GOVERNMENT OF
THE REPUBLIC OF THE PHILIPPINES

THE STUDY FOR SOCIO-ECONOMIC RECONSTRUCTION AND DEVELOPMENT OF CONFLICT-AFFECTED AREAS IN MINDANAO IN THE REPUBLIC OF THE PHILIPPINES

FINAL REPORT

VOLUME 1

MAIN TEXT

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JAPAN INTERNATIONAL COOPERATION AGENCY

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PREFACE

In response to a request from the Government of the Republic of the Philippines, the Government of Japan decided to conduct the Study for the Socio-Economic Reconstruction and Development of Conflict-Affected Areas in Mindanao (SERD CAAM) under the Japan-Bangsamoro Initiatives for Reconstruction and Development (J-BIRD) and entrusted it to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team headed by Mr. Tsuneo Bekki (in 2007), Dr. Hani Abdel-Halim (2007-2008) and Dr. Asaichi Miyakawa (2008-2009) from February 2007 to November 2009.

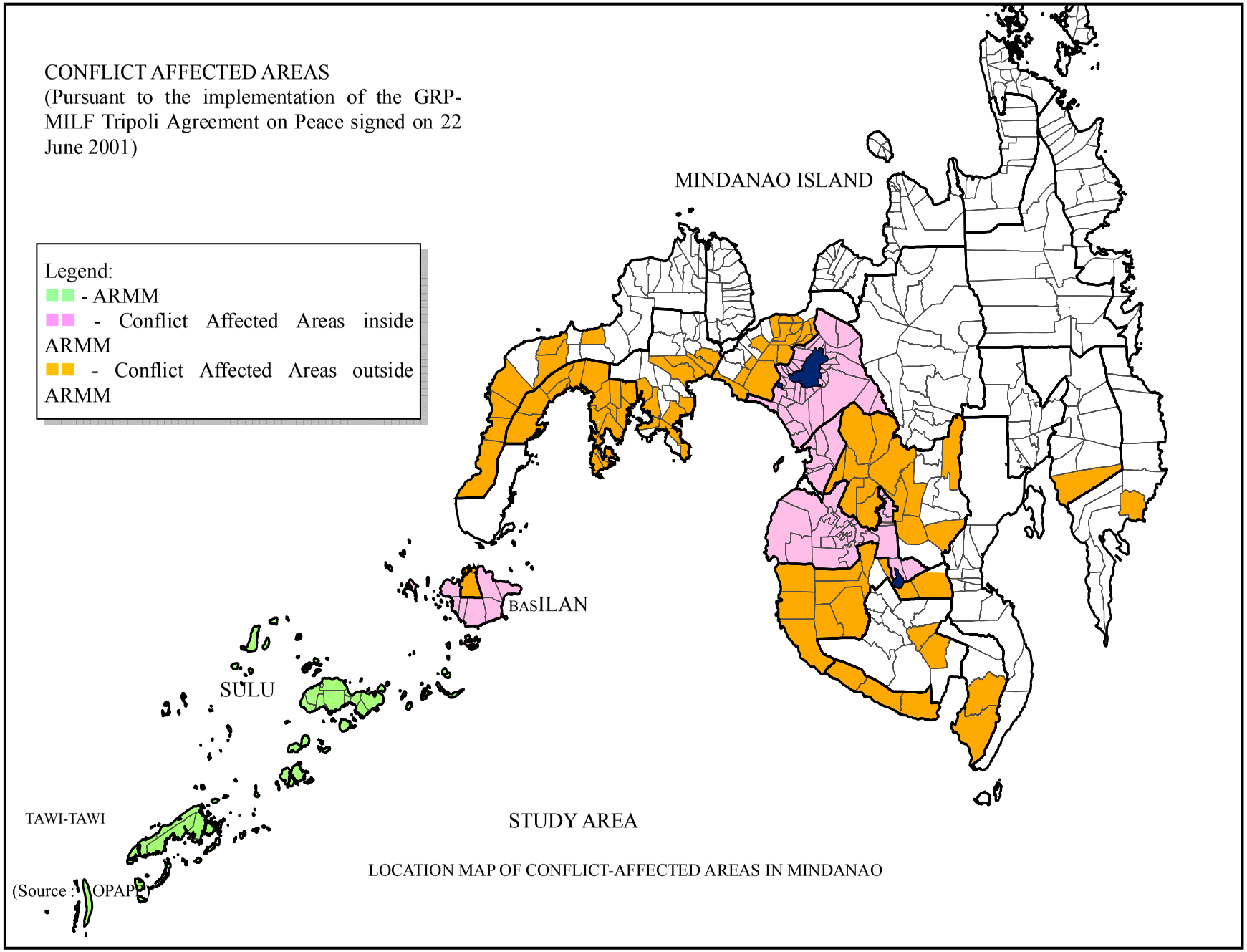
The study team held close discussions with the people and officials concerned in the CAAM as well as stakeholders concerned to the study, and conducted study activities such as broad field surveys on Barangay level, implementation of On-the-Spot Assistance (OSA) and Quick Impact Project (QIP), constructions of three (3) Databases, and formulation of the Socio Economic Development Plan (SEDP). Upon returning to Japan, the study team prepared this final report to summarize the results of the Study.

I sincerely hope that this report will contribute to the reconstruction and further development of the CAAM, with the end in view of promoting the consolidation of peace in Mindanao.

Finally, I wish to express my sincere appreciation to the people, officials and stakeholders in the Philippines for their vital cooperation extended to the study team.

