to medium term and in some cases, long-term potentials.

In spite of the ongoing energization program of the national government, the need for electrification in some of the sample sites visited is still prevailing and ranked fifth in the list of priorities. Although all of the municipalities visited except Palimbang have been energized, the rural areas (i.e., barangays) are yet to be provided with distribution lines. The program of the government is apparently besieged by the absence of funding for the purpose especially that

these are now the main responsibility of electric cooperatives with the enactment of the EPIRA.

Irrigation only ranked sixth as there are only two municipalities visited that have a substantial large-scale irrigation potential for development. One is to fast-track implementation of the ongoing Malaig River Irrigation Project (MALRIP) in Butig, Lanao del Sur to serve an estimated potential area of 2,750 ha, which ranked high for both LGU and community. The other is the rehabilitation of Labangan River Irrigation System (LABRIS) in Labangan, Zamboanga del Sur to benefit the Muslim community (MUKRIS) at the downstream service area.

Other concerns expressed by the communities would include drainage facilities along the periphery of Liguasan marsh affecting the barangays of M'lang, the flooded national highway of Shariff Aguak and other municipalities (to be discussed extensively under the Agriculture Sub-sector) requirement in the municipalities of South Upi, M'lang and Ipil.

Rationale and Strategy

While Mindanao is endowed with rich land and marine resources, productivity has been relatively low because of undeveloped potentials, the use of traditional farming and fishing technology, and the uncertain peace and order condition.

Consequently, there is widespread poverty in the region due to lack of income and employment opportunities especially in CAAs. Being a predominantly agricultural economy, majority of its income and employment would be derived from the agriculture, fishery and forestry sectors. Hence, the development of Mindanao will focus on increasing agricultural and fishery productivity through enhanced technology and provision of much-needed inputs to lowland and upland farmers and fisherfolks.

Concomitant to increasing productivity is the opportunity to market surplus products as the main factor to increasing income. This would necessitate investments to support facilities such as access and farm-to-market roads to bring down the cost of

doing business in the agriculture sector. However, rural infrastructure would not only involve support facilities to agriculture and fishery.

The results of the field assessment reveal that even basic level of social infrastructure facilities are wanting in municipalities with CAAs. The Rural Infrastructure Sub-sector would therefore need to include potable water supply systems, health and education facilities as well as housing units to ensure decent existence for the poverty and war-stricken residents of the CAAs. This would also provide the necessary ingredient in developing a healthy human resource capable of helping themselves to gain self-respect on the road to improving their quality of life.

Given the facts and the status of municipalities with CAAs, it is imperative to focus assistance in addressing the need to develop the support facilities of its agriculture and fishery economy. While some municipalities would require new construction of barangay and farm-to-market roads, majority of these will need to rehabilitate or reconstruct dilapidated local road networks. Access infrastructure should be accorded highest priority particularly in highly populated barangays and those with substantial existing and potential production areas.

The provinces of Lanao del Sur and Maguindanao have the least developed potential irrigable area among the provinces of identified municipalities with CAAs. Developing large-scale irrigation schemes in these provinces would trigger the acceleration of the growth of its agriculture economy and ensure food sufficiency to the population of CAAs. There are several proposals identified by NIA in these two provinces that are the subject of its fund sourcing from different funding institutions with no guarantee to date.

In terms of human resource development, support facilities such as the provision of potable water supply systems shall be accorded highest priority through the development of spring potentials and exploring the feasibility of ground water sources for those without spring sources.

Next in line would be the provision of health stations to remote barangays, rehabilitation of war-damaged school buildings, construction of additional classrooms to address the perennial issue on multi-grade system and provision and replacement of dilapidated school furniture and blackboards.

An urgent intervention that will require immediate assistance from the government would be the provision of core shelters to IDPs in these areas. Those with farm lots will be accorded the highest priority in order to immediately resume their interrupted agricultural activities and make the current idle lands productive once again. This will of course have to be in tandem with the provision of agricultural inputs, draft animals and necessary farm implements.

The improvement of power supply at the barangay level has to be pursued by the several ongoing programs of the national government through the DOE and its allied agencies.

Proposed Delivery Mechanism

Delivery mechanisms and implementation mode shall be dependent on the capability of the LGU and the type of sub-projects to be implemented.

The LGUs in most municipalities with CAAs do not have the capability to implement development projects in their respective jurisdictions. Where the LGUs lack the capability, the following options are recommended: engagement of private entity/firm/NGO to administer project implementation; engagement of full-time individual consultant based at the LGU; provide capacity building training to LGU technical staff; involvement of PEOs and NIA for irrigation development; and involvement of municipal interest groups in project monitoring.

There are a few LGUs who can undertake their own development projects. The following schemes are recommended: implement sub-projects by LGU administration (forced account) or through private contractors with periodic supervision from oversight entity; provide capacity building training

to LGU technical staff; and involve municipal interest groups in project monitoring.

Community participation in development works had been proven to improve and increase the chances of ensuring the sustainability of the completed facilities.

In this respect, it is highly recommended that community-based implementation should be adopted whenever appropriate. The strategy would involve the following arrangements among others: implement sub-projects through community organizations with proper guidance and supervision; provide capacity building training to LGU technical staff and community organizations; and involve the BDA and municipal LGUs in project monitoring.

Monitoring and Evaluation (M&E) Strategy

The recommended strategy for M&E would involve the following initial activities: setting up of the M&E program immediately; establishment of baseline information on knowledge, attitudes and practices (e.g., related to water supply, sanitation and health status); adoption of a two-tiered approach to the performance monitoring system.

The first tier is the half dozen indicators for the entire project. The second tier is more detailed and is used by the implementing agency's staff and managers to monitor a wider and detailed range of inputs, outputs and activities. For many projects, a community-based monitoring program is the best approach. It should be participatory and beneficiaries need to understand the reason for monitoring.

Government agencies undertaking medium to large-scale infrastructure such as the DPWH for major access roads and connecting bridges; NIA for large irrigation schemes; NPC, DOE and Transco for power transmission lines; and the likes have existing M&E systems. Hence, these could be adopted and improved by the program. For community infrastructure types of subprojects, it is recommended that

two types of monitoring shall be developed: process monitoring and conventional progress monitoring.

Operation and Maintenance (O&M) Strategy

The sustainability of completed infrastructure facilities, especially farm-to-market roads is a perennial issue in programs and projects of this type as these are neglected inadvertently by the LGUs due to insufficiency of funds. Although this is common to LGUs nationwide, it is more pronounced in the CAAs.

This is aggravated by the fact that most of these roads if any, are not being used and left to further deteriorate with the occurrence of intermittent encounters between government troops and MILF. As majority of these LGUs are classified under the 5th to 6th class municipalities, the Internal Revenue Allocation are usually adequate only for payment of personal services (i.e., salaries and wages) with almost nothing left for development purposes.

In this regard, there is a need to ensure that appropriate units are identified and assigned responsibilities to operate and maintain the completed facilities for sustainability. This should be done even before proposed sub-projects are approved for funding.

Rural Infrastructure Selection Criteria

During the conduct of field visits and consultations in identified sample sites, both the municipal officials and communities identified three top priorities. However, several priority sub-projects are observed to either require huge funding support or need longer gestation period to prepare and implement. In addition, some are ongoing programs of the LGU through funding support from the national government or line agencies while others are proposed for funding under the Official Development Assistance (ODA) program.

In this regard, there is a need to develop criteria for qualification of identified priority sub-projects for implementation under the "Quick Win" and short to medium-term categories. The following are basic considerations for a sub-project to qualify as "Quick Win": those that have been accorded highest priority by the community with specific targets in visited sample sites; those that are implementable within six months from start of the program; those that could be completed in one to two year period; those that would need immediate assistance posing danger to life or properties; those that would benefit the majority of the community and with high impact and visibility; and those with clearly no funding support.

Rehabilitation or restoration of war-damaged facilities shall likewise qualify as "Quick Win" as long as these sub-projects meet the criteria above. All the rest of the identified priorities not meeting these basic considerations and without any funding support shall be programmed under the short to medium-term potentials.

PROPOSALS AND INDICATIVE COST

Immediate Needs ("Quick Win"- Years One to Two)

Based on the recommended selection criteria above, "Quick Win" proposals are recommended to be implemented in visited sample sites with identified specific priorities through community consultations. This would cover critical access infrastructure, provision of potable water supply systems, critical health and educational facilities, and core shelters for IDPs. This would require an estimated funding support of about USD 6 million.

It should be noted that these sub-projects are those that were identified and prioritized by the communities in the 12 barangays of 12 municipalities visited by the sub-sector team and those that meet the recommended selection criteria above. This is also inclusive of the additional six municipalities and 39 barangays that were represented during the consultations. It is recommended though that these sub-projects be subject to further actual field validation and reconfirmation prior to its approval for funding support.

Short to Medium-Term Targets (Years Two to Six)

In consideration of the huge funding requirement for the rural infrastructure needs of the rest of the 150 identified municipalities with CAAs, there is a need to implement the component in several phases. Factors to be considered would include the amount and availability of funding support from the program, time required for preparatory works, estimated implementation period and sourcing of funds from other programs providing similar assistance and operating in the same sites.

The 150 identified municipalities are composed of about 3,800 component barangays. However, not all of these are conflict affected especially those that are along national and provincial roads as well as municipal centers (poblacion). In the absence of an inventory of the actual number of conflict-affected barangays, the figure presented by the HD Sector shall be adopted.

The sector estimated a total of about 900,000 individuals displaced during the conflict of 2000 and about 400,000 more during 2003 many of which were the same individuals as that of the first encounter. Given this figure, it is estimated that about one million different individuals were affected by the conflict in both instances. At an average of five members per household (HH), there would be about 200,000 HHs affected by conflict.

If the average number of HHs per barangay is estimated at 300, this would translate to about 700 barangays (see **Annex C**). The first 51 barangays were the basis for the recommended "Quick Win" proposals, hence, deducting this number would result to a remaining number of about 650 barangays to be provided with assistance under the short to medium-term category. The total funding requirement to address these needs done through extrapolation for the rest of about 650 barangays would be about USD 108 million.

Risks and Possible Constraints

The risks and possible constraints in the rural infrastructure sub-sector are common to all other

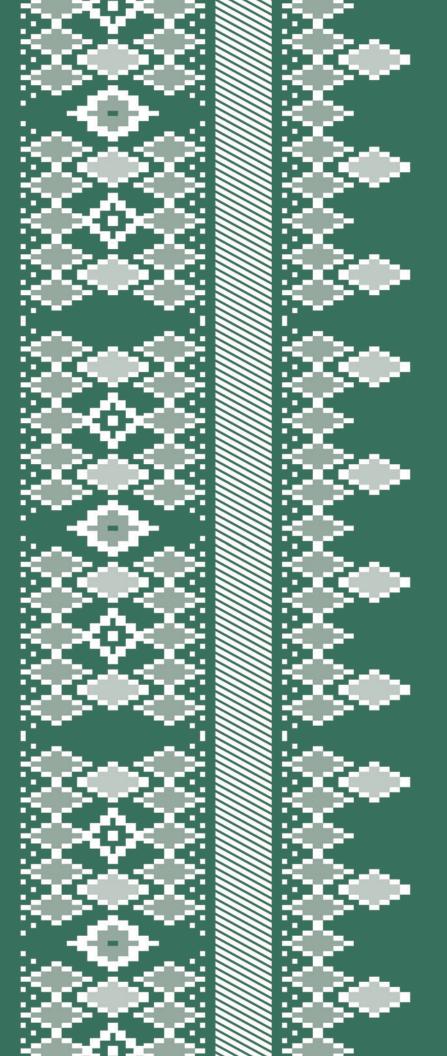
sectors as well. However, the negative impact of these constraints are far greater in the infrastructure sub-sector as these are the facilities that require huge funding support and take time to accomplish.

The JNA field visits and consultations conducted by the rural infrastructure sub-sector team has brought to light several issues and concerns. These would include issues on sustainability of the current peace effort in most areas, availability of funds from all sources, appropriate implementing and monitoring structures and the roles and functions of the LGUs and the community, fund disbursement issues and sustainability of the completed facilities.

The identified risks and possible constraints are as follows:

- Disturbance of the current peace and order situation in some municipalities
- Political interference
- Inadequate LGU capacity to deliver services
- Absence of governance in some municipalities
- The occurrence of family feud (*rido*)
- Security problems from third party adverse groups
- Distribution/Allocation of minimal resources
- Lack of acceptance by LGU officials of the role played by the BDA in the entire exercise
- Delay in project implementation even if multidonor financing is available due to the limited availability of GRP counterpart funds
- Difficulty of the LGUs to provide equity contribution as required by NEDA
- Inadequate and untimely release of funds for project implementation
- Difficulty and high cost of transport of construction materials to island provinces
- Sustainability of completed facilities given the poor financial capability of the LGUs

Given these, there is a need to assess carefully the implementing mechanisms and procedures to be adopted to address the identified constraints during the ensuing project preparation phase.



Institutions and Implementation Mechanisms



Institutions and Implementation Mechanisms

Compounding the very unstable security situation are the inadequate capacities of local government units, rural agricultural institutions, and even the national government to deliver basic social and extension services. These institutions suffer from low credibility and there is widespread perception from the affected communities of weak governance by the duly constituted authorities.

As experienced by most LGUs, the extension technicians devolved to the municipalities have already neglected their activities in educating the farmers. This was due to budgetary constraints and lack of focus of extension services. Other than the lack of logistical support, the devolved personnel are demoralized or assigned other tasks unrelated to their experience and expertise.² In addition, only a few devolved livestock technicians are qualified in livestock extension work while the rest are only performing disease control activities. It is very unfortunate that some LGUs do not even have a livestock extension worker or a livestock inspector to serve the entire municipality. At present, the most common sources of technology are the feed mills and veterinary companies, which conduct and sponsor briefings on technical aspects, uses and comparative advantage of their products.3

During the field work and consultations with the communities, it was validated that while some areas claimed that there are IAs, farmers associations, and cooperatives, many are not functioning. The failure of IAs and rural waterworks and sanitation associations in most parts of the areas caused the discontinuance of communal irrigation systems and the supply of potable water.

The ongoing conflict, aggravated by clan disputes, contributed to the disbandment of the IAs. As cited by the Mindanao Social Assessment Study (2002), many associations were organized because it was a prerequisite for them to receive material assistance. Many who are supposed to be members did not know that they are members of such

associations. A municipal council member in Midsayap had observed that farmers were being organized purposely to borrow but not to save. Most of their areas have not been visited by LGU extension workers.

At a consultative meeting with a combined group of representatives from vegetable and banana growers, traders, peace advocates, NGOs, and government officials of Northern Mindanao, they suggested the conduct of community preparation activities anchored on traditional cultural values, and directed at common productive activities. This they said would help win back the people's confidence in government and promote the peace process.

The group said that the best way to do this is to tap NGOs who have already established good reputation in the area and to involve the respected traditional community and religious leaders. Value formation and attitude building, according to them, would be the strong foundation for a sustainable community-based organization.

The farmers claimed they have not received adequate technical knowledge and market information from the concerned authorities.

Training for technicians at the LGUs is a priority as well as some transport assistance to keep them mobile. Some of the technicians at the municipalities visited have only one old motorcycle (South Upi and Masiu) while others are using their own motorcycles procured or acquired through salary deduction.

²DAR. Innovative Approaches and Success Stories on Agrarian Reform Community Development. Foreign-Assisted Project Office, 2002.