November 2009,

Toshiyuki Kuroyanagi
Director General
Economic Infrastructure Development Department
Japan International Cooperation Agency



LOCATION MAP OF CONFLICT-AFFECTED AREAS IN MINDANAO

SOCIO-ECONOMIC RECONSTRUCTION AND DEVELOPMENT FOR CONFLICT-AFFECTED AREAS IN MINDANAO (SERD-CAAM)

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ACRONYMS AND ABBREVIATIONS

ARMM	:	Autonomous Region in Muslim Mindanao
ASFP	:	ARMM Social Fund Project
AusAid	:	Australian Agency for International Development
AFP	:	Armed Forces of the Philippines
ATO	:	Air Transportation Official
BDA	:	Bangsamoro Development Agency
BI	:	Basic Social Infrastructure
BJE	:	Bangsamoro Juridical Entity
BSWM	:	Bureau of Soils and Water Management
BAS	:	Bureau of Agricultural Statistics
CAAM	:	Conflict Affected Areas in Mindanao
CCCH	:	Coordinating Committee on the Cessation of Hostilities
CDA	:	Cooperative Development Authority
CIDA	:	Canadian International Development Agency
CMTS	:	Cellular Mobile Technology System
CSO	:	Civil Society Organization
CR	:	Certificate of Registration
CGSD	:	Coast and Geodetic Survey Department
DA	:	Department of Agriculture
DAP	:	Development Academy of the Philippines
DAR	:	Department of Agrarian Reform
DENR	:	Department of Environment and Natural Resources
DILG	:	Department of Interior and Local Government
DOE	:	Department of Energy
DOH	:	Department of Health
DOLE	:	Department of Labor and Employment
DOT	:	Department of Tourism
DOTC	:	Department of Transportation and Communication
DPWH	:	Department of Public Works and Highways
DSWD	:	Department of Social Welfare and Development
DTI	:	Department of Trade and Industry
DepEd	:	Department of Education
ECA	:	Environmentally Constrained Areas
EIS	:	Environmental Impact Statement
EMB-DENR	:	Environment Management Bureau, Department of Environment and Natural Resources

EOJ	:	Embassy of Japan
EPA	:	Environmental Protection Area
EU	:	European Union
FGD	:	Focus Group Discussion
FMB	:	Forest Management Bureau
FTA	:	Final Peace Agreement
GEM	:	Growth and Equity in Mindanao
GIS	:	Geographic Information System
GGP	:	Grassroots Grant Aid Program
GOJ	:	Government of Japan
GRDP	:	Gross Regional Domestic Product
GRP	:	Government of the Republic of the Philippines
GTZ	:	Deutsche Gesellschaft fur Technische Zusammenarbeit GmbH
HDI	:	Human Development Index
IBNA	:	In-depth Barangay Needs Analysis
IMT	:	International Monitoring Team
IDPs	:	Internally Displaced Persons
IP	:	Indigenous People
GGP	:	Japan's Grassroots Grant Aid Program
J-BIRD	:	Japan-Bangsamoro Initiatives for Reconstruction and Development
JBIC	:	Japan Bank for International Cooperation
JBIC-ASF	:	Japan Bank for International Cooperation-ARMM Social Fund
JICA	:	Japan International Cooperation Agency
JNA	:	Joint Needs Assessment
KII	:	Key Informant Interview
LGU	:	Local Government Unit
MALMAR	:	Malitubog-Maridagao Irrigation Development Project
MEDCO	:	Mindanao Economic Development Council
MGB	:	Mines and Geosciences Bureau
MILF	:	Moro Islamic Liberation Front
MNLF	:	Moro National Liberation Front
MRDP	:	Mindanao Rural Development Project
MTF	:	Mindanao Trust Fund
MTCP	:	Malaysian Technical Cooperation Program
NHA	:	National Housing Authority
NTC	:	National Telecommunications Commission
MTDP	:	Medium Term Development Plan
NAMRIA	:	National Mapping and Resource Information Authority
NEDA	:	National Economic Development Authority
NEA	:	National Electrification Administration

NGO	:	Non-Government Organization
NIPAS	:	National Integrated Protected Areas System
NSO	:	National Statistics Office
OIC	:	Organization of Islamic Conference
OPAPP	:	Office of the Presidential Adviser on the Peace Process
OSA	:	On-the-Spot Assistance
PA	:	Participatory Approach
PAGASA	:	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PAWB	:	Protected Areas and Wildlife Bureau
PAWD	:	Philippine Association of Water Districts
PPA	:	Philippine Ports Authority
PPC	:	Philippine Postal Corporation
PIE-MO	:	PHIVIDEC Industrial Estate in Misamis Oriental
PHIVOLCS	:	Philippine Institute of Volcanology and Seismology
PO	:	People's Organization
PSC	:	Project Steering Committee
QIP	:	Quick Impact Projects
RPDO	:	Regional Planning and Development Office
RPM	:	Regional, Provincial and Municipal
SC	:	Steering Committee
SEC	:	Securities and Exchange Commission
SEDP	:	Socio-Economic Development Plan
SEDP-CAAM	:	Socio-Economic Development Plan for Conflict Affected Areas in Mindanao
SOCSKSARGEN	:	South Cotabato/Sultan Kudarat/Sarangani/General Santos City
SOMA	:	Suspension of Offensive Military Action
SPDA	:	Southern Philippines Development Authority
SRI	:	Strategic Regional Infrastructure
STARCM	:	Support to Agrarian Reform in Central Mindanao
SZOPAD	:	Special Zone for Peace and Development
SPCPD	:	Southern Philippine Council for Peace and Development
TESDA	:	Technical Education and Skills Development Authority
TWG	:	Technical Working Group
UN	:	United Nations
UNDP	:	United Nations Development Programme
UNESCO	:	United Nations Educational, Scientific and Cultural Organization
USAID	:	United States Agency for International Development
WB	:	World Bank

PART I

MAIN TEXT

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Mindanao is located in the southern part of the Philippines, with a land area of 100,281.65 sq. km and a population of 18 million, more than half of which are engaged in agriculture, forestry and fisheries (AFF).

The island has been identified, under the Philippine Human Development Report 2008/2009 (Philippine Human Development Network, 2009) survey and other studies, as the poorest area in the Philippines. One of the reasons cited was the conflict which has lasted for more than 30 years. And the immigration policies since the early colonial days particularly affect the central and southwestern parts of the island.

In 1990, the Autonomous Region in Muslim Mindanao (ARMM) was officially created based on Republic Act No. 6734. On 2 September 1996, a peace accord between the Government of the Republic of the Philippines (the GRP) and the Moro National Liberation Front (the MNLF) was reached. This paved the way for the expansion of ARMM in 2001. Meanwhile, armed conflicts between the GRP and the Moro Islamic Liberation Front (the MILF), a break-away faction of the MNLF sometime in 1977 continued to escalate and viewed as a repeated version of the GRP-the MNLF war. Although the ceasefire agreement in 2003 resulted in a sharp decline of occurrences of conflicts in Mindanao, there has been a resurgence of conflict incidence since August 2008.

This development has been closely monitored by an International Monitoring Team (IMT) organized for this purpose. The Government of Japan (GOJ) has responded positively by dispatching a senior advisor to the IMT and has implemented 12 recent projects, mainly in the education sector, under the Grassroots Grant in Aid Program.

The current, relatively peaceful situation, in Mindanao has provided the background for the urgent implementation of various development programs and projects, and the direct assistance by local and international organizations in Mindanao. These development projects are expected to create a positive impact on the peace and development of the conflict areas in Mindanao.

It has been observed that, in spite of various interventions, the region continues to experience the effects of conflict and requires more development. This has induced the consolidation of all plans and projects, as well as, site selection and project prioritization.

The GRP and BDA* viewed the formulation of for the socio-economic development of Conflict Affected Areas in Mindanao (CAAM) as an effective and responsive strategy for the implementation of a comprehensive development plan.

* Bangsamoro Development Agency (BDA) is the development agency of the MILF established in accordance with humanitarian, rehabilitation and development aspect of the GRP - the MILF Peace Agreement signed June 22, 2001.

Therefore, the BDA through the OPAPP, requested assistance from the GOJ to undertake this study. An agreement was signed between the GOJ and the GRP, through the OPAPP on 02 March 2007, to conduct a study entitled the Study for "Socio-Economic Reconstruction and Development in Conflict Affected Areas in Mindanao" or SERD-CAAM. The formulation of the Socio-Economic Development Plan in the Conflict-Affected Areas in Mindanao (SEDP) is one of the major goals of SERD-CAAM. The SEDP will serve as the blueprint for development in the CAAM.

The study has been implemented and managed under the Japan-Bangsamoro Initiatives for Reconstruction and Development (J-BIRD) whose aim is to consolidate peace in Mindanao in preparation for the signing of a peace agreement between the GRP and the MILF.

1.1.1 Brief History of the Mindanao Conflict

Mindanao Muslims or ***Bangsamoro*** had been socially, politically, and economically organized into the two sultanates of Maguindanao and Sulu, even before the onset of Spanish colonial rule. These sultanates evolved as proto-nation states whose territories and areas of influence increased and decreased depending on the overall leadership abilities of their sultans lineage and kinship combined with their ability to manage production and defense in the sultanates. Their wealth was based on their flourishing long-distance bulk trade with China and the Arabic countries in the Middle East. The long-distance trade brought traders and also Arab Islamic missionaries to Mindanao, Sulu, and Tawi –tawi. This lead to the Islamization of many areas in Mindanao, commencing as early as 1380. (This date being roughly the date attributed to the oldest material evidence of an Islamic presence and is on a grave marker in Simunul, Tawi-tawi). The sultanates played an important role in providing the foundation for the ***Bangsamoro*** to base their distinctive identity as a people separate from those of Luzon and the Visayas who were Christianized under Spanish colonial rule.

The Spanish colonial period in the Philippines started in the late 1500s. Spanish colonial government Christianized the indigenous populations in Luzon and the Visayas but failed largely in converting the Bangsamoro people to Christianity under Spanish colonial rule for the next three centuries.

Despite some Spanish footholds in northern, eastern, and southwestern Mindanao, the Spaniards failed to colonize Muslim dominated areas. Various ***Bangsamoro*** groups fiercely resisted Spanish colonial rule. Although Spain failed to establish full political control over the ***Bangsamoro*** and the territories of the Sultanates, it engaged them in relentless armed campaigns and undermined the sultanates' economic base through trade blockades.

U.S. colonial rule in the Philippines lasted for over four decades, from 1899 until July 4, 1946, when the United States granted independence to the Philippines. U.S. officials used education as "a tool of conquest" (Rodil, 1994) and were quite successful in convincing Moro leaders to send their sons and daughters to U.S. established schools. As a result, many Moro leaders were convinced they were better off under a U.S. administration, with their province (Sulu) as a "permanent territory" of the United States, rather than be assimilated into an independent Philippine state.

Colonially imposed land laws (like the Land Registration Act of 1902, the Philippine Commission Act No. 718, and the Public Land Act of 1903) did not recognize ***adat*** (Moro customary law) on land stewardship and this stoked feelings of resentment among the Muslims against the central government administration in Manila. Heightened tensions and animosities between settler populations and the impoverished and minoritized ***Bangsamoro*** gradually evolved into an armed uprising in the 1960s and early 1970s. Initially, there was a series of isolated uprisings that rapidly spread in scope and size. But one group, the Moro National Liberation Front (MNLF), chaired by Nur Misuari, then an instructor at the University of the Philippines, managed to bring most partisan Moro forces into the loosely unified MNLF framework. In 1972, the MNLF declared armed struggle as means of achieving the ***Moro*** people's complete freedom and independence from the perceived oppression of Filipino colonialism.