Most of them are receiving, on an irregular basis, a fixed monthly travelling allowance of PhP 100 to PhP 200, covering four to six barangays that are mostly inaccessible during rainy months. (For Midsayap, being a first-class municipality, the agricultural extension workers enjoyed a slight advantage over fourth, fifth or sixth-class municipality where South Upi, Masiu, and Matalam belong.)

In a meeting and dialogue with farmers in South Upi, the farmers claimed that they have seen neither the LGU agricultural extension workers in their municipality nor the personnel of the DENR.

OPPORTUNITIES AND CONSTRAINTS

On the positive side, the farmers appeared very interested in learning new technologies and were willing to adopt environmentally sound farming practices. All of them were willing to be members of organizations. The technicians, on the other hand, have not yet lost their interest to learn new approaches and strategies. They strongly expressed their desire to extend better services to the rural communities given some training and mobility assistance.

Stronger linkages with the region-based state and private colleges and universities should be established to avail of their updated and recent technologies that are relevant to the areas. The Northern Mindanao Associations of vegetable, fruit, banana producers or growers, and traders, should be tapped to expand their operation to other areas where they can share their experiences. They started only with nine associations. Today, there are 99 active and productive associations and continuously increasing. There are ongoing organizing activities for the calamansi growers of Lanao del Norte.

The establishment of the BDA in June 2002 means there is now a recognized body that will serve as the link for the delivery of services to the CAAs.

The BDA informed the JNA Team that it has the power to receive and disburse private and GRP

funds, provided that pertinent provision of the Agreement on Peace between the GRP and the MILF and the implementing guidelines on the humanitarian, rehabilitation and development aspects of the GRP-MILF Tripoli Agreement on Peace of 2001 are observed.

BDA stated that it may enter also into a contract with private entities, Philippine government agencies, and with an international institution, if necessary, in the discharge of its functions. It may act as a clearinghouse, passing on or awarding projects to qualified implementers.

The Mindanao Economic Development Council (MEDCo) will continue to be the leading multisectoral body to promote and coordinate the active participation of all sectors for the socioeconomic development of Mindanao. Handin-hand with this is the strong commitment of the multi-donor agencies to respond positively to the request of the Arroyo administration to provide confidence-building assistance while working on the details for lasting peace.

The lessons from the UN-led assistance to the GRP-MNLF Peace Agreement are worth looking into in terms of establishing a Project Management Office, which will supervise and coordinate the overall implementation of the total package of development assistance to the identified communities. It should take into account the lessons learned in previous projects. It should also consult with the manager in how to deal with the different LGUs, the communities, tribal groups and/or indigenous peoples.

Introducing reform, or change, to an established practice or way of life always takes time. While this can be legislated through laws, ordinances or resolutions, implementation to achieve the desired results will always meet delays. Institutions and implementation arrangements deal with people of varied cultures, beliefs, traditions, and practices. It also requires consultations, information, education, and communication campaign to ensure its understanding and eventually its smooth adoption or implementation.

NEEDS AND POTENTIALS

With the objective of bringing back the IDPs into the mainstream of national life, there is a need for a thorough preparation to build up empowerment and confidence building among these people. There should be effective delivery mechanisms for startup capital for their livelihood activities, extension services and institutional support system, relevant training strategies to boost capabilities. At the center of this is a responsive and knowledgeable Project Management Office.

The IDPs are a potent labor force. Given the proper orientation, desired values, positive attitudes, and skills training, these people can turn the former battlegrounds of the CAAs into productive land. Highly trained and experienced NGOs can be tapped to organize these groups, in addition to the technical assistance that will be provided by the capacitated LGU extension workers and the region-based state colleges and universities, including private educational institutions.

Ahead of the peace agreement, the BDA is now conducting a community-based human resource training and development program for community volunteers (CVs), who will act as development catalysts in their areas of responsibility. These CVs will be subjected to a thorough screening and selection process to ensure that communities will have committed and competent development workers.

To enable the CVs to perform their work in a holistic manner, they must go through a basic training program that will provide them with the necessary knowledge and skills, as well as appropriate attitude consistent with the basic principles of service as required in Islamic teachings.

The volunteers who successfully complete the program will then be designated as BDA development catalysts (DCs) in their respective areas. The DCs are expected to guide the other CVs who will be engaged in mobilizing the people in identifying their community priorities, planning and managing their delivery, and operating and maintaining whatever services and/or facilities are installed.

Specifically, their responsibilities are: (i) act as BDA focal persons in their respective areas; (ii) do community organizing; (iii) conduct and sustain study circles; (iv) facilitate and/or coordinate related peace and development programs and projects; and, (v) report to BDA every quarter or as needed.

PROJECT PROPOSAL

The overall objective of the sub-sector on Institutions and Implementation Arrangements is to transform the communities of IDPs and combatant-returnees into viable and productive organizations capable of planning, implementing, and managing their own development projects and to establish a responsive PMO to oversee the overall implementation of the delivery of agricultural development services in these communities. The specific objectives are:

- To coordinate closely with LGUs of the CAAs
- To organize the IDPs into viable, productive and empowered associations to pursue common and specific sectoral concerns through the services of highly trained NGOs and the BDA on community preparation and development
- To establish effective delivery mechanisms for the provision of immediate start-up capital for livelihood activities and the provision of small-scale community infrastructure in support of production activities, such as solar driers and communal irrigation system
- To develop a core of agricultural extension workers as partners in the effective dissemination of appropriate production technologies and desirable values and attitudes to various groups of farmers, fisherfolk, and women
- To train core groups of farmer leaders, fisherfolk leaders, women's leaders on specific technology packages to serve as models in their own communities
- To establish Farmers Field Schools (FFS) as practical laboratories for applied research, technology demonstration and as centers for integrated pest management training

- To establish nurseries as sources of cheap but quality planting materials, as centers for training on nursery operation and maintenance, plant propagation techniques, and horticultural technologies
- To establish an effective site-based PMO to oversee the overall implementation of the agricultural development projects intended for the IDPs and the CAAs.

PROJECT ACTIVITIES

All the sub-sectors have identified community preparation/community development as a core strategy that aims to ensure the sustainability of community projects designed to improve their welfare. The premise is that if the people have the capacity and skills, they can have the ability to plan, implement, and manage their own development.

Community or social preparation is equated with the continuing process of empowering the people so that benefits consistent with their priorities and aspirations will accrue sustainably. It is concerned not merely with the long and painful process of empowering but also with the end- results that meet the expressed needs of the poor. It is therefore a process of helping a community move from problem identification to problem solution. It is a conscious process to achieve planned change.

In general, community preparation is purposive. Normally, trained community organizers can help facilitate these community-organizing activities, including the BDA. There are credible NGOs that can deploy such organizers within the identified coverage areas.

The typical community preparation would cover the following phases:

 Community diagnosis phase involving social preparation activities; the entry and integration of the community organizers (COs) into the area, preparation and validation of community situation through participatory processes, leader-identification and community consultations, creation of local planning team, and developing leadership skills.

- 2) Community planning phase includes training of local planners, planning consultations, finalization of the community action plan, and solicitation of resources.
- Project implementation phase, which is the mobilization of the community in accordance with the action plan agreed upon. This phase includes intensive communitybased and on-the-job training aimed at developing the necessary skills for project implementation, financial management, process documentation, participatory monitoring and evaluation and others. It is at this stage where appropriate capabilitybuilding activities are conducted to respond immediately to priority needs such as production and livelihood technologies. It may also utilize study tours or development exposure trips to successful and related projects in organizations/LGUs in other areas.
- 4) Monitoring and evaluation phase is determining objectively verifiable indicators of progress and empowerment that they themselves formulated.
- 5) Organization-building and strengthening phase is the last stage, which is focused on building solidarity among officers and members, structuring the organization through committee formation, membership expansion, networking or partnership development and resource generation.

Such processes would promote strong ownership, transparency, and accountability by the community or groups for any development activity to be undertaken. Along the way, this will promote community empowerment and social cohesion.

In order to deliver this activity with a greater chance of success, the project shall engage the services of an experienced and credible NGO, or possibly the BDA that is capable of deploying community organizers in the CAAs.

The community organizers to be deployed must possess the following qualifications: sufficient technical capabilities on agro-livestock/fishery/ forestry, socio-economic/institutional development, and livelihood/enterprise development.

They shall work and coordinate closely with the LGUs and extension technicians with clearly defined and understood working agreements or arrangements between and among them. The organizers shall also work closely with the technical consultants who can provide further guidance in terms of responding to specific situations and concerns without violating established principles and practices. The organizers shall become the integrator in terms of delivering or disseminating the specific technical concerns of the technical experts.

In support of the community preparation activities, basic organizational and skills development activities shall be conducted. Some of the priority concerns are on participatory project planning, leadership development and project management skills, livelihood and enterprise development and financial management.

In areas where there are already existing but inactive or non-functioning associations, the community organizers, in close coordination with the LGU extension technicians, shall assess the status of these associations as a basis for developing a series of organizational strengthening activities. These may include the following: team-building exercises with emphasis on redefining roles and responsibilities, leadership development, project planning and implementation management, livelihood/enterprise or business development, and retraining on financial management.

CREATION OF A PMO

A PMO shall be established to oversee the overall implementation and supervision of the agricultural development activities. This will be headed by a Team Leader whose expertise is in any of the identified major disciplines and will function as senior technical consultant. Under the Team Leader are the Technical and Administrative Services. A Provincial Project Coordination Office shall be established in each coverage province, or a total of seven provinces.

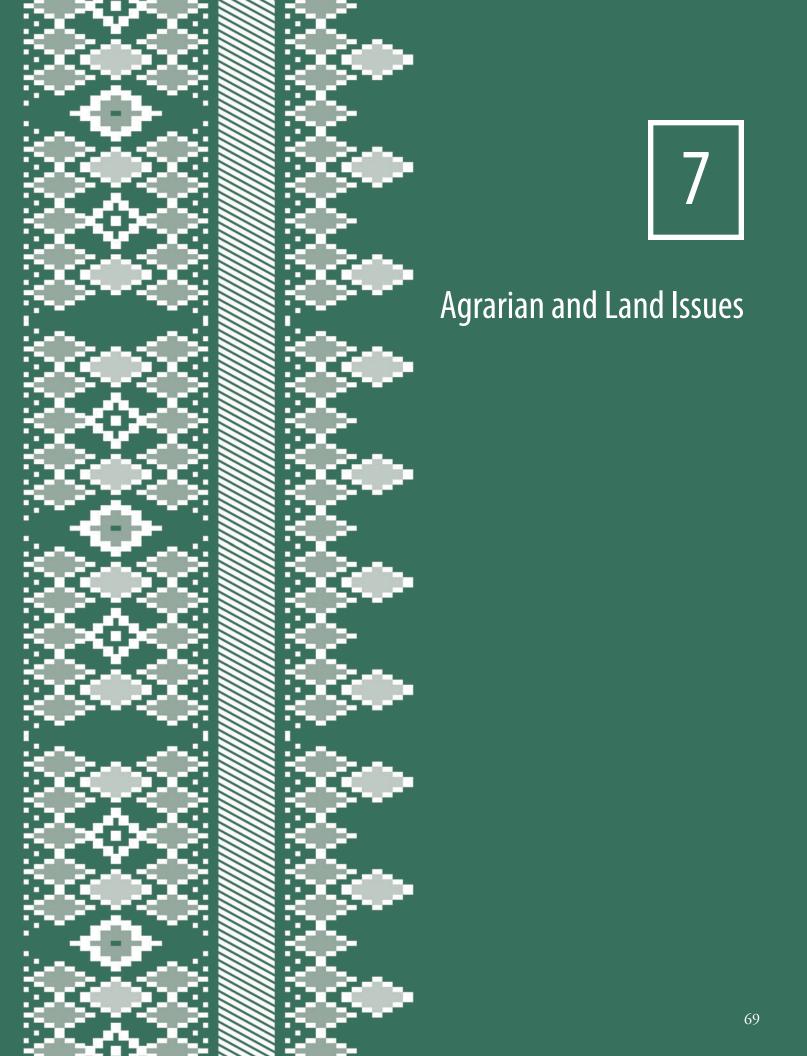
The PMO should be centrally located so it could serve effectively in project implementation. The Technical Services will be mainly responsible for providing professional technical advice and related services in the following fields or disciplines: Agronomy, Livestock and Poultry, Fishery, Rural Infrastructure, and Community Development.

The Administrative Services will provide financial management and procurement services. The Provincial Project Coordination Office is tasked to coordinate and facilitate the delivery of technical and related services at the sub-project areas through qualified service providers, LGUs (provincial and municipal), and committees to be created that will take charge in the input delivery management system.

Since the project is primarily focused on agricultural development, the PMO shall establish a close working relationship with the DA and its attached agencies. A MOA to this effect shall be executed to define their scope of work in the effective and efficient delivery of services to the target areas.

The PMO shall also coordinate and establish linkages through a MOA with other service providers at the regional or provincial/municipal levels, such as state colleges and universities, LGUs, NGOs, the BDA, private educational institutions, and religious groups.

It shall be arranged that the Provincial Project Coordinators shall be holding their offices with the Provincial Agriculturist. A MOA between the PMO and the concerned provincial LGUs shall govern such arrangements.





Agrarian and Land Issues

Agrarian institutions provide the mechanisms through which access, use and control of productive natural resources are allocated among members of society. The current state of poverty, inequality, and social instability in Muslim Mindanao are, in part, due to fundamental problems in agrarian institutions.

Specifically, conflicting claims, and limited access to and control of land resources are some of the primary reasons for the Mindanao conflict and the sub-optimal utilization of its land and other resources. Furthermore, the pressure exerted by the growing population on land resources has stunted the organization of agricultural production due to the diminution of agricultural landholdings and the cultivation of marginal lands in the public domain.

LAND OWNERSHIP FRAMEWORKS

The fundamental point of contention regarding the land problem in Mindanao is that the Regalian doctrine of property ownership imposed by the Christian government in Manila has effectively deprived many Muslims and Indigenous People (IPs) of their land claims due to its non-recognition of ancestral land claim or ownership. Private individuals knowledgeable about the law were able to title lands under their names (in some instances, fraudulently), and some of these lands were traditionally owned by the Muslims.

Because of the conflicting land ownership frameworks, the Muslims are demanding that their traditional lands be returned (particularly, if fraudulently acquired) or that they be compensated adequately. On the other hand, many Christian settlers feel that these properties were acquired through legitimate market transactions between buyers and sellers acting in good faith. Thus, they object to any move that the lands they possess be returned to the Muslims.

Apart from the Regalian doctrine of property ownership, there are more recent legislations enacted that conflict with the land ownership claims of both the Muslims and the Lumads in Mindanao. For instance, PD 705 or the Revised Forestry Code provides that land of the public domain with slopes of 18% or higher cannot be classified as alienable and disposable. However, in most cases, particularly in the CAAs, the Muslims and IPs have occupied and utilized lands with slopes greater than 18% for agricultural production.

Another recent law is the Indigenous Peoples Rights Act (IPRA). It is an attempt to recognize the IP's claim to their ancestral land and remedy the inadequacies of previous land laws. Unfortunately, IPRA contains inconsistencies highlighted by its stipulation that while recognizing customary tenurial systems, it at the same time guarantees the protection of the bundle of rights associated with landownership under the Regalian doctrine.