A series of incidents convinced many Muslim intellectuals that armed struggle was the only way to redress their grievances and to attain their inherent right of self determination. One of these was the ***Jabidah*** Massacre incident in March 1968.It is alleged that more than 20 ***Sama*** youth from Sulu were killed by soldiers of the Philippine army under instructions from the then President Ferdinand E. Marcos. This initiated a series of congressional investigations into the incident. However, these investigations failed to establish the truth and several versions of the incident exist. Many Muslims believe that the government under Marcos was

solely responsible for the carnage, and this incident was enough to start the contemporary armed conflict in Mindanao.

1.1.2 Key Causes of Conflict in Mindanao

As described in many reports and studies, the armed conflicts in Mindanao are the consequence of multi-faceted and complicated factors and dynamics and there is no single cause or factor that may be directly linked to the conflicts. The conflicts in Mindanao are also multi-dimensional and may take place at various levels, from the family, community, larger society and the state. The following is a summary of the major key causes of the conflicts in Mindanao.

1.1.2.1 Historical Dynamics Leading to Deep Seated Prejudices

Three-and-a-half centuries of colonial rule had spawned deep animosities and prejudices between a Christian dominated central government and the minority Muslim groups and is said to have triggered the war in Mindanao.

The assertion of a distinct identity separated from the majority Christianized Filipinos was also one of the most important motivations for the struggle of the ***Bangsamoro*** people for self-determination, which they viewed as their God-given right. They, therefore, believe they are waging a just war.

1.1.2.2 Exclusion Policy

Central government policies did not recognize the integrity of the ***Bangsamoro*** identity which led to several exclusivist policies that relegated the ***Bangsamoro*** people to the sidelines of Philippine politics.

The American regime inherited the negative perceptions caused by the Spanish and used these as a basis for many American policies toward the Muslim ***Bangsamoro.*** During the Philippine Commission, which was organized after the Americans formally took over as the country's new colonial masters, several land legislations were passed that led to the eventual disenfranchisement of the ***Bangsamoro,*** and other indigenous populations in Mindanao, of their ancestral lands.

Among these legislations were the Land Registration Act of 1902, the Public Land Act of 1903, and the National Land Settlement Acts (NLSA) from 1913 to 1917. These land acts caused an irreversible change in the demographic profile of the Mindanao population. Where once the ***Bangsamoro*** and indigenous populations dominated, a series of land acts were

implemented, which results in exclusion of the indigenous populations. The population soon became predominantly Christian

The Philippine national government's politics of exclusion are also manifested in many of their policies on education, for example, the Philippine school calendar is based on a the Christian calendar – i.e. classes are from Mondays to Fridays, and vacations are scheduled during Christian religious festivals (e.g. Christmas, Easter etc.) The Muslims consider Friday as their holy day of obligation for congregational prayers in the mosque. But as students in the Philippine school system, they have to be at school on Fridays. Muslims do not celebrate Christmas, and yet Muslim students have to attend Christmas parties during the days before the Christmas break.

1.1.3 Results of Conflict

The long-running armed conflict in Mindanao has affected the Philippines overall development and needs to be appropriately addressed considering that the conditions detailed below do exist and must be resolved in the context of peace and development and pursued in line with the principles of good governance and transparency:

- Seven out of the ten poorest provinces in the Philippines are in Mindanao, with poverty increasing in conflict affected areas of Mindanao. (Philippine Human Development Network, 2009)
- The prices of food and basic commodities are highly unstable because of the political instability which is discouraging farmers from planting crops and raising livestock, resulting in the importation of commodities from neighboring provinces.
- The Government and development partners need to prioritize, location specific interventions and projects, to ensure sustainable development programs.

1.1.4 Incidence of Conflict

The number of hostile incidences and Internally Displaced Persons (IDPs) vary depending on the data sources. Figures shown in Table 1.1-1 confirm the general observation that Lanao del Sur, Lanao del Norte, Maguindanao and North Cotabato have much higher incidence of conflicts when compared to other provinces.

Consequently, the number of IDPs and damaged infrastructure is larger compared to other regions. Table 1.1-1 indicates that houses and school buildings were most affected by the conflict.

In CAAM, unfortunately, conflicts have increased since July 2008, and as a result the number of conflicts would be much larger if the same survey were conducted today, with a particular

increase in the number of IDPs. According to the Department of Social Welfare and Development (DSWD), as of August 2008, more than 113,000 IDPs were forced out of their home barangays,

Table 1.1-1 Conflict Frequency and Number of Damaged Infrastructure by Province in the CAAM

PROVINCE NAME	CONFLICT FREQUENCY	CONFLICT PER BARANGAY	SCHOOL	HEALTH FACILITY	BRIDGE	ROAD	HOUSE	REMAINING IDP
Lanao del Norte	363	1.4	19	2	7	17	86	822
Lanao del Sur	428	0.4	43	2	11	15	86	2,086
Compostela Valley	4	0.3	0	0	0	0	1	0
Davao Oriental	8	0.8	0	0	0	0	1	0
Maguindanao	568	2.0	44	13	11	19	121	34,489
North Cotabato	417	1.0	35	10	8	17	87	8,437
South Cotabato	6	0.2	0	0	0	0	2	463
Sarangani	16	0.2	0	0	0	0	6	37,41
Shariff Kabunsuan	174	0.8	14	0	2	9	26	19,456
Sultan Kudarat	150	0.7	16	3	8	8	34	2,283
Zamboanga del Norte	94	0.6	3	0	0	1	25	30
Zamboanga del Sur	15	0.1	0	1	1	1	5	419
Zamboanga Sibugay	43	0.1	1	2	0	4	7	598
Basilan	187	1.0	29	3	5	8	29	3,019

Source: NDCC, DSWD-ARMM, December 2008. As of February 2007 for Central Mindanao and the southern part of Lanao del Sur, and August 2008 for other provinces..