In the JNA consultations, key informants have articulated the sentiment that the Bangsamoro people were not recognizing the IPRA. Consistent with this view is the fact that IPRA does not operate within the ARMM. Muslim respondents also emphasized that they do not consider themselves as IPs. Necessarily, IPRA, which is the only legal framework that provides the mechanism for ensuring access to and ownership of ancestral land, is meaningless as far as they are concerned.

ADDRESSING THE PROBLEM

Three distinct domains will have to be delineated to find a workable solution to competing land claims in the Mindanao CAAs. These are the ancestral domain claims of the Muslims, the ancestral claims of the IPs or Lumads, and the claims of private landowners. Apparently, there are overlaps among these claims. A resolution of these competing claims will require consideration of the mode of their acquisition, the geographical location of the land, and the extent or prevalence of private land ownership in a particular area.

Fraudulent Land Transactions

The demand for the re-acquisition of the ancestral lands of the Muslims in Mindanao has been dramatized mainly by anecdotal evidences of fraudulent and malicious land transactions. Some cases reportedly involve highly systematic and elaborate schemes where high government officials, in collaboration with Bureau of Lands officials, would title huge tracts of land under their names without prior knowledge and consent of existing occupants and claimants.

Another technique employed was direct private transactions between indigenous landowners and Christian settlers, which due to asymmetry in market information, would put the former at a disadvantage. In some instances, the heirs to these lands acquired through fraudulent and malicious transactions, have sought legal remedies to recover their ancestral lands.

In a number of occasions, these cases trigger conflicts that go beyond family feuds. It is obvious that for lands acquired maliciously and fraudulently, the government should affirm the right of the Muslims and IPs over these properties.

Displacement and Land Use Rights

Prior to the armed conflict in the late 1960s, Muslims and Christians were living in relative harmony. For example, there was peaceful co-existence between the Muslims and Christians inhabiting the two Lanao provinces then. When the conflict escalated, the religious and cultural divide was highlighted by the geographical separation of the two groups of people. The coastal areas of the

provinces became predominantly Christian and the inland areas, Muslim.

Consequently, Muslims had to abandon their lands in the coastal areas while Christians in the inland areas had to transfer to coastal areas. A similar situation prevailed in the other conflict-affected provinces, such as North Cotabato, Maguindanao, Sultan Kudarat, Zamboanga del Sur, and Basilan.

While displaced landowners from both sides may have ownership rights over land in their original communities, they may no longer be interested in exercising their usufruct right over their lands because of demographic changes. Further, due to geographical and psychosocial constraints, displaced landowners from both sides are now uncertain as to the legal and factual status of their abandoned lands. For practical reason, it might no longer be feasible to return untitled lands in these areas to their original claimants.

Structural Problems in Agrarian Institutions

The other aspect of the agrarian problem involves limited access to land resources. The concept of ancestral domain and indigenous agrarian institutions are still relevant and are practical approaches to enhance resource utilization and self-determination. However, one must be cognizant of the fact that even in the predominantly Muslim areas in Mindanao, tenurial arrangements based on private land ownership have become the

In a benchmark survey conducted in 1990 by the Institute of Agrarian Studies, University of the Philippines Los Baños, it was established that in the provinces of Lanao del Sur, Maguindanao, Lanao del Norte, Sultan Kudarat, and North Cotabato, the dominant tenurial arrangements include share tenancy, leasehold, and owner-cultivatorship.⁴ Moreover, a recent study conducted in the CAAs revealed that most of the respondents have private landholdings.⁵

This leads one to the important consideration that problems in the agrarian structure remain critical determinants of poverty and inequality in Muslim Mindanao. Resolving competing land claims will not necessarily lead to the automatic

⁴ In 1990, a study team headed by Dr. Luzviminda A. Cornista of the Institute of Agrarian Studies, University of the Philippines Los Baños, Laguna, Philippines conducted the "Benchmark Study for CARP".

⁵ The study, "Analysis of Land Tenure Patterns and Claims in Central and Western Mindanao: Phase 2" conducted by Idea Capital Pte. Ltd., Singapore for the World Bank established that 84% of the respondents have private ownership to their landholdings.

improvement of the socio-economic plight of the Muslims and Lumads.

SUGGESTED DIRECTIONS

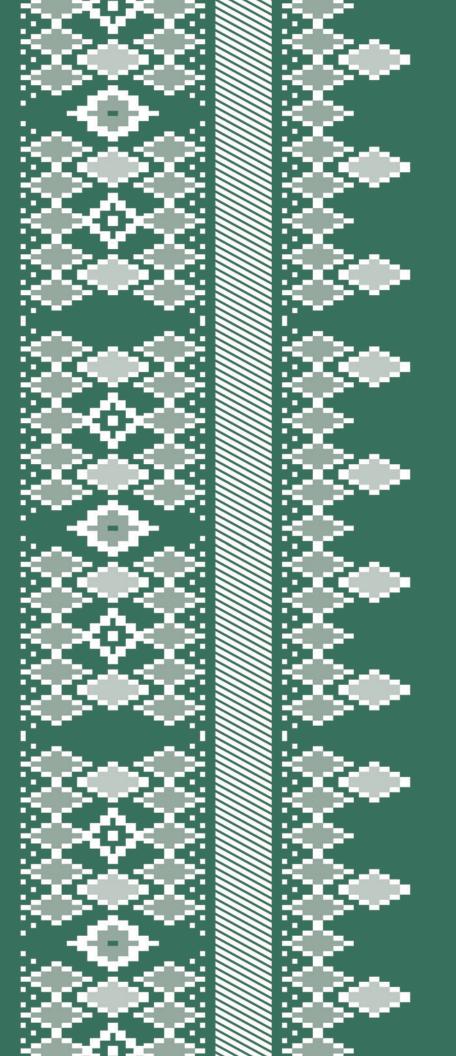
At the policy level, there is a need to provide a legislative framework toward harmonizing ancestral land rights and private ownership beyond property ownership rights. Moreover, there is urgency in addressing policy issues that concern agrarian structure such as land distribution, land use and the organization of production. The relevance of these issues lies in the fact that in Muslim Mindanao, land utilization is ostensibly sub-optimal.

A third imperative is settling the issue of whether or not Muslims will be categorized as belonging to the IPs. The implication of this is that if Muslims are considered IPs, then agrarian issues can be addressed within the framework of IPRA. Otherwise, there is a need to provide a legal framework to address, in a realistic manner, the agrarian concerns of the Muslims in Mindanao.

Regarding privately owned lands located within areas that are covered by ancestral domain claims by the IPs, the formulation of explicit policy directions is imperative. This will mitigate problems should the exercise of the rights of one party adversely affect the rights of the others.

At the operational level, there is a need to pursue the following measures:

- Provide and agree on the parameters for the delineation of the boundaries of ancestral domain claims by the Muslims in Mindanao given current realities.
- Determine the nature and extent of conflicting claims in order to design specific interventions based on systematically drawn information to complement the anecdotal evidences of fraudulent and malicious land transactions.
- Determine the nature and extent of indigenous and non-traditional agrarian institutions in Muslim and Lumad communities.
- Facilitate the resolution of pending land disputes involving Muslims and IPs in the CAAs.



8

Environmental Issues



Environmental Issues

Within the context of the rural development framework, there are three critical elements that are related to environmental concerns. The first pertains to environmental consequences directly attributable to the conflict, and the second involves environmental safeguards in relation to the proposed interventions under the rural development sub-sectors. Finally, there are broader environmental concerns that must be addressed to ensure sustainability of the rural development interventions.

The JNA Sector Teams each conducted their own assessment of the project sites. Key environmental and social issues were identified based on the assessment of each sector team. Additional key environmental and social issues were identified based on the desk review from which specific projects were then proposed to address the key environmental and social issues identified.

Each of the proposed sector projects had undergone review and screening. A number of mitigating measures were identified to counter the negative impacts of the identified projects. Enhancement measures were also formulated to boost further the positive impacts that will be gained when proposed projects will be implemented.

Additional secondary data needed in the conduct of the desk review were sourced from various government agencies such as the DENR, DA, DSWD, Eco-Governance Program of the USAID, and the Office of Muslim Affairs (OMA). Interviews were likewise done with select regional executive directors of the DENR's Forest Management Bureau and Environmental Management Bureau.

Similarly, consultations with members of civil society and key stakeholders were undertaken to gather inputs on environmental needs and social safeguard issues as well as to assess how they can help in delivering the services required.

In addressing the above concerns, the assessment focused on the following:

- Identify how the conflict has impacted the environment
- Specify actions or projects to address key environmental issues and propose matching assistance to address the issues
- Evaluate the impact the projects may have on the environment and propose possible mitigation strategies/measures
- Recommend steps to prevent or mitigate existing adverse environmental impact
- Strengthen institutions and training, monitoring and inter-agency coordination (including assessment, design input, monitoring and evaluation)
- Recommend indicators that may be appropriate to gauge and monitor environmental impact
- Identify existing regulations or guidelines that may affect the implementation of assistance projects (at the international, national and regional levels)
- Take steps to promote environmental sustainability and protect the quality of environmental commons

Deforestation and Soil Erosion

One of the contributory factors to deforestation and soil erosion in Mindanao is the regular bombing rounds done by the Philippine Army during operations against rebel hideouts. Exploding bombs create deep craters in the humus layer, which destroys soil nutrients and takes years to recover. Estimates show that a 240-kilogram bomb makes a crater that is 4 meters deep and 8 meters in diameter or 50 square meters in surface area. Hence, the total surface of the craters created by a day-long bombing round using 240-kg shells can be devastating.

The craters created by the bombs become unusable and so is the land around the craters. The destruction of the humus layers of the soil consequently destroys the flora and fauna inherent in the soil. Soil stability is also affected, making the material readily prone to erosion. Even if undisturbed, the natural regeneration of this layer of soil could take many years.⁶

Protected Areas and Natural Habitats

Protected forest reserves and nature parks suffer even more significant environmental impacts than non-protected areas since these are commonly located in remote frontier areas, provide refuge for rebels or serve as a covert location from which to stage cross-border attacks and ambushes. These areas commonly serve as wildlife habitats or niches, where a small army or group of rebels can have a steady supply of wildlife meat, while in hiding. Since these are remotely located and sometimes dangerous to patrol, the incidence of illegal mining, poaching and hunting for wildlife meat, cutting of timber and agricultural encroachment often increases.

The biodiversity of Mindanao can suffer adverse consequences brought about by several factors. These are:

- Physical destruction of the wildlife habitats or niches and the disruption of plant life caused by the regular air and land attacks instigated by both the armed forces of the government and the MILF.
- Degradation of wildlife habitats and plant and animal populations from chemical contaminants. The use of chemicals (pesticides, insecticides, etc.) and inorganic

fertilizers by large plantations and local farmers permeates into the surrounding forestlands thereby affecting the resident wildlife and local flora. Whether these are borne in air, water or soil, the effects on wildlife are adverse.

- Disturbance of fauna in their habitats and along migration routes. Logging activities, agricultural expansion and military operations bring about various effects on the wildlife habitats. The noise of logging operations and bombing rounds has a direct impact on the migratory routes of wildlife forcing them into undue stress and disorientation, which often leads to their demise.
- Incursion into the protected areas, forest reserves, and nature parks. These thickly forested areas offer advantageous locations/positions for both military and rebel groups.
- Construction of evacuation centers, refugee camps and havens by the upland dwellers, combatants, the military, and evacuees. Due to the vast natural resources found in forestlands, these become ideal locations for resettlement or temporary shelters for people displaced by the conflict in the region.

Forest reserves are initial components to the national integrated protected area system of the Philippines. ARMM has the greatest hectarage of forest reserves in Mindanao conflict-affected regions followed by Regions 12 and 10.

Solid Waste Management

Waste disposal in conflict-stricken Mindanao poses a major environmental problem. Except for major towns and municipalities not directly affected by military and rebel operations, waste collection and disposal in other areas are not implemented regularly and effectively. Debris of bombed residences and other structures are left unattended.

During the conduct of military operations, the residents often hurriedly abandon their homes for safe locations leaving their communities open to looters and scavengers. Household waste and the debris from military operations are left to rot. All

⁶ McKenna, Kelly and Alyssa Beck, Philippine Deforestation, 1997; Regional Environmental Center for Central and Eastern Europe, Assessment of the Environmental Impact of Military Activities during the Yugoslavia Conflict, June 1999

unattended waste material subsequently permeates the groundwater and the existing water system of rural communities. Since the local government in these affected areas cannot function effectively, solid waste is likewise unattended.

Even in urban areas, available technologies allow only a minimum volume of waste to be recycled and the process would inevitably allow hazardous discharges into the air and water. The remaining waste are normally dumped into a common site and then buried or wantonly disposed in bodies of water.⁷

According to documents 2004 from Region IX, water quality in major rivers in the region was found to be of inferior quality. This is due to improper waste management and inadequate sewerage system in most of its communal/rural areas. In addition, indiscriminate dumping of industrial waste in urban areas has led to the degradation of major water bodies in the region. The increasing number of population especially in the urban areas further aggravates this.

Contrary to this current state of the regional waters, commercial fishing has consistently increased through the years. The need for proper water management to improve its quality should be given priority to maintain the source of living of most of the coastal communities in the region.

Based on data gathered from the National Solid Waste Commission there are 36 open dumpsites situated in Region XII. These are distributed among the provinces of Cotabato, Lanao del Norte and Sultan Kudarat. From among these provinces, Lanao del Norte has the most number of open dumpsites with a total of 16 or 44.44% of the region's total. Among the municipalities with open dumpsites include: Bacolod; Baloi; Baroy; Kauswagan; Kapatagan; Kolambugan; Lala; Maigo; Poblacion; Pantao Ragat; Salvador; Dimaporo; Tagoloan; Tangcal; Pantar; and, Matungao.

The province of Cotabato has the second largest number of dumpsites totaling 14 or 38.89%. These dumpsites are located in the following municipalities: San Mateo; New Pontevedra; Carmen; Kabacan; Cabapangi; Makilala; Matalam;

Midsayap; M'lang; Pigcawayan; Pikit; President Roxas; Poblacion Magpet; and, Tulunan.

Sultan Kudarat has the least number of open dumpsites with 6 or 16.67% of the region's total. These are found in the municipalities of Kalamansig and Lambayong as well as in key cities including Marawi City, Tacurong City, Kidapawan City and Iligan City. The rest of the region's total is distributed in the provinces of Agusan del Norte (15.15%) and Agusan del Sur (6.06%).

Further, there are only two controlled disposal facilities located in the whole of Mindanao. These controlled disposal facilities are both located in Region XII specifically in Isulan and Lebak in Sultan Kudarat. There are 10 potential sanitary landfill sites to service different areas in Mindanao. Most of these sites are located in Region XII. Meanwhile, there are five potential sanitary landfill sites in the island, which are specifically located in the following cities/municipalities, namely: Kauswagan, Lanao del Norte; Marawi City, Sultan Kudarat; General Santos City; Tacurong City, Sultan Kudarat; and Marihatag, Surigao del Sur.

Two of the potential landfill sites are located in Region IX, one in Isabela City and another in Dapitan City. The same number of potential landfill sites is located in Region XI in Danao City and Davao City. There is also one site situated in the Caraga Region in Surigao del Sur.

Water Resources

Majority of the rural communities in Mindanao do not have secure water supply systems. Some residents who reside near water channels rely mainly on surface water for domestic uses. The community often constructs artesian wells and they serve as communal source of water. Still others have to travel to nearby communities to fetch water. This practice may, however, drain the water supply of the host community when the number of non-residents acquiring water increases.

Communities living near the Liguasan Marsh⁸ have difficulty in acquiring clean and safe water within their area. Studies conducted by authorities have shown that 91% of all water points presently being

⁷ Committee on the Environment, Regional Planning and Local Authorities, Environmental Impact of the War in Yugoslavia on Southeast Europe, 10 January 2001.

⁸ European Commission Humanitarian Aid Office, ACH Liguasan Marsh Vulnerability Survey, 2004.

used tested positive for bacterial contamination, and 94% of the sampled water containers regularly used by residents also tested positive for bacterial contamination.

The main source of water in the marsh is the manually dug open well which is not suitably protected. In the less isolated areas, some residents have established hand pumps so there is less contamination. During the rainy season, the wells become flooded, forcing the residents to access water directly from the marsh.

The repeated, intensive and destructive air attacks and bombing rounds made by the military in several areas in Mindanao contribute immensely to environmental problems. Direct hits on ammunition and supply depots where oils and other toxic materials are stored can cause explosions that release toxic substances into the land and air. These toxic substances can possibly seep into the ground water and contaminate the water supply of the community.⁹

Environmental Considerations for Proposed Activities

Environmental Assessment

Environmental complications may arise if project sites are not properly identified or if the number of rural infrastructure projects such as medical facilities and water supply systems are not specified. The environmental impacts of these activities must be assessed given the possible shortage of potable water supply if these areas are clustered together. This component can link with the Rural Infrastructure sub-component.

Indigenous People

An IP Framework Plan must be prepared especially for projects that identify indigenous peoples as among the potential beneficiaries of a project. While the project sites are not specifically located, IPs are within the JNA sites. In particular, proposed livelihood projects must result in social and economic benefits that are culturally compatible with the specific IP group. World Bank Operational Policy 4.2 is explicit in requiring an informed participation of IPs as regards projects addressing issues pertaining to them.

Involuntary Resettlement

Proposals like the community corn central, area expansion programs for sugarcane, and land for large-scale oil palm plantation and tree plantation project might result in involuntary resettlement of some of the residents. Road opening and construction as well as the building of the fish port might also lead to involuntary resettlement of locals residing in targeted projects sites. Since the number of displaced families is not yet known, or the exact location of proposed projects, a Resettlement Policy Framework may be required.

Use of Pesticides

There is possible use of pesticides in the proposed production project for cardava bananas. Care must be given to ensure that the purchase of pesticides conform to World Bank policy regarding the use of pesticides.

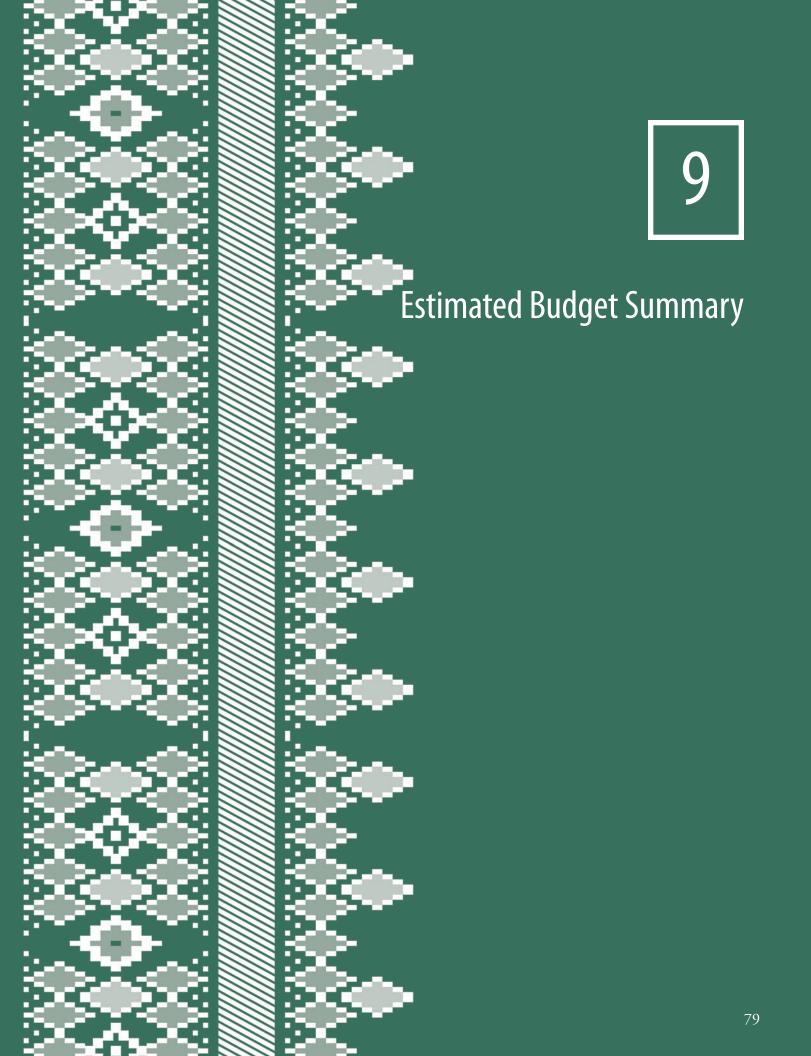
Natural Habitats

While there is no mention of project areas that fall within protected areas, CAAs are often situated within the flight corridor of such areas (i.e., from Mt. Kitanglad to Mt. Apo to Liguasan and Agusan Marsh). However, some agricultural and infrastructural projects will be in marshlands like Liguasan Marsh affecting distinct natural habitats. Agricultural projects trigger land conversion. Access infrastructure on the other hand opens up areas that provide entry points into natural habitats like old growth forests. Cumulative hectarage for RD projects far exceed 10,000 ha hence this might have adverse impact on natural habitats. The development of an Environmental Management Plan (EMP) is encouraged.

Forestry

Promoting plantations with trees like Gmelina and rubber in a monocrop fashion may threaten the immediate forest structure of an area. Gmelina, for instance, is an exotic species that may have to be limited to sites that are situated in under-utilized or marginal areas. Again, the development of an EMP is recommended.

⁹ Regional Environmental Center for Central and Eastern Europe, Assessment of the Environmental Impact of Military Activities During the Yugoslavia Conflict, June 1999; European Commission Humanitarian Aid Office, ACH Liguwasan Marsh Vulnerability Survey, 2004 and Committee on the Environment, Regional Planning and Local Authorities, Environmental Impact of the War in Yugoslavia on Southeast Europe, 10 January 2001.





Estimated Budget Summary

The findings of the JNA have yeilded rich information on the needs of the CAAs. If resources were unlimited and all the needs of the CAAs were to be met, the financial and human resources required would be enormous.

The resulting estimate would indicate the order of magnitude of the needs of the people in the 150 municipalities. In the estimation of the needs of these areas, the following assumptions have been made:

AGRICULTURAL DEVELOPMENT

For this sub-component, it is understood that the 19 sample JNA municipalities were representative of their areas' agro-climatic conditions; the people; the capacity of their local governments; and their requirements for the immediate, as well as for the short to medium term. Thus, the needs of the 150 municipalities were determined by extrapolating the needs of the 19 municipalities, and the potential needs are estimated at USD 170 million.

RURAL INFRASTRUCTURE

Similar assumptions were made for this subcomponent. The consultants carried out detailed work initially for 19 municipalities, and then extrapolation was done for 150 municipalities. Total needs for this sub-component is estimated at USD 114 million.

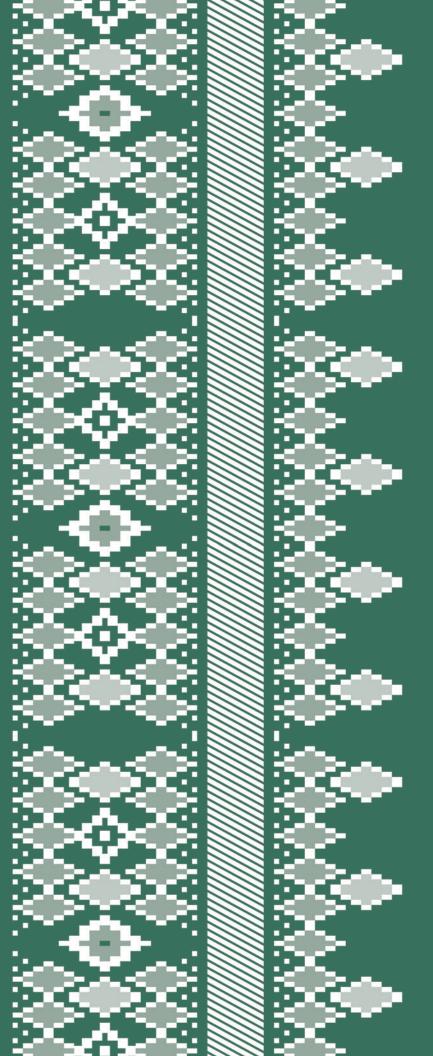
AGRIBUSINESS AND MARKETING

For this sub-component, the estimation is less straightforward because the proposals for the 19 municipalities may not be representative or applicable to other municipalities. Example of such proposal is the Big Push program (oil palm), which absorbs as much as 70% of the sub-component cost. For this reason, the experts estimated that the needs of the 150 municipalities are three times that of the 19 municipalities or USD 54 million.

The total financial requirement of the Rural Development component of the 150 municipalities was estimated at USD 338 million.

MINDANAO TRUST FUND FOR RECONSTRUCTION AND DEVELOPMENT

As indicated before, the MTF-RDP will be a transitional assistance for immediate implementation as soon as a peace agreement between the GRP and MILF is signed. As such, it will have limited resources and will focus on the more immediate needs. It will not be able to cater to all the needs of the CAAs. The medium and long term needs will have to be the responsibility of the national, regional and local governments.



Annexes

Annexes

The annexes in the following pages are examples of possible projects that could be implemented in CAAs. They are not meant to indicate projects that will be supported in total by MTF.

Annex A PROPOSALS FOR AGRICULTURAL DEVELOPMENT

A1. CROPS AND HORTICULTURE

Annex A.1.1. Emergency Assistance for Field and Horticultural Crops

1. Project Description

The emergency assistance will assist the beneficiaries, who are generally rice and corn farmers, by providing them with seeds and fertilizer inputs for two growing seasons. In addition, each family will be given a packet of assorted vegetable seeds and fertilizers for a backyard garden as source of nutritious food for the family. Through a parallel intervention, the farmers will also receive draft animals and appropriate implements for field cultivation.

2. Project Objectives

The project objectives are to:

- Assist in the resettlement and rehabilitation of residents in the CACs;
- Help in providing CAC residents fast means of producing their own food;
- Lead the beneficiaries to the mainstream of development and improve on their living standard;
- Provide the GRP a transitory period for designing assistance program leading to a long-term strategy in line with the national development goals; and
- Create an atmosphere for building trust and confidence among and between the conflict victims, the local residents and the local government
 units.

3. Design Considerations

For any intervention to work, it must be designed in such a way that the benefits will closely match their needs with due consideration of their circumstances. Therefore, the interventions shall be viewed in its short-term gestation period, which shall be referred to as immediate or emergency projects.

4. Project Components

Considering the vast area and distribution of the CACs, it is best to have a focus on the major farm enterprises with greatest impact on the need of the majority of the affected residents first and then attend to the others later. The immediate projects will focus on the following:

4.1. Rice Production (Irrigated and Rainfed)

For beneficiaries settling in the lowland, rice will be the priority commodity especially if the area is irrigated. The package will include certified seeds and fertilizer inputs for one (1) hectare per family beneficiary. If the beneficiary follows a monoculture system, he will receive a second package for another growing season. If he grows corn as the second crop, he gets a corn package for his second crop.

In addition to the inputs, the farmer beneficiaries will be given access to land preparation equipment, draft animal, and post-harvest facilities on a shared-arrangement basis. Training of the farmers on improved rice production and other topics will be included in the package. Under irrigation, increase in yields ranging from 30-60% can be realized using the assistance package, depending on the level of technology currently being used by the farmers.

4.2. Corn Production

Corn is the common crop grown in the uplands under monoculture, as intercrop under coconut, and as second crop to rice in some rainfed areas. The assistance package shall include hybrid seeds and fertilizer input for one hectare of corn per family beneficiary. Each beneficiary gets a second package in the following season if he follows a monoculture system.

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In addition to the inputs, the farmer-beneficiaries will be given access to land preparation equipment, draft animals, and post-harvest facilities on a shared-arrangement basis. Training on improved corn production and other topics will be included in the package. Because more corn farmers are still using traditional practices than in rice, higher incremental yields can be realized, 30-80% with the assistance package, depending on the current level of technology adopted by the farmers.

4.3. Vegetable Production

Because of their short cycle of about 60-90 days, vegetables can provide a supplementary source of nutritious food for the beneficiaries while waiting for their main crops to be harvested. They are, therefore, very ideal for resettling families as quick source of nutritious food. Furthermore, they are generally grown in the backyard for family consumption. Like fruit tries they serve as a component symbolic of a home.

The vegetable package will include about 30 grams of assorted seeds and fertilizer. Species will be limited to eggplant (*Solanum melongena*), string beans, bitter gourd, and squash (*Cucurbita maxima*). The main idea is to provide immediate supply of nutritious food for home consumption.

5. Implementation

Implementation of the project will be done in accordance with the established structure agreed upon among the stakeholders (see separate proposal on institutional development)

The intended beneficiaries for this project are the residents and immediate members of their families in CACs, including the victims of the 2000 and 2003 armed conflicts in some parts of Mindanao. Assistance will be extended to each family, not individuals. To qualify as a recipient, the intended beneficiaries must meet the following requirements:

- Individual families must be represented by a head of the family who must be certified by the Department of Social Welfare and Development, National Disaster Coordinating Council, and the Local Government Units as legitimate residents of the conflict-affected areas.
- Whenever feasible the beneficiaries must be organized, formally or informally, for purposes of more systematic coordination, distribution of inputs, conduct of trainings and monitoring and coordination.

6. Project Benefits

With the package of assistance that will be extended to the CACs, yields of crops are expected to increase significantly, at least for the two growing seasons that will be covered by the program.

7. Issues and Risks

In any undertaking, there are issues and risks. Certain assumptions are needed to realize the expectations. Some of these assumptions are as follows: peace and security prevails in the community; mutual trust among and between people and government developed and sustained; all factors of production (including infrastructure, market environment, institutions, and government policies and programs) are in place and supportive of farm activities; Participants (recipients and donors) are able to meet their respective responsibilities in the project as planned; recipients are able to manage their resources for optimum productivity under a sustainable environment; and no major calamities internal nor external to the project will occur.

8. Cost Estimates

Summary of cost by commodity for input assistance for individuals and all beneficiaries in 17 proposed sites in the CACs.

Commodity	Input	Area/ Beneficiary (ha)	Input/ Beneficiary (kg)	Input Cost/Unit (USD)	Total Input Cost/ Beneficiary	Number Of Beneficiaries (17 Sites)	Total Cost (17 Sites)
Rice	Certified Seeds Fertilizers	1 1	40 400	0.50 0.35	20 140.00	6,080	972,800
Corn	Hybrid Seeds Fertilizer	1 1	20 300	2.50 0.35	50.00 105.00	9,120	1,413,600
Vegetables	Seeds	0.028	29	0.05	1.45	19,000	64,045
Total for one growing season 2							

(continued...)