1.1.5 The Impacts of Conflict

There are various impacts as a result of conflicts including direct and indirect economic costs, social costs, governance and institutional costs. (see, Salvatore Schiavo-Campo, Mary Judd, Mindanao conflict in the Philippines: Roots, costs, and Potential Peace Divided, February 2005, Social Development Papers No. 24. The World Bank)

The direct cost of the conflict at a local level has had a very small impact on the rest of Mindanao and the Philippines. The output losses were correlated with the intensity of the conflict. During the high intensity periods 1975 to 1982 and 1997 to 2002 and the period of low tension 1983 to 1996, the average annual economic cost of the war was around 1 % of the GDP for the central and southwestern Mindanao, and 0.5 % for the Philippines equivalent to $200 million for both the high intensity periods.

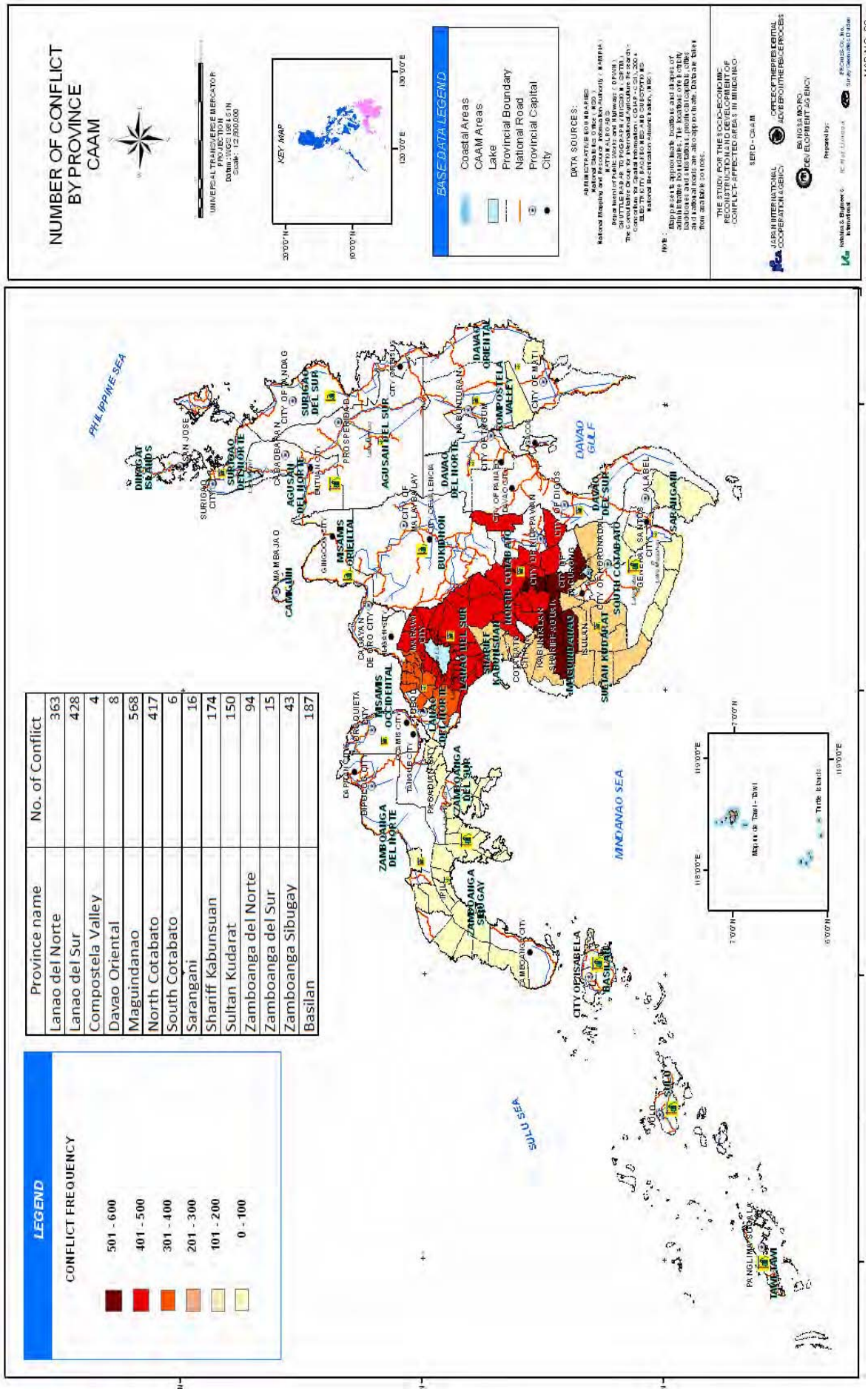

Figure 1.1-1 Number of Conflicts per Municipality

1.1.6 Regional Impact of the Mindanao Conflict and its Resolution

Civil conflict destroys much more than physical infrastructure. The core of the damage is to the fabric of society and to the stock of social capital. Social capital is essentially trust capital such as relationship of mutual trust, norm, and social network which, unlike physical capital, grows as it is used. Thus, the process of peace negotiations and the implementation of an agreed framework, with the positive involvement of the international donor community, should gradually replace the historical cycles of dispossession, resistance and mistrust in Mindanao.