Annex A.1.2. Fruit Tree Production and Nursery Support and Horticultural Crops

1. Project Rationale

The potential for fruit production as a livelihood enterprise is quite good because of existing demand. Its advantage is it does not require any specific size of landholding to be of commercial value. Fruit trees have special functions for the environment while at the same time giving regular income from fruit harvest.

2. Project Objectives

The project objectives are to:

- To provide alternative and diversify sources of income for farmers;
- To protect the watershed areas around Lake Lanao and maintain supply of food; and
- To increase the short-term availability of quality fruit tree seedlings

3. Design Considerations

The project will focus on families with serious environmental concerns in their current production systems and families with limited landholdings but wish to grow some trees as suplemental income source.

Because of the long gestation period of fruit trees, farmers must be taught to grow annual crops. Core satellite nurseries will be established to minimize stress associated with the transport of seedlings. To reduce the gestation period and ensure quality, large planting materials will be sourced from reputable plant nurseries.

4. Implementation

There are two options in the implementation: maintain a maximum of 300 hectares to be covered for the two areas with a minimum area of 0.25 hectare or 30 grafted seedlings per beneficiary; and maintain a maximum of 300 hectares to be covered for the two areas for about 3,000 beneficiaries at 0.1 hectare per recipient.

5. Project Benefits

In the earlier stage, indirect environmental benefits can be derived from the project. Economic and financial benefits will soon be realized as soon as the trees start to bear fruit.

6. Issues and Risks

It takes a few years before financial and economic benefits are realized. Therefore, the project cannot be depended upon for the first three to four years. Farmers in relatively large areas will not plant fruit trees if they do not have the ownership of the land. However, a backyard scale of about 15-20 for small trees and 8-10 for larger trees would not be a problem. Because of seedling and transport cost, establishment of local nurseries and training of local propagators may be more viable in the longer term.

7. Cost Estimates

Investment Costs

Inputs	Unit	Price	Total (USD)	
LPM	pcs	4	336,000	
Small Seedlings	pcs	2	45,000	
Seeds and Scions	lot	10,500	31,500	
Fertilizers	ton	350	24,500	
Supplies	lot	5,000	15,000	
Tools	lot	5,000	15,000	
Equipment	lot	6,000	18,000	
Structures				
Green House	pcs	3,000	9,000	
Screen House	pcs	1,500	4,500	
Shed	pcs	2,000	6,000	

(continued...

Inputs	Unit	Price	Total (USD)
Training	ses	500	9,000
Personnel			
Foreman		6,000	54,000
Nursery Assistant		3,333	29,997
Propagator		2,666	95,976
Vehicles	unit	6,000	18,000
Satellite Nurseries	lot	12,000	108,000
Total			819,473

Annex A.2.1. Rehabilitation of Municipal Fishermen

1. Project Description

The primary objectives of this project are to establish food security in conflict-affected areas and open livelihood opportunities for women and other conflict-affected persons.

The potential of the areas could be maximized to sustainable level if the fishermen could be provided with production inputs and use new technology of capture fishes without destroying the fish stocks in the area.

The project is designed for a group of five fishermen as one cluster that will be provided with one boat, a gas lamp and fishing gears consisting of different mesh sizes.

The selection of fishing gear mesh sizes shall be decided by this group of fishermen, including the size of boat suitable for their fishing activities.

2. Implementation Arrangement

The project will be implemented in coastal and inland communities identified by the project management team. The identification of the beneficiaries shall be selected based on criteria by a group identified by higher authorities. A community identified to receive inputs shall undergo community organization; project and financial management; peace advocacy program training on resource management; and, technology to improve their practices.

The community organization shall be done in with coordination with the LGUs (both the municipal and barangay level), Bangsamoro Development Agency and identified government agency. Procurement and delivery of inputs shall be done through the Project Management Team, in coordination with the LGUs, BDA and responsible agency of the government. Since part of this project is capacity building of the LGU's, training has to be undertaken by train extension workers to monitor and evaluate the project.

3. Number of Beneficiaries

A total of 3,300 families/households shall benefit from this project, or a total of 16,000 persons. In order to make the project successful, it is important that participation in this project is cohesive. In addition, it is assumed that 50% of the women will be involved in other associated works such as marketing and fish drying.

4. Benefits

It is assumed that production in this area shall contribute 1.8% of the total fish production in this country in the first year and about 2.5% in the second year. The fish catch of municipal fishermen has been reported to be very low at 3-5 kg per fishing day. It is expected that the fish catch shall double to about 10-15 kg per fishing day in the first year and may improve as fishermen are trained in order to improve their fish catch.

As the fishermen learned to be cohesive as a community, support each other to improve themselves without ethnic identification, peace could come to these affected communities sooner than expected.

5. Issues and Risks

The project implementation will have to consider the following issues: weak implementation of fisheries laws, such as illegal fishing and intrusion of commercial vessels of the local government units; peace and order conditions in the area; and changes of weather condition.

6. Cost Estimates

Estimated cost for the rehabilitation of municipal fisheries project (US dollar)

Input	Unit	Total (USD)	
Nets /a	No.	371,250	
Boats /b	No.	176,880	
Lamps	No.	2,970	
Grand Total		551,100	

[/]a Three different mesh size net per boat. The mesh-size decided by beneficiaries

Annex A.2.2. Enhancement of Seaweed Farming in Selected Coastal Communities

1. Project Description

The poorest among the poor in many areas in the Philippines are found in the rural fishing communities. The rich fishing grounds of Mindanao provide vast potentials for the economic growth of these rural fishing communities. The development of these communities, however, is hampered by limited access to production inputs and appropriate technology.

The conflict in Mindanao destroyed many opportunities in these villages and providing them with production inputs and appropriate technology will start again their productivity and will encourage livelihood opportunities to some members of these communities.

2. Objectives

The primary objectives of the project are to provide a livelihood for 3,300 families/households and livelihood opportunities to other members of the conflict-affected communities, especially women.

3. Design Consideration and Description

- The method of culture in this project is called fixed bottom design.
- Stakes (Bamboos) driven deep into the substrate, spaced at 10 meters apart and 1 meter interval in rows.
- Nylon filament line is tied to one stake, stretched and the other end is tied to another stake in the opposite row
- Selected seaweed cutting (50-100 gm) are tied to the nylon filament at 25-30 cm interval using soft plastic straw.
- Seaweed is allowed to grow to 1 kg or more before harvest
- The whole set harvested and replaced by new cuttings

4. Implementation

The hectare of seaweed farm is given to 20 families/households to operate as one seaweed organization, selected by criteria set by appropriate authorities. This organization is trained in all aspects of seaweed culture, including harvesting and post harvest technology. The project shall benefit at least 1000 families/households. They will be provided with nylon filaments, a small boat and a dryer. The group will provide the labour for the construction of the facilities.

5. Benefits

The whole project will contribute 600 tons of fresh seaweeds valued at US\$ 60,000 at a farm gate price of US\$ 0.10 per kilograms per annum. The linking of the seaweed farms to the main processors in Zamboanga and Cebu will generate good price for the seaweeds in the farm site. The project will have a multiplier effect creating livelihood opportunities both upstream and downstream. The project will also diminish pressure on the fish stocks in coastal waters of selected municipalities. Among the social benefit is the cohesiveness of the community to work together as one movement which is essential for a lasting peace in Mindanao.

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[/]b one boat for each of five households

6. Issues And Risks

- Poor quality of seeds
- Diseases
- Unavailability of appropriate site for culture
- Market price fluctuation
- Peace and order

7. Cost Estimates

Cost Estimate: Immediate Needs (US dollar)

Investment Cost Inputs	Unit	Total (USD)		
Seeds /b	kgs	288,750		
Nylon Monofilament Rope	Meter	330,000		
Soft Plastic Straw	Meter	6,600		
Bamboo /c	No.	42,900		
Boat	No.	95,700		
Dryer /d	No.	33,000		
Grand Total		796,950		

[/]a For 3,300 beneficiaries/families, 20 beneficiaries/families operate one hectare farm

Annex A.2.3. Development of Fish Cages

1. Project Rationale

The Philippine lakes and reservoirs used to be exploited solely for capture. The successful culture of tilapia in cages in Laguna de Bay has led to the introduction and establishment of aquaculture in other lakes and reservoirs in the country. The fish pens and fish cages in Laguna de Bay have grown from the initial 24 ha pilot farm in 1980 to more than 20,000 ha, supplying more than 50 tons of fish annually. Liguawasan Marsh in Maguindanao and North Cotabato and Lake Lanao have also been shown to sustain floating cages of tilapia and carp, although in Lake Lanao supplemental feeding is necessary because of its depth.

2. Project Objectives

The primary objectives of this project are: (i) to develop fish cage culture in selected inland and coastal waters in conflict affected areas; and (ii) to generate employment opportunities to conflict affected persons.

3. Design Consideration

The size of a grow-out fish cage is 4 meters by 4 meters and 2.5 meters in depth. For the shallow waters, such as in the case of Liguawasan Marsh area, a stationary type shall be constructed. In areas where the water depth is more than 5 meters, a floating cage shall be designed, with frame supported with floats and anchorage. This cage is made up of netting materials which are sewn together to form an "oversized mosquito net". It is installed in the water in an inverted position and held in place by various types of anchor.

4. Implementation

The beneficiaries are selected in accordance with the criteria developed by a committee created by higher authorities. They shall undergo training programmes on capacity building, financial management, management of the fish cage operation, feeding, harvesting, post harvest methods and selection of fingerlings. The project will provide the beneficiaries with a module for four families/households fish cage, seeds or fingerlings, and feed. The beneficiaries shall provide the labour for the construction of the cage, bamboos, anchor, floaters (drums) and other

[/]b calculated at 5,000 kgs per hectare

[/]c 4 boats per hectare

[/]d one drier per hectare consisting of concrete post, timber support and bamboos

materials needed for the operation of the fish cage. The total number of beneficiaries of the project is about 500 household/families in selected conflict-affected communities.

5. Benefits

The project when fully implemented shall contribute about 750 tons of fish in the market. In addition to potential production, it also creates livelihood opportunities for others that are involved in marketing system. With a hatchery that will provide quality seedlings, the production will likely increase by 30%, which is substantial to the module income.

6. Issues and Risks

The following are the issues and risks to be considered: peace and order situation in the area; poor quality of fingerlings; inadequate extension services to the farmers; and poor quality of feeds.

7. Cost Estimates

Development of Fish Cages in Selected Communities a/

Inputs	Unit	Total (USD)	
Net /a	meter	8,625	
Seed /b	No.	12,000	
Feed /c	Kg	292,500	
Bamboo	No.	13,375	
Drums /d	No.	9,000	
Timber,etc	No.	4,500	
Anchor/e	No.	220	
Rope /f	meter	475	
TOTAL		340,695	

Annex A.2.4. Development of Nurseries, Hatcheries and Demonstration Farms

1. Project Rationale

The nursery system to be developed in strategic areas will provide a livelihood for conflict-affected persons, who will assist in the rehabilitation of fish stocks in Lake Lanao and the Liguwasan Marsh areas. The demonstration cages, also to be developed in strategic areas, will be a training module for those investors who are embarking on fish cages, fish pens, and land-based aquaculture project.

2. Project Objectives

The primary objectives of the project are to: produce quality fry/fingerlings for aquaculture projects in conflict-affected areas; and rehabilitate dwindling fish stocks in lakes, marshes, and rivers in Mindanao.

3. Design Considerations

The project will be designed to integrate the biological criteria needed to meet the production goals. The water system is also designed to meet the water requirement for efficient operation. Production spaces include features such as algal feed production laboratory, office, and storage room and freezer equipment, of necessary. A module consisting of four fish cages will be constructed in strategic locations around Lake Lanao and Liguasan Marsh. These cages shall be utilized as demonstration farms and/or training sites for practitioners and those who wish to invest in fish cage project.

4. Implementation

The project shall be implemented with the technical assistance from MSU College of Fisheries, BFAR, and the LGUs. The nurseries shall be given as grants to four beneficiaries, who will receive the fry for free from the hatcheries. These beneficiaries shall however release 50 percent of their production to rehabilitate the fish stocks in the first year, 40 percent on the second year, and 30 percent on the third year. Juvenile produce from these nurseries will be sold to fish/cage/pen operators.

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5. Project Benefits

The quality of fingerlings produced from the hatchery will increase the fingerling survival rate to 60 percent from the current rate of about 30 percent, which is expected to double current production levels. With the rehabilitation of the fish stocks from rivers, lakes, and marshes, the small fishermen are expected to have better catch and other value adding enterprises like fish drying for women.

6. Issues and Risks

Incidence of disease may affect the production levels of the program and the unavailability of breeders may also serve as one of the main constraints in program implementation.

7. Cost Estimates

Investment Costs	Unit	Price	Total (USD)
Hatchery			
Building	ls		66,860
Feeds	ls		11,300
Breeder			
Carp	no	35	21,000
Tilapia	no	21	12,600
Endemic species	no	2	12,000
Machineries	ls		5,542
Pipes	ls		10,000
Instruments	ls		16,000
Equipment	ls		1,100
Vehicles	no	25,000	50,000
Maintenance	ls		1,950
Trainings	no	1,200	28,800
TA: Expat	pm	15,000	225,000
Local	ру	2,000	72,000
M00E	.,		
National Staff	ру	5,400	32,400
Technician	ру	3,240	38,880
Honorarium	ру	1,800	21,600
Supplies	ls		8,000
Nursery			
Tanks	no	1,284	61,632
Pumps	no	267	2,136
Aerators	no	215	1,720
Generators	no	450	3,600
Demo Cages	no	790	6,320
Total			710,440

Annex A.3.1. Provision of Draft Animals and Basic Farm Implements

1. Project Rationale

The 9,120 farmer IDPs who lost their draft animals when the hostilities broke out need to be provided with 2730 draft animals, plows and harrows to enable them to immediately return to farming, their main source of livelihood. Their return to normal life would help stabilize peace and order in their communities.

2. Objectives

The objectives of the project are the following: to provide eligible IDPs with draft animals and basic farm implements to enable them to

immediately cultivate crops, their main source of income; to facilitate the eligible IDPs' return to normal farm and community life; and to pave the way to peace and stability in the CACs.

3. Design Consideration

Due to the large number of potential beneficiaries and the limited availability of draft animals, particularly carabaos, the following should be considered:

- Organize the beneficiaries into a cluster of 50 families. Each cluster shall be provided with 15 draft animals. The ratio is suggested based
 on the information that a draft animal can cultivate 3 hectares of farm a year in a double cropping system.
- The inclusion of 12 female draft animals in a module of 15 gives each member an opportunity to own a draft animal, through dispersal of the offspring among them.
- To foster harmony and minimize conflict among the cluster members, the beneficiaries shall be allowed to group themselves into clusters, taking into account the following factors: (a) affinity to each other, either by blood or marriage, (b) proximity of their farms and/or residence, and (c) other relevant issues that may evolve during the discussion.
- The fondness of Maranaws for carabeef as food to celebrate special occasions, like the end of Ramadan and weddings, should be taken
 into account.
- It should also be noted that cattle as a draft animal is more efficient than carabao. Unlike carabao, cattle does not need time to rest or to wallow; carabao wallows 4 to 5 times in a typical working day, to cool off.