This study of interventions based on socio-economic reconstruction and development is a positive move for the establishment of sustainable peace and development for the communities in Mindanao, particularly those in conflict affected areas.

1.2 Outline of the Study (the SERD- CAAM)

1.2.1 Objective of the SERD-CAAM

The general objective of the Study is to formulate the Socio-Economic Development Plan (SEDP) for the reconstruction and development of conflict-affected areas (CAAM) to promote the consolidation of peace in Mindanao.

1.2.2 Scope of the SERD-CAAM

Major scope of the SERD-CAAM is to formulate the Socio-Economic Development Plan (SEDP) on the basis of social survey such as In-depth Barangay Needs Assessment (IBNA), Quick Impact Project (QIP), On the Spot Assistance (OSA) and Geographic Information System (GIS).

The SEDP contains suitable projects that address issues relating to poverty alleviation, community improvement and development, accessibility and provision of the basic needs of the people.

The study will undertake, in particular extensive and comprehensive needs assessment surveys on Barangay level and consultations with prospect beneficiaries and stakeholders to provide a strong basis for the formulation of the SEDP in the CAAM.

1.2.3 Implementation System of the SERD-CAAM

The SERD-CAAM was undertaken by the Study Team organized by JICA in partnership with OPAPP and BDA and other authorities concerned. The Study Team members are identified in Appendix K.

Project Steering Committee (PSC) was organized co-chaired by OPAPP and BDA. Its function is to act as decision-making body (at a policy level), provide inputs on overall project direction and strategy, ensure that the conduct of the Study is within the context of supporting the GRP-MILF peace process, and endorse JICA Study Team reports. Seven PSC meetings were held during the Study.

Technical Working Group (TWG) was organized in order to provide the technical support to the PSC and JICA Study Team, provide inputs in the formulation of the SEDP, provide inputs in drawing up reports, work in tandem with the JICA Study Team, collect and consolidate comments and recommendations arising during the course of the Study which will be transmitted to the Study Team for appropriate responses and actions, and recommend and endorse approval of proposed projects. The TWG was co-chaired by NEDA and BDA. Twelve TWG meetings were held during the Study.

Table 1.2-1 List of Member Agency/Organization of PSC and TWG

MEMBER AGENCY/ORGANISATION		PSC	TWG
(1)	OPAPP	○	○
(2)	BDA	○	○
(3)	National Economic and Development Authority	○	○
(4)	Department of Interior and Locl Government	○	○
(5)	Department of Environment and Natural Resources	○	○
(6)	Department of Agriculture	○	○
(7)	Deprtment of Agrarian Reform	○	○
(8)	Mindanao Economic Development Council	○	―
(9)	Autonomous Region for Muslim Mindanao	○	―
(10)	JICA Philippine Office and Embassy of Japan	○	―
(11)	Regional Planning and Development Office-Autonomous Region for Muslim Mindanao	―	○
(12)	Joint Coordinating Committees on the Cessation of Hostilities (GRP and MILF)	―	○
(13)	International Monitoring Team	―	○

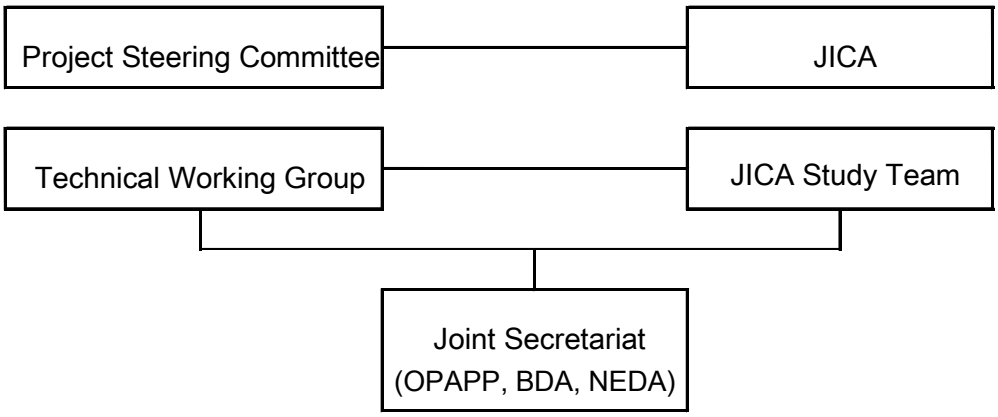

Figure 1.2-1 SERD-CAAM Project Institutions

1.3 THE STUDY AREA

The conflict-affected areas or CAAM are part of the Mindanao group of islands which are located in the southernmost part of the Philippines. It occupies a total land area of about 5.6 million hectares or 55 % of the area of Mindanao,. Mindanao is bounded by large bodies of water: on the north by the Mindanao Sea, Sulu Sea in the west, in the south the Celebes Sea and in the east by the Pacific Ocean. Mindanao has long coastlines, large areas of shallow continental shelves, marshlands and a few lakes.

The Study covers the whole "conflict-affected areas" in Mindanao as shown in the Location Map. The complete list of the administrative divisions and conflict-affected areas in Mindanao are given in Table 1.3-1. The information was provided by OPAPP and is based on the Barangay Census conducted in year 2000 pursuant to the implementation of the GRP-MILF Tripoli Agreement on Peace signed on 22 June 2001.

IX), Northern Mindanao (Region X), Davao (Region XI), SOCCKSARGEN (Region XII), and the Autonomous Region of Muslim Mindanao (ARMM). CAAM covers 13 provinces, namely: Zamboanga del Norte, Zamboanga del Sur, Zamboanga Sibugay, Lanao del Norte, Compostela Valley, Davao Oriental, North Cotabato, South Cotabato, Sarangani, Sultan Kudarat, Basilan, Lanao del Sur, Maguindanao (including Shariff Kabunsuan), and 3 cities: Pagadian City, Isabela City and Marawi City. It covers 3,847 barangays in 151 cities and municipalities.