4. Implementation

- Coordinate with the crop sub-sector, since the beneficiaries of the draft animals are also farmers.
- Enlist the assistance of the local committees and credible NGOs in the area during the delivery of the animals.
- Arrange with the local and regional DA Offices for supporting veterinary services to the beneficiaries.

5. Project Benefits

A total of 9,120 farm families will be provided with 2,730 draft animals with plows and harrows. Each of the 50 members of the cluster will eventually own a draft animal, through the dispersal of offspring from the 12 females included in the module. Sixty percent (or 8,190 ha) of the total farm area in the 17 identified CACs shall have been cultivated and become productive, as presented in the following table. In terms of area cultivated, the project is expected to benefit about 24,570 hectares.

6. Issues And Risks

The large number of draft animals, ducks and chickens to be purchased and assembled makes suppliers reluctant to serve the order unless prepayment is made, because of the huge amount involved. Thus: identify in advance all the possible sources/suppliers and major traders; inform suppliers of the volume needed and conduct a background check; and limit the amount of the purchase order per supplier.

Suppliers may not be able to deliver animals to CACs sites due to road conditions and security concerns. Thus: specify strategically located dropoff points with facilities to temporarily hold the animals, if necessary; arrangements for vehicles capable of negotiating the roads to the final delivery sites; double-check the health and condition of the animals a day before transport and during loading; assign priority numbers to the beneficiaries for distributing the inputs; raffle off assign animals to randomly assign them to beneficiaries, since the animals, particularly the draft animals, will not be of the same sizes and stature; and the project staff should coordinate the distribution in coordination with the MAO and other units or committees involved in the project.

The Project Management must address the issue of strengthening the capability of the MAOs to deliver extension and veterinary services, including the issue of mobility. Thus: conduct farmer field school (FFS) on prevention and control of common livestock pests; and timely schedule of vaccination and medication including deworming.

There are problems inherent in the process of clustering or grouping of IDPs to share or implement a common project or facility. Thus: the mechanism on the rotational schedule in the use and care of the 15 animals in the cluster of 50 families and the dispersal of the offspring should be thoroughly discussed and understood by the members; a MOA should be prepared and signed by all of the members; and the MOA should include a provision for the formation of a "Crises and Conflict Committee" to resolve problems that may arise among the members.

Monitoring should include seeing to it that the animals are well cared for, not slaughtered to celebrate special occasions or sold. This shall be part of the extension and veterinary services that is rendered by project staff. In effective extension work, there is no substitute to regular farm and home visits.

The direct cost estimate of the project is US\$ 1,126,740.00. The particulars are presented in following Table.

Estimate of Costs: Draft Animals and Farm Implements

Investment Costs	Unit	Total	
		(USD)	
Draft Animals (2 to 3 years old)			
Carabull	hd	36,630	
Caraheifer	hd	138,600	
Bull (broken)	hd	156,450	
Heifer	hd	625,800	
Farm Tools			
Metal Plow (mould board)	unit	81,900	
Metal Harrow (tooth or flat)	unit	81,900	
Medicines			
Abendazole	30 ml pack	5,460	
Total Investments		1,126,740	

a) For 9,120 IDP families; 6,080 upland and 3,648 lowland farmers.

Annex A.3.2. Enhanced Backyard Layer Duck Production

1. Project Rationale

The project is needed to provide additional income to 5,048 farmers and fishermen IDPs residing in the lowlands, marshlands and lakeshores where the environment is endowed with an abundance of natural food for layer duck production. The project, which shall be operated and managed by the housewives as well as in- and out-of-school youth members of the family, will give them the opportunity to earn additional income for the family. Moreover, the demand is high for fresh and salted duck.

2. Project Objectives

The primary objectives of this project are: to provide the eligible IDPs with Backyard Layer Duck Production project as source of additional income and employment to the housewives and other member of the family; to give the housewives and other members of the family the opportunity to earn income for the family; to facilitate the return of the IDPs to normal farm and community life; and to pave the way to peace and stability in the CACs.

3. Design Consideration

- The traditional way of raising ducks is herding them from one field to another to feed and graze on the abundant natural food found in the rice fields. marshlands and lakeshores.
- That women or housewives and the in-and-out of school youths should be involved in the project to give then the opportunity to earn additional income to the family.
- That under the traditional way of raising ducks, one-person can manage to pasture or herd 150 to 200 heads of ducks. Hence, they should be organized into a cluster of 15 families per 220 ducks.
- That to add value to the produce, salted eggs shall be processed.
- The beneficiaries do not have the technical skills and knowledge to operate the project.

4. Implementation

Coordinate and /or request the help of the local committees and the credible NGOs in the area during the delivery of the animals.

b) Unit cost includes delivery/transport cost (Exchange Rate: US\$1.00 = PhP 56.00).

- Arrange with the local and regional DA Offices and Agricultural Colleges for support relative to providing of veterinary services to the beneficiaries.
- Access the training expertise and facilities of the nearby Agricultural Training Institute of DA.

5. Benefits

In addition to the monetary benefits, the home consumption of the broken and non-marketable eggs will increase the protein intake of the family.

6. Issues And Risks

The large number of draft animals, ducks and chickens to be purchased and assembled makes suppliers reluctant to serve the order unless prepayment is made, because of the huge amount involved. Thus: identify in advance all the possible sources/suppliers and major traders; inform suppliers of the volume needed and conduct a background check; and limit the amount of the purchase order per supplier.

Suppliers may not be able to deliver animals to CACs sites due to road conditions and security concerns. Thus: specify strategically located drop-off points with facilities to temporarily hold the animals, if necessary; arrangements for vehicles capable of negotiating the roads to the final delivery sites; double-check the health and condition of the animals a day before transport and during loading; assign priority numbers to the beneficiaries for distributing the inputs; and the project staff should coordinate the distribution in coordination with the MAO and other units or committees involved in the project.

There are problems inherent in the process of clustering or grouping of IDPs to share or implement a common project or facility. Thus: the mechanism on the rotational schedule in the care of the animals in the cluster of beneficiaries should be thoroughly discussed and understood by the members; a MOA should be prepared and signed by all of the members; and the MOA should include a provision for the formation of a "Crises and Conflict Committee" to resolve problems that may arise among the members.

Monitoring should include seeing to it that the animals are well cared for, not slaughtered to celebrate special occasions or sold. This shall be part of the extension and veterinary services that is rendered by project staff. In effective extension work, there is no substitute to regular farm and home visits.

7. Cost Estimates

Investment Costs	Unit	Total (USD)	
Layer Ducks			
Drake (ready to breed)	hd	47,040	
Duck (ready to lay)	hd	338,600	
Layer Mash/a	50 kg bag	63,274	
Processing Equipment			
Salted Eggs			
Processing Equipment	set	33,600	
Medicines			
Piperazine	200 tab pack	9,300	
Sulfaquinoxiline solution	liter	3,360	
Oxytetracycline powder	100 g pack	4,032	
Total Investments		499,206	

For 5,048 IDP families, 3,648 lowland farmers and 1,400 coastal fishermen.

/a $\,$ Unit cost includes handling and transport of ducks (FOB CAC).

Annex A.3.3. Enhanced Backyard Native Chicken Production

1. Project Rationale

The 9,120 farmers and 2,100 fishermen IDPs who lost their livelihoods when the hostilities broke out need to be provided each with 13 pullets and 2 cockerels to enable them to earn additional income, capitalizing on previous experience and knowledge in backyard chicken raising and the low input requirements of native chicken. This is particularly significant in view of the very low resource and capital base with which they will rebuild their livelihoods and return to normal life. Once they do, peace and order in their communities is expected to be slowly stabilized.

2. Project Objectives

The primary objectives of this project are: to provide eligible IDPs with native chicken stock as supplementary source of income; to provide housewives and the in- and out-of-school youth the opportunity to contribute additional income to the household; to facilitate the eligible IDPs' return to normal farm and community life; to pave the way to peace and stability in the CACs.

3. Design Consideration

- Native chicken feeds by scavenging on the abundant natural foods found in the farmstead and surrounding grasslands.
- A family-based project to be provided to the housewives and the in-and-out of school youth members of the family.
- Native Chickens are susceptible to the yearly occurrence of diseases, particularly, New Castle Disease or Avian Pest, which occurs during the start of the rainy season or shortly after the end of the dry season.
- Native chickens sit on their eggs to hatch.
- Deworm and vaccinate the chickens against New Castle disease before delivery.
- Increasing the productivity would require these interventions; upgrading through the introduction of preferably the local "Pawakan", also known as "Saigon" or "Basilan" supplemental feeding and early waning.

4. Implementation

Enlist the assistance of the local committees and credible NGOs in the area during the delivery of the animals. Arrange with the local and regional DA Offices for the support veterinary services and to supervise the vaccination and medication of the chickens.

5. Benefits

A total of 11,220 farm families will be provided with 168,300 heads of chicken.

6. Issues And Risks

The large number of draft animals, ducks and chickens to be purchased and assembled makes suppliers reluctant to serve the order unless prepayment is made, because of the huge amount involved. Thus: identify in advance all the possible sources/suppliers and major traders; inform suppliers of the volume needed and conduct a background check; and limit the amount of the purchase order per supplier.

Suppliers may not be able to deliver animals to CACs sites due to road conditions and security concerns. Thus: specify strategically located drop-off points with facilities to temporarily hold the animals, if necessary; arrangements for vehicles capable of negotiating the roads to the final delivery sites; double-check the health and condition of the animals a day before transport and during loading; assign priority numbers to the beneficiaries for distributing the inputs; and the project staff should coordinate the distribution in coordination with the MAO and other units or committees involved in the project.

Investment Costs	Unit	Total (USD)	
Chickens			
Cockerel (ready to breed)	hd	89,600	
Pullet (ready to breed)	hd	437,580	
Medicines			
Piperazine	200 tab pack	21,050	
Sulfaquinoxiline solution	150 ml bot	22,440	
Oxytetracycline powder	20 g pack	11,220	
Total Investments		581,890	

- a) For 11,220 IDP families, 9,120 upland farmers and 2,100 coastal fishermen
- b) Unit cost includes delivery/transport cost
- c) Exchange rate: US\$1.00 = PhP 56.00

Annex A.4.1. Small Scale Irrigation

1. Project Rationale

The conflict affected areas is presently faced with the rehabilitation not only of the lives of the people affected but also the construction/ rehabilitation of the physical infrastructure. Agricultural productivity has gone down and will continue to do so due to a large extent to the rapid deterioration of the already inadequate irrigation systems. The challenge therefore is to enhance agricultural productivity and to increase income in the areas and contribute to the sustainability of the peace efforts.

2. Project Objectives

The project aims to construct and/or rehabilitate about 30 schemes that will irrigate about 1,600 ha. Small scale irrigation will be identified, prepared and implemented to increase the productivity of farmer-beneficiaries.

3. Design Consideration

The respective Regional Officers of NIA will prepare the detailed engineering design for each approved schemes in close consultation with the respective IAs, LGUs, designated NGOs, possibly, BAA, to ensure that the wishes of the farmers and beneficiaries are respected. Review procedures will be developed for the design stage to ensure stability of the structures and the adequacy of irrigation water even during dry season and the design incorporates safeguards to mitigate negative environmental impacts.

To ensure low operation and maintenance cost, the schemes will be by gravity. Generally, canals will be earth canals, however, where the section is critical, lined canals will be considered. Sprinkler type for water distribution will be considered to areas exclusively devoted to high value vegetables (cabbage, lettuce, etc.)

4. Implementation

Subject to any further agreement between the Project Management, GRP and concerned stakeholders, the following implementation arrangement is recommended. It is presumed that a "Management Office" will be organized to over-see the implementation of the sub-sector projects and will be responsible for the over-all coordination and the disbursement of funds. The Office will approve specific schemes for implementation on the recommendation of NIA. The Office will advance to NIA an amount to be agreed upon and subsequent releases will be made on a duly approved liquidation statement. NIA, through its Regional and/or Provincial Offices will execute the construction/rehabilitation of the CIS, premised on this mandate and technical expertise.

5. Benefits

With the operation of CIS, irrigation water will be available throughout the year for cultivation. With this condition, two crops for rice are assured. The production of high-value vegetables can be promoted. Productivity is increased and yield is enhanced. It is expected the cropping intensity should be a minimum of 150 percent for rice and 180 percent for vegetable. With the present depressed productivity in rice production, a substantial increase in yield per hectare is foreseeable. Increased productivity means increased income; more produce for commence means more disposable income.

6. Issues And Risks

The major risks associated with implementation of the CIS are the technical and financial capability of the IAs to maintain on a sustainable basis the completed works. Participatory approach will involve the IAs from the identification of the specific sub-project to completion giving the IAs opportunities to be familiar with and learn about the project. The NIA process of project implementation includes institutional development where NIA is required to organize the IA and to provide the requisite training. NIA is required to provide technical assistance to the IAs and even financial assistance in case of major repairs.

The capacity of the Provincial Irrigation Office or even the Regional Irrigation Office is also at risk under the present conditions. Experience shows that a number of projects remain uncompleted, substandard and the funds not properly expended. The Oversight Office, the LGUs, the NGOs and the beneficiaries will closely monitor the work progress and fund expenditures.

7. Cost Estimates

Sub- component	Unit	Total (USD)	
I. Small Scale Irrigation	ha		
Targets-Estimated Cost			
Construction Target Cost	ha	2,640.00	
Community Mobilization		160.00	
Implementation Schedule			
Pre-Construction			
Construction			
Community Mobilization			
Total		2,800.00	

1/ Indicate the basis of calculation, i.e., total hectare x seeds/ha.

2/ Estimated based on xxx ha/animal.

Annex A.4.2. Potable Water Supply

1. Project Rationale

Family income in the conflict affected areas has gone down for various reasons and health conditions negatively affected. Presently, most of these communities suffer from inadequate or unsafe drinking water in a worse situation than before the conflict. Sickness further drains the low income of the residents and furthers lowers productivity. To promote a healthy community and in the process increase productivity, health must be safeguarded. One safeguard to promote health is the supply of potable water to the community. Supply of potable water to communities is also a time-saver and the time save may lead to more production.

2. Project Objectives

The objective of the PWS program is to construct water systems and/or rehabilitate existing ones, to supply safe drinking water and for other domestic use, in the conflict affected areas, to about 1,785 households. The delivery system will either be Level I or Level II. A Level I facility normally serves about 15 to 30 households, supplying 30 to 50 liters per capita per day, with an outreach of not more than 250 meters. A Level II system (communal faucet system) consists of a source, a reservoir, a piped distribution network and communal faucet located not more than 50 meters from the farthest household, usually serving an average of 50 households.

3. Design Consideration

The respective Provincial Engineering Office of the LGU will prepare the detailed engineering design for each approved PWS project in close consultation with the respective RWSA/BWSA and designated NGOs to ensure that the wishes of the beneficiaries are respected. Review procedures will be developed for the design stage to ensure that water supply even during dry season is adequate and that the rights of other water users are not infringed. Safeguards will be incorporated to mitigate negative environmental impacts. Storage tank or reservoir will be designed to prevent contamination. To ensure low operation and maintenance costs, the system will be by gravity. All main lines, distribution lines and lateral lines will be G.I. pipes. Service areas for each outlet — faucet will be a maximum of 50 meters so that no household will be further away from the faucet.

4. Implementation

Implementing will be by "Participatory Approach." It is presumed that a "Management Office" will be organized to over-see the implementation of the potable water system projects and will be responsible for the over-all coordination and the disbursement of funds. It is also presumed that the Office will approve specific systems for implementation on the recommendation of the Municipal Engineering Office/Provincial Engineering Office. The Office will advance an amount to be agreed upon by the Oversight Office and the Implementing Office, and subsequent releases will be made on duly approved liquidated statements. Either the Provincial Engineering Office or the Municipal Engineering Office will be designated as the executing office for the Potable Water Supply (PWS) projects, considering their mandate and capacity. Experience show that the Provincial Office is in a better position to execute the construction/rehabilitation of PWS, but considering the present situation, there may be a need to strengthen the office with consultants.

5. Benefits

A healthy community will be more productive and potable water promotes health while it minimizes water diseases. A potable water supply system will save time otherwise spent to secure the daily family needs for water. The time saved, when put to productive effort, will impact on increased production. Health is wealth, the adage goes. Potable water promotes health, which means increase in productivity and income while it minimizes the occurrence of water-borne diseases which means savings on the medical expenses and adds some to the disposable income. Increase in disposable income associated with a healthy and productive community, is one principal benefit from the sub-sector and subsequently an improvement in the quality of life which is a large factor in the alleviation of poverty. Poverty being one main reason for the conflict, once alleviated there is hope for peace.

6. Issues And Risks

The major risks associated with implementation of PWS are the technical and financial capability of the RWSA/BWSA to maintain on a sustainable basis the completed project. Participatory approach will involve the RWSA/BWSA from the identification of the specific sub-project giving them opportunities to be familiar with and learn about the project. Training will have to be given to the beneficiaries on simple ways in organization and management. Repair tools, at least a pipe wrench and pipe threader will be supplied. The PEO/MEO will be required to extend technical assistance if not financial assistance in case of major repairs.

The capacity of the PEO/MEO to implement the project is also at risk under the present situation. Experience show that there are a number of projects that remain uncompleted or substandard or the funds not properly utilized. The beneficiaries, NGOs and the Oversight Office will closely monitor the work progress and the fund expenditures. The beneficiaries will be involved in the prosecution of the project.

Sub- component	Unit	Total (USD)	
II. POTABLE WATER			
Targets-Estimated Cost Community Mobilization Implementation Schedule Pre-Construction Construction Community Mobilization	ha	482.00 18.00	
Total		500.00	

1/ Indicate the basis of calculation, i.e., total hectare x seeds/ha.

2/ Estimated based on xxx ha/animal.

Annex A.5.1. Construction of Solar Dryers

1. Project Rationale

The introduction of farm inputs like improved varieties, fertilizers, and irrigation water shall dramatically change the present practices of farmers and increase production resulting in inadequacy of the present post-harvest facilities. Inadequate and antiquated post-harvest facilities would result in losses in quality and quantity of crops.

2. Project Objectives

The proposed Project aims at reducing post-harvest losses among farmers in the conflict-affected municipalities and improving food security in the community. Specifically, the Project shall construct and install 420 m² solar drying pavement and turn over the facilities to qualified farmers' groups.

3. Design Consideration

In identifying the post-harvest facilities, special considerations include: the simplicity of use of the solar dryer, low level and ease of maintenance and simplicity of the design. For these reasons, the consultants recommend that solar dryers be available in all 17 municipalities in conflict-affected communities.

4. Implementation

Target farmer beneficiaries shall have established associations or groups. In case no formal organizations exist, the farmers shall organize, register with the CDA and submit proposal for the grant of the solar dryers. Farmers shall ensure that land for constructing solar dryers shall be available with formal deed of donation prior to the construction.

5. Benefits

Farmer beneficiary shall prevent physical and economic losses estimated at 23% of the total production during the entire chain of post-harvest operation, equivalent to 990 metric tons. Furthermore, the dryer shall avoid losses in quality due infestations of microorganisms resulting in the yellowing of the grains that can lower the prices of paddy.

6. Issues And Risks

The following issues need to be considered: unavailability of land; and difficulties to form groups and agreement on utilization.

Item Investment Costs	Proposed Site	Total (USD)	
Solar dryer 420 m² Installation costs, 15%	All towns	170,000 25,500	
Grand Total:		195,500	
^{1/} PhP 56.00 = USD1.			

Annex A.5.2. Women's Household Food Processing

1. Project Rationale

Abundant fruits in the areas provide opportunities for women groups for processing to increase value-added. Thus, processing fruits and vegetables shall add value and increase the marketable surplus thereby increasing income among farm families. Moreover, the establishment of **women's household food processing enterprises** provides opportunities for women to explore other potentials.

2. Project Objectives

The general objective of the project is to increase value-added to rural communities and generate employment among rural women. Specifically the Project shall: dry banana and mango chips; and process fruits and vegetables to marketable snack foods and juice concentrates.

3. Design Consideration

About twenty (20) women in each municipality shall organize into groups. Women in the first 10 municipalities in the 1st year of implementation shall organize by themselves and register with Cooperative Development Authority (CDA) Offices. Upon registration, training on food processing shall ensue whilst at the same time, procurement of basic equipment and utensils for food processing shall advance. On the 2nd year of implementation, women in the next seven municipalities shall proceed with organization and registering with the CDA.

4. Implementation

An initial of 20 women shall organize into association or group and register with the CDA, and undergo training on basic food processing course. Land to set up the dryer shall be available free of charge as arranged by them.

5. Benefits

Gross profit from marketing dried mango and banana chips range from PhP 650 to PhP 950 per kg of raw materials (PhP 10/kg). In processed snack foods, gross profits may range from PhP 700 to PhP 1200 per kg of raw materials. Thus, dried chips alone will provide a potential income for women of about PhP 6,500 in 2 days or PhP 3,250 per day. Higher income will accrue by processing high value crops like mango, yam (ubi), and spices. The project when fully implemented will generate farm level employment of about 340 women, initially, that will increase when production expands. The project shall contribute to food security in the communities by making available processed food products, especially, among school children at affordable prices.

6. Issues And Risks

The following issues should be addressed in implementation: family conflicts may arise as farmers want women to stay at home and take care of family matters; conflicts due to religious beliefs may arise in areas where various sects exist resulting in the birth of new conflicts; and difficulties to form women groups.

Item Investment Costs	Proposed Site	Total (USD)	
Dryer & utensils	All towns	51,000	
Women's Coop Store		25,500	
Working Capital		42,500	
Subtotal		119,000	
Consultancy services		5,000	
Installation costs, 15%		18,225	
Grand Total		142,600	
PhP 56.00 = USD1.			

Annex A.5.3. Women's Household Meat Processing

1. Project Rationale

The raw meat materials are abundant and available in the municipalities, and market demands for processed meat products are high in key cities of Mindanao. Processing and marketing of processed meat products will provide income to women and their families. More than this, the establishment of **women's household meat processing enterprises** provide opportunities for women to build local institutions which will be fundamental for future development.

2. Project Objectives

The general objective of the Project is to provide income and employment to women by processing meat produced by farmers. Specifically the Project shall: process livestock, poultry, and fishery meat to marketable products; and market the products nearby and potential markets.

3. Design Consideration

About twenty (20) women in each municipality shall form a group or association. Women in the first 2 municipalities in the 1st year of implementation shall organize and register with Cooperative Development Authority (CDA) Offices. Upon registration, training on food processing shall proceed whilst at the same time procurement of basic equipment and utensils for food processing shall advance. On the 2nd year of implementation, women in the next two municipalities near markets shall proceed with organization, registering with the CDA, and training on the basic meat processing.

4. Implementation

Participating women, 20 in each of the four municipalities adjacent to key cities of Iligan, Cotabato, Kidapawan, and Pagadian shall organize into associations or groups, register with the CDA, and attend training on meat processing. They shall arrange for the donation of the land for setting up the equipment and store.

5. Benefits

The processing of about 100 kg per day of meat to various products will contribute about gross income PhP 2,200 (US\$40.00) at average price of PhP 220/kg of finish products. This translates into PhP 110.00 daily gross income resulting in net income per woman of about PhP 55.00. The project when fully implemented will generate employment of 80 women. The project shall contribute to food security in the communities by making available processed food products, especially, among school children at affordable prices.

6. Issues And Risks

The following issues need to be considered: conflicts in the family may arise due to traditional notion that women must stay at home to take care of family matters; conflicts due to different religious beliefs in the role of women; and difficulties to form women groups.

Proposed Site	Total	
	(USD)	
Kauswagan,	48,000	
Marawi		
Madalum,	6,000	
Labangan		
	10,000	
	64,000	
	5,000	
	10,350	
	79,350	
	Kauswagan, Marawi Madalum,	(USD) Kauswagan, 48,000 Marawi Madalum, 6,000 Labangan 10,000 64,000 5,000 10,350

Annex B AGRIBUSINESS AND MARKETING PROPOSALS

Annex B1. Community-Corn Central Program

1. Rationale

Corn is a major feed ingredient for the livestock and poultry industries. There is currently a one million ton gap for corn and substitutes for feed ingredient. There is a need to improve farm incomes through quality upgrading and value addition for corn. At present, there are private sector-managed corn centrals operating in neighboring Bukidnon. An economic size corn central can serve 500 hectares each crop, or 1,000 hectares a year, in strategically located areas. The CACs are significant producers of corn. Price and quality have been affected at harvest due to the high moisture content and the lack of post harvest facilities. Farmers are also pressured to sell corn quickly to pay off debts.

2. Objectives

To increase product quality and storability of corn in CACs with large corn areas

3. Design Considerations

The following principles will be considered in the project design market driven, accessibility to trade centers, community-based, large surplus production, profitability/sustainability, flexible scale and phasing if warranted, and potential number of beneficiaries.

4. Implementation

Consultants will undertake project management in the early stages. The project will be turned over to a community-based organization. The services of a local NGO with a track record are needed for organizational strengthening and organization of farmer groups.

5. Benefits

The two project sites will benefit about 1,000 farm families. The project is expected to improve corn quality in the CACs. It will also allow longer storage life of grains, and for the beneficiaries to sell their produce at the appropriate time. It will increase farm income due to improved corn prices. The project is expected to help reduce poverty in the CACs and increase multiplier effects on non-farm activities

6. Issues and Risks

The delay in organizing the beneficiaries will slow down project implementation. There is need to have an intensive capability building at least six months prior to the start of the project as well as management assistance in the early years of operation.

Table B1: Corn Central Program

	Unit	Physical	Unit Cost	Total	
		Quantity	(USD)	(USD)	
INVESTMENT COSTS					
Land Acquisition	ha	2	3,570	7,140	
Warehouse Solar Dryer	sq.m	1,000	90	90,000	
Tractor		2	44,640	89,280	
Equipment and Building		2	60,710	121,420	
Sheller		4	3,570	14,280	
Truck		2	17,860	35,720	
Total Investment				357,840	
RECURRENT COSTS					
Working Capital (2 centrals)		2	26,970	53,940	
Total Recurrent				53,940	
Grand Total				411,780	
te: Total of 2 Centrals					
urce: Greg Macabudbod					
Project Coordinator					
National Agribusiness Dev	elopment Ce	nter Foundation			
Cagayan de Oro	,				

Annex B.2. Compact Rice Mill Program

1. Rationale

Most of the CACs grow rice. A compact rice mill has a capacity of 1 ton palay per hour with mill recoveries of 68% or more compared to the *cono* mills with 50 to 60%. This is good for about 250 ha per harvest period of 90 days.

2. Objectives

To enhance value addition in the rice communities by increasing milling recovery.

3. Design Considerations

The following concerns should be considered: market driven, accessibility to trade centers, capacity of people to provide counterpart in cash or kind, access to rice mill maintenance service, community-driven, and potential number of beneficiaries

4. Implementation

The facility will be owned and managed by producer groups (cooperatives or farmer organizations). The services of a local NGO with a track record are needed to organize farmers. Financing arrangement and conduit will be finalized during preparation missions.

5. Benefits

The project will benefit about 7,500 rice farmers assuming 250 farms per unit. The project is expected to increase the production of quality rice as the milling efficiency is expected to increase from about 60% to as much as 68%. Farmers' income will increase with the value adding program. Food security with CACs will improve as palay is milled in the locality.

6. Issues and Risks

Implementation delay due to delays in organizing farmers' groups.

7. Cost Estimates

Table B2: Rice Mill Program

l	Jnit Physical Quantity	Unit Cost USD	Total (USD)	
INVESTMENT COSTS Mini rice mill package Total Investment	30	30,360	910,800 910,800	
RECURRENT COSTS Technical Services (10%) Total Recurrent			91,080 91,080	
Grand Total			1,001,880	
Note: One mini-rice mill = Php 1.2 m Annual support solar, dryers, small warehouse = 0.5 m Php 1.7 m	illion			

Annex B3. Sugarcane Area Expansion

1. Rationale

Sugarcane has a ready market in Mindanao. There are four sugar mills near the project sites and a muscovado processing plant in Matalam. These facilities are operating below capacity.

2. Objectives

To promote sugarcane planting as alternative or supplementary crop of rice and corn farmers.

3. Design Considerations

- Market driven
- Accessibility to sugar mills
- Capacity of people to provide counterpart in cash or kind
- Consolidation of farmers for mechanization
- Community-driven
- Potential number of beneficiaries

4. Implementation

Technical services will be hired to assist in organizing growers. Financing package has yet to be firmed up.

5. Benefits

The project will benefit about 1,000 families. Expected benefits include an increase in production of sugarcane, capacity utilization of the mill and increased farm incomes. Farmers will also be exposed to "modern" farm practices.

6. Issues and Risks

Delay in organizing growers as access to financing will delay implementation. The projected farm yield may not be attained due to poor crop management.

Table B3: Sugarcane Area Expansion

	Unit	Total	
		(USD)	
INVESTMENT COSTS			
Crop Establishment	ha	982,300	
Total Investment		982,300	
RECURRENT COSTS			
Support Services (10%)		102,695	
Total Recurrent		102,695	
Grand Total		1,084,995	
rce of Crop Establishment Cost: Mr. Archi	medes Amarra. Executive Director		

Annex B4. Cassava Area Expansion

1. Rationale

Cassava chips has a ready market in Mindanao. There are processors like San Miguel Corporation which require cassava for different processes. There is a cassava starch processor in Sultan Kudarat town, Maguindanao (Lamsan Trading) and in Malabang, Lanao del Sur (Matling Agro-industrial)

2. Objectives

To expand cassava production of coconut and corn farmers. Intercropping of coconut is part of the package.

3. Design Considerations

- Market driven
- Accessibility to sugar mills
- Capacity of people to provide counterpart in cash or kind
- Community-driven
- Potential number of beneficiaries

4. Implementation

Farmers in the project sites will be organized preferably by an NGO. Growing of cassava is a good option provided best practices and good management are observed. Some processors may consider growership arrangement. The implementation and financing arrangement will be defined during the preparation mission.

5. Benefits

The project will benefit some 500 families. Among the expected benefits are increased supply of cassava chips for processing, increased incomes for small farmers and increased land utilization.

6. Issues and Risks

Delays in organizing the beneficiaries and packaging financing could delay implementation. Also, acceptance of cassava as an alternative crop could be a constraint.

Table B4: Cassava Area Expansion

	Unit	Total (USD)	
INVESTMENT COSTS			
Area	ha	445,000	
Total Investment		445,000	
RECURRENT COSTS			
Support Services (10%)		44,500	
Total Recurrent		44,500	
Grand Total		489,500	
PhP 56.00 = USD1.			