Table 1.3-1 Administrative Divisions and Conflict-Affected Areas in Mindanao

Name of Province	Total Number [1]				Conflict Affected Areas [2]			
	Provinces	Cities	Municipalities	Barangays	Provinces	Cities	Municipalities	Barangays
REGION IX	**3**	**5**	**67**	**1,904**	**3**	**2**	**33**	**900**
Zamboanga del Norte		2	25	691		-	7	162
Zamboanga del Sur		2	26	779		1	10	306
Zamboanga Sibugay		-	16	389		-	16	387
City of Isabela [3]		1	-	45		1	-	45
REGION X	**5**	**8**	**85**	**2,022**	**1**	**0**	**16**	**311**
Bukidnon		2	20	464		-	-	-
Camiguin		-	5	58		-	-	-
Lanao del Norte		1	22	506		-	16	311
Misamis Occidental		3	14	490		-	-	-
Misamis Oriental		2	24	504		-	-	-
REGION XI	**4**	**5**	**44**	**1,162**	**2**	**0**	**2**	**23**
Davao del Norte		3	8	223		-	-	-
Davao del Sur		2	14	519		-	-	-
Davao Oriental		-	11	183		-	1	10
Compostela Valley		-	11	237		-	1	13
REGION XII	**4**	**5**	**45**	**1,194**	**3**	**0**	**31**	**767**
Cotabato (North Cotabato)		1	17	543		-	13	404
Sarangani		-	7	140		-	5	97
South Cotabato		2	10	225		-	2	38
Sultan Kudarat		1	11	249		-	11	228
Cotabato City [4]		1	-	37		-	-	-
REGION XIII (CARAGA)	**5**	**3**	**70**	**1,310**	**0**	**0**	**0**	**0**
Agusan del Norte		1	11	252		-	-	-
Agusan del Sur		-	14	314		-	-	-
Surigao del Norte		1	20	335		-	-	-
Surigao del Sur		1	18	309		-	-	-
Dinagat Islands		-	7	100		-	-	-
ARMM	**6**	**1**	**111**	**2,470**	**4**	**1**	**66**	**1,846**
Basilan		-	10	210		-	6	210
Lanao del Sur		1	39	1,158		1	39	1,170
Maguindanao		-	22	279		-	13	261
Sulu		-	18	410		-	-	-
Tawi-tawi		-	11	203		-	-	-
Shariff Kabungsuan		-	11	210		-	8	205
Total	**27**	**27**	**422**	**10,062**	**13**	**3**	**148**	**3,847**

Source: 1) National Statistical Coordination Board (as of December 2006); 2) Data Source is Office of the Presidential Adviser on the Peace Process (list of Barangays per Census 2000 Data); 3) The City of Isabela is under Region IX although it is a component of the Basilan Province which is under ARMM; and 4) The City of Cotabato is under Region XII but is not part of CAAM.

1.3.1 Study Limitations

The Study took account of the following limitations which indicate how the Study Area and different sectors and subsectors were identified.

The Study covered five major development sectors, namely: Social, Economic, Infrastructure, Environment and Local Governance. The Comprehensive Land Use Plan (CLUP) Guidebook was the initial basis adopted to identify the development sectors and subsectors, although the identification of the subsectors was limited. The final prioritization of the sectors and subsectors was based on the results of the Social Surveys and the list of needs priorities gathered from the LGUs and the Line Agencies. These also included the results of the Key Infomant Interview (KII) and workshops.

Millenium Development Goals (MDGs) such as poverty alleviation and peace building initiatives are treated as complimentary issues and are addressed in the programs and projects identified under each of the development sectors and subsectors.

The availability of data for more comprehensive and extensive comparative analysis on barangay and municipal profiles and needs priorities, was considered a constraint. The assessment of priority needs requires additional data both quantitative and qualitative to what was used in the Study.

Data collection from the LGUs and Line Agencies also needs to be quantitatively and qualitatively validated against other secondary data available in Line Agencies and LGUs Development Plans. This will require additional time and a process of consolidation.

The recurrence of armed conflicts after August 2008 in the CAAM has greatly delayed the completion of data gathering in barangays identified as needing immediate assistance. However, the Study Team was able to conduct Social Surveys in 3,532 barangays out of the 3,856 barangays in CAAM.

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CHAPTER 2

MINDANAO PROFILE AND OPPORTUNITIES

This chapter describes the natural and physical characteristics of Mindanao and includes; geographical location, geology, meteorological characteristics, natural land and water resources, and land use. Where data is available it has been included for the land use of the conflict affected areas and the development potential of each region.

2.1 Brief Summary of MINDANAO

Located south of the two major island groups of the Philippine archipelago, Luzon and the Visayas, the Mindanao group of islands occupies land area of almost 100,281.65 sq. km which accounts for about one-third of the Philippines total land area. The islands are bounded by large bodies of water; to the north by the Mindanao Sea, to the west by the Sulu Sea, to the south by the Celebes Sea and to the east by the Pacific Ocean.

Mindanao is composed of six administrative regions namely, Zamboanga Peninsula (Region IX), Northern Mindanao (Region X), Davao (Region XI), SOCCSKSARGEN (Region XII), CARAGA Region, and the Autonomous Region of Muslim Mindanao (ARMM). Among the six regions, Region X is the largest occupying some 19% of Mindanao's total land area. and ARMM is the smallest occupying approximately 12% (refer to Table 2.1-1).