Annex B5. Growership Program (Oil Palm)

1. Rationale

Contract growing is well established in Mindanao from asparagus to banana to oil palm. Growership means that the farmers will provide land and labor to grow oil palm. The company will buy the produce, and in many cases provide the planting materials, technical and management assistance and markets. The growers will provide the land, labor and some farm inputs.

2. Objectives

To promote oil palm plantings to increase farm incomes of selected CACs.

3. Design Considerations

- Market driven
- Accessibility to palm oil mills
- Capacity of people to provide counterpart in cash or kind
- Organized clusters to facilitate fruit transport
- Community-based
- Potential number of beneficiaries

4. Implementation

Implementation Mechanisms: An NGO will assist in farmer selections and organization. The Firm(s) will provide on-farm technical services plus planting materials (e.g. oil palm), Quedancor, Landbank and/or Islamic Development Bank and other sources will provide long-term financing. LGU could provide infrastructure support for access roads. Implementation and financing arrangements will be firmed up during project preparation.

5. Benefits

Some 1,000 families will be benefited. Among the benefits include increased production of oil palm and increase in diversified income away from traditional crops. Oil palm has also beneficial effects in providing tree cover. The women could be provided livelihood by utilizing the palm fronds for weaving into walls for housing.

6. Issues and Risks

Small farmers may be hesitant to be grower as oil palm has long gestation. Positive cashflow will only be possible in the fourth or fifth year from planting. Long-term financing access from banks is a constraint.

Table B5: Growership Program (Oil Palm)

	Unit	Total	
		(USD)	
INVESTMENT COSTS			
Crop Establishment	ha	124,700	
		249,400	
		283,800	
		250,000	
Total Investment		907,900	
RECURRENT COSTS			
Support Services (10%)		93,915	
Total Recurrent		93,915	
Grand Total		1,001,815	

Note: Phasing of expenditure per ha (land preparation, seedlings, interest and labor) Source: Agunil (September 2004)

Annex B6. Promoting Fruit Production: Focus on Cardava

1. Rationale

Cardava has a ready market in Mindanao. Mindanao is the main source of banana chips exports. There are at least 20 banana chips processors already operating in the area. A mango fruit processor is also located in Davao City.

2. Objectives

To promote/expand plantings of Cardava banana to supply banana chip plants.

3. Design Considerations

- Market driven
- Accessibility to banana chip plants
- Capacity of people to provide counterpart in cash or kind
- Community-based
- Potential number of beneficiaries

4. Implementation

The smallholders will be organized in selected barangays preferably by an NGO. Good planting materials and farm inputs will be provided. Collection and transport will be organized or linked with traders. Implementation and financing arrangements will be defined during preparation missions.

5. Benefits

Some 1200 families will be benefited. Expected benefits include increased supply for banana chip exports and increased farm income. Banana is a good cover crop and a good source of carbohydrates.

6. Issues and Risks

Delays in organizing farmers and accessing financing of inputs will cause implementation delays.

7. Cost Estimates

Table B6: Cardava Area Expansion

	Unit	Total (USD)	
INVESTMENT COSTS			
Crop Establishment	ha	804,000	
Total Investment		804,000	
RECURRENT COSTS			
Support Services (15%)		120,600	
Total Recurrent		120,600	
Grand Total		924,600	

Note: Unit cost of crop establishment: Php 30,000/ha (US\$ 536/ha)

Source: UA&P-CFA Data Bank

Annex B7. Promoting Tree Plantations: Timber Species (Gmelina and Rubber)

1. Rationale

Most of the CACs have the natural resource endowment (soils and climate). Planting of timber species (i.e. *gmelina*) is attractive given the growing market for pallets and housing construction products (doors, mouldings, jams).

2. Objectives

To promote tree plantings in corn and rice areas and utilize idle and underutilized lands.

3. Design Considerations

- Market driven
- Accessibility to wood processing plants
- Capacity of people to provide counterpart in cash or kind
- Community-based
- Potential number of beneficiaries

4. Implementation

An NGO will assist in beneficiary search as well as technical support. Quedancor, Landbank, Islamic Bank and other sources will be tapped to provide long-term financing. LGU would provide infrastructure support for access roads. The full financing and implementation package must be addressed during the preparation missions.

5. Benefits

Some 500 families will be benefited from tree planting. The following are some of the other benefits: increase timber production of renewable species; pallets from renewable species is now required in EU; increased farm income; increased employment in wood processing plants; improved environment with increased forest cover.

6. Issues and Risks

Adoption by small farmers could be limited due to the 6 to 7 year gestation of the trees. Financing access will be a constraint. Leasing idle and public lands could provide impetus.

7. Cost Estimates

Table B7: Promoting Tree Plantation (Timber Species [i.e., gmelina] and Rubber)

	Unit	Total	
		(USD)	
INVESTMENT COSTS			
Crop Establishment	ha	95,900	
		88,000	
		80,500	
		117,000	
Total Investment		381,400	
RECURRENT COSTS			
Technical Support (10%)		41,065	
Total Recurrent		41,065	
Grand Total		422,465	
:: Armando Sucgang, Area Head, C	entral Mindanao		
GEM/USAID Program			
Cotabato City			

Annex B8. Seaweed Area Expansion

1. Rationale

Seaweed is largely cultured in Mindanao accounting for about 70% of total output. The balance are scattered across Southern Luzon and the Visayas. More than 7,000 hectares of shallow coastal waters are being farmed in the country. The largest concentrations are in Sulu, Tawi-Tawi, and Zamboanga. There are already growing areas in almost all coastal areas in the region

2. Objectives

To increase seaweed production in coastal communities.

3. Design Considerations

- Market driven
- Accessibility to trade centers
- Capacity of people to provide counterpart in cash or kind
- Community-based
- Potential number of beneficiaries

4. Implementation

The key is to organize producers in a few coastal communities preferably by an NGO. Implementation and financing arrangement will be firmed up during the preparation mission.

5. Benefits

The project can benefit about 1,000 families. Among the benefits are increased supply of seaweeds and increased farm incomes. The project will stabilize incomes as seaweeds can be harvested every 45 days.

6. Issues and Risks

Site selection and organizing the coastal communities are challenges. To mitigate these, it is preferable to expand in existing areas.

7. Cost Estimates

Table B8: Seaweed Area Expansion for 500 Families

	Unit	Total (USD)	
INVESTMENT COSTS			
Crop Establishment	no. of families	268,000	
2 rafts/family			
Dryers		89,300	
Total Investment		357,300	
RECURRENT COSTS			
Technical Support (10%)		35,730	
Total Recurrent		35,730	
Grand Total		393,030	
Note: One family = $2 \text{ rafts } (4m \times 80m \text{ each}) =$	= Php 30,000		

Note: One family = $2 \text{ rafts } (4m \times 80m \text{ each}) = Php 30,000$ Bamboo slots dryer = 5 families (500 sq.m.) = Php 50,000/unit

Source: Alfredo Isidro, Aquaculture Enterprise Specialist

GEM II Program/USAID Zamboanga City

Annex B9. The Big Push Program

1. Rationale

To have a large impact on the peace dividend, a **large showcase project** is a strategic imperative. This will be a large project by Philippine standard.

2. Objectives

To develop 10,000 hectares of oil palm areas to benefit some 5,000 families in MILF-influenced communities.

3. Design Considerations

The following elements will be considered in the implementation: accessibility to palm oil mills; centralized management; top political commitment; and potential number of beneficiaries.

4. Implementation

- An NGO or group of NGOs will be employed for social preparation and land consolidation.
- A plantation contractor will be employed to develop the project over 4 years. The beneficiaries will be absorbed as farm workers during the development stage. A funding agency along Islamic banking lines will be explored.
- Top level commitment is imperative.
- The project will be centrally-managed in the early years along FELDA or FELCRA (Malaysia) experience. The national government will be tapped to improve the access roads to plantations. Housing and community facilities are envisioned under a separate funding stream.

5. Benefits

About 5,000 families and will provide good incomes starting four years from planting. Increased oil palm production. Increased farm incomes in CACs. Large multiplier effects on support and non-farm activities. Foreign exchange savings (reduced palm oil imports).

6. Issues and Risks

The challenges include resolving the unclear property rights, consolidating the lands into economic sizes, and accessing long term equity or financing. However, the project is worth the risks given the direct impact (on the ground) and the multipliers, e.g. economic activities as well as widespread publicity.

7. Cost Estimates

Table B9: Big Push Program

	Unit	Total	Unit Cost	Total (USD)	
INVESTMENT COSTS					
Crop Establishment	ha	2,000		2,500,000	
		3,000		3,750,000	
		5,000		4,730,000	
Sub-Total		10,000	1,250	10,980,000	
Physical Contingency (5%)				549,000	
Total Investment				11,529,000	
RECURRENT COSTS					
Technical Services (10%)				1,152,900	
Total Recurrent				1,152,900	
Grand Total				12,681,900	

Note: A nursery development in Year 2 in lieu of seedling purchase from private firm is an option.

Source: CK Chang, General Manager

Agumil Group Davao City

Annex C RURAL INFRASTRUCTURE PROPOSALS AND INDICATIVE COST

IMMEDIATE NEEDS (YEARS 1 TO 2)

Based on the recommended selection criteria above, "Quick Win" proposals are recommended to be implemented in visited sample sites with identified specific priorities through community consultations. These would cover critical access infrastructure, provision of potable water supply systems, critical health and educational facilities, core shelter to IDPs and rehabilitation or restoration of war-damaged mosques and madaris.

These would require an estimated funding support of about USD 5.60 million, the summary breakdown of which is as follows:

Project	Physical Target	Average Unit Base Cost (US \$)	Estimated Base Cost (US\$ '000)	Remarks
1. Access Infrastructure				
Barangay road construction	35 kms	26,790/km	937.65	7 barangays
Barangay road rehabilitation	165 kms	17,860/km	2,946.90	23 barangays
Bridge construction	45 lm	2,150/lm	96.75	3 barangays
■ Rock causeway	550 lm	360/lm	198.00	2 barangays
■ Timber fish port	100 lm	150/lm	15.00	1 barangay
2. Potable Water Supply				
Spring development (L-II)	27 units	15,540/unit	419.58	24 barangays
Deep well (L-II)	6 units	17,860/unit	107.16	6 barangays
Pitcher pump (L-I)	15 units	900/unit	13.50	1 barangay
3. Health Facilities				
Municipal health center rehab.	1 unit	-	53.57	1 barangay
■ BHS construction (64 sq.m.)	19 units	8,930/unit	169.67	19 barangays
Individual Latrines	50 units	180/unit	9.00	1 barangay
4. Educational Facilities				
School bldg. const. (81 sq.m./CL)	57 CL	8,040/CL	458.28	16 barangays
School bldg. rehabilitation	10 CL	4,470/CL	44.70	2 barangays
Day Care Center (60 sq.m.)	1 unit	8,930/unit	8.93	1 barangay
5. IDP Housing	122 units	450/unit	54.90	3 barangays
TOTAL			5,534	51 barangays

Note: USD 1 = PhP 56.00

It should be noted that these sub-projects are those that were identified and prioritized by the communities in the 12 barangays of 12 municipalities visited by the Rural Development Team and those that meet the recommended selection criteria above. These are also inclusive of the additional six municipalities and 39 barangays that were represented during the consultations.

It is recommended though that these sub-projects be subjected to actual field validation and reconfirmation prior to its approval for funding support.

SHORT TO MEDIUM TERM TARGETS (YEARS 2 TO 6)

Recommended Short to Medium Term Targets in 650 Barangays

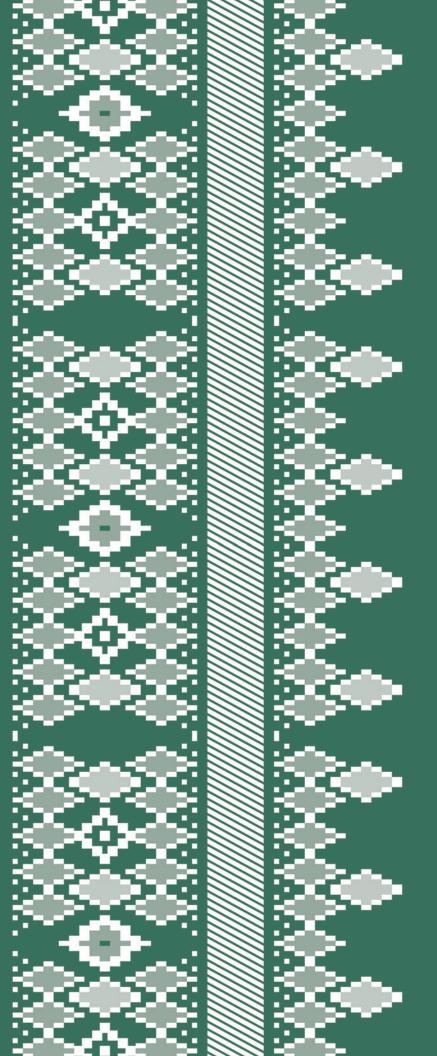
Project	Physical Target	Average Unit Base Cost (US \$)	Estimated Base Cost (US\$ '000)	Remarks
1. Access Infrastructure				
Barangay road construction	650 kms	26,790/km	17,413.50	- Barangay access
Barangay road rehabilitation	1,000 kms	17,860/km	17,860.00	infrastructure to be
Bridge construction	2,500 lm	2,150/lm	5,375.00	prioritized over FMR
■ Rock causeway	500 lm	360/lm	180.00	- Intended for coastal
Timber fish port	3,300 lm	150/lm	495.00	barangays
2. Potable Water Supply				
Spring development (L-II)	280 units	15,540/unit	4,351.20	- To be packaged with
Deep well (L-II)	80 units	17,860/unit	1,428.80	individual latrines if
Pitcher pump (L-I)	780 units	900/unit	702.00	needed
3. Health Facilities				
■ BHS construction (64 sq.m.)	340 units	8,930/unit	3,036.20	- Barangay clustering recommended
4. Educational Facilities				
School bldg. construction (81 sq.m./CL)	860 CL	8,040/CL	6,914.40	- To accord highest
School bldg. rehabilitation (81 sq.m./CL)	1,700 CL	4,470/CL	7,599.00	priority to war-
■ Day care center (60 sq.m.)	65 units	8,930/unit	580.45	damaged facilities
5. IDP Housing	5,300 units	450/unit	2,385.00	
6. Large-scale irrigation				
RIP construction	12,350 ha	2,000/ha	24,700.00	- Subject to
 RIS rehabilitation and expansion 	9,530 ha	1,500/ha	14,295.00	confirmation by NIA
TOTAL			107,315	

Note: USD 1 = PhP 56.00

The identified risks and possible constraints are as follows:

- Disturbance of the current peace and order situation in some municipalities;
- Political interference;
- Lack of LGU capability;
- Absence of governance in some municipalities;
- The occurrence of family feud (rido);
- Security problems from third-party groups;
- Distribution/Allocation of minimal resources;
- Acceptance of LGU officials of the role played by the BDA in the entire exercise;
- Delayed implementation due to the limited availability of GOP counterpart funds;
- Difficulty of the LGUs to provide equity contribution as required by NEDA;
- Inadequate and untimely release of funds for project implementation;
- Difficulty and high cost of transport of construction materials to island provinces; and,
- Sustainability of completed facilities given the financial capability of the LGUs.

Given these, there is a need to carefully assess the implementing mechanisms and procedures to be adopted to address the identified constraints during the ensuing project preparation phase.



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