Table 2.1-1 Land Area by Region, 2005

REGION	AREA (SQ. KM)	PERCENTAGE TO MINDANAO TOTAL LAND AREA %
Region IX	14,580.23	14.5
Region X	17,497.21	17.4
Region XI	19,008.29	19.0
Region XII	18,568.39	18.5
CARAGA	18,382.88	18.3
ARMM	12,244.65	12.2
TOTAL	**100,281.65**	**100.00**

Source: National Mapping and Resource Information Authority (NAMRIA)

Mindanao is home to more than 20 million people of varied ethnicities and languages and has a rich mixture of human and natural resources as illustrated in Table 2.2-1.

Table 2.1-2 Mindanao at a Glance

CHARACTERISTICS	DESCRIPTION
Area	100,281.65 sq. km
Population	20.23 million (from 2000 NSO census); about 24% of the Philippine population of 84.2 million
Political subdivisions	6 administrative regions - Region IX (Western Mindanao) -Region X (Northern Mindanao) -Region XI (Southern Mindanao) -Region XII (SOCCSKSARGEN) -ARMM (Autonomous Region in Muslim Mindanao) – provinces of Basilan, Sulu, Tawi-Tawi, Lanao del Sur, Maguindanao and Sharif Kabunsuan - CARAGA (Compostela Valley, Davao del Norte and Davao Oriental) 27 cities – major cities are Davao, Cagayan de Oro, Zamboanga, General Santos 25 provinces 404 municipalities 10,206 barangays
Ethno-linguistic groups	13 Islamized ethno-linguistic groups (Bangsamoro), 18 Lumad (indigenous groups) and a mix of lowland Christian ethnic groups, mostly migrants or settlers from Luzon and the Visayas
Religions	Predominantly Christian of different denominations, with Roman Catholicism as the most prevalent; and Islam (estimated at 20.4 % of the population)*
Poverty Incidence	35.5%; higher than national average of 32% (although ARMM posted much higher poverty incidence according to Philippine Human Development Report)
Simple literacy rate (can read and write)	88% (lower than the rates in Luzon (95%) and Visayas (92%)
Functional literacy rate (can make computations and basic inferences)*	75% (lower compared to Luzon – 86% and Visayas 80.5%)
Natural resources**	Metallic reserves (3.6 million tons) Gold ore deposits - 49% of the Philippines' total Nickel stocks – 63% of country's total Non-metallic reserves – 8.6 billion tons Coal deposits – 37.5 million metric tons Fish production Aquaculture – 765,920 tons or 45% of Philippine production of 1,713,450 Commercial fish production – 558,809 or 50% of country's total production of 1,130,295 Agricultural crop production Mindanao supplies 100% of the country's rubber 94% of pineapple 67% of coffee and corn 64% of cassava 62% of coconuts 23% of palay (rice)
Per capita income***	In 2003, PhP 11,555.83 (lower than Philippines per capita income of PhP 12,267

*Source: Alternate Forum for Research in Mindanao (AFRIM) Mindanao situation
**Source: AFRIM (for mineral resources data); Bureau of Agricultural Statistics, 2004-2005 data
***culled from Philippine Human Development Report, 2005 (UNDP)

The ethnic and cultural differences of each of the regions of Mindanao have contributed greatly to centuries of armed conflict in the area, and in turn, established an imbalance of economic growth. Some regions are rapidly advancing while others, like the Autonomous Region in Muslim Mindanao (ARMM), suffer poverty levels much higher than the national averages

The foregoing is highlighted in more detail in the following sections.

2.2 MINDANAO DEMOGRAPHY AND LAND AREA

2.2.1 Population and Growth Rate

Population increases and decreases are influenced by different factors including birth and death rates, migration, calamities and conflict. By examining the population trend in the recent past, an overview may be established and used as a guide to investigate how it may influence the quality of life in future.

The growth rate is defined as the average annual percent change in the population, resulting from a surplus (or deficit) of births over deaths and the balance of migrants entering and leaving a country or region. The rate may be positive or negative. The growth rate is a factor used to determine how much of a burden would be imposed on a country or region by the changing needs of its people with regards to jobs, infrastructure (i.e. schools, hospitals, housing, roads), and resources (e.g., food, water, electricity).

National Census figures indicate that the total Philippine population increased from 68.6 million in 1995 to 76.5M in 2000 and further increased to 88.6 M in 2007. This resulted in an annual population growth rate (APGR) of 2.36% for the years 1995-2000 which reduced to 2.04% between 2000 and 2007. The APGR's quoted the result of an average increase of about 1 million Filipinos per annum of the country's population since 1995.

The Population in the Philippines, Mindanao and Conflict-Affected Areas in Mindanao (CAAM) in the years 1995, 2000 and 2007 are shown in Table 2.2-1.

Table 2.2-1 Population in 1995, 2000 and 2007

AREA	POPULATION LEVEL			% PHILIPPINES (2007)	APGR		
	1995	2000	2007		95-00	00-07	95-07
Philippines	68,616,536	76,504,077	88,574,614	100.00%	2.36	2.04	2.15
Mindanao	16,205,487	18,133,794	21,582,540	24.00%	2.27	2.24	2.42
CAAM	4,445,161	5,044,293	6,516,313	7.36%	2.56	3.73	3.24

Source: NSCB, 2007

From Table 2.2-1 above in 2000-2007, the population of Mindanao reflects an increasing trend at an almost a similar pace with the national level. In the same time period, however, the CAAM growth trend is distinctively higher. Similarly for the period of 1995 to 2007, CAAM (as an administrative unit) the growth rate is much higher than both Mindanao and the Philippines national level. This is illustrated in Figure 2.2-1. In 2007 figures, the total population of the 13 provinces of CAAM is recorded as 6,516,313 and accounts for almost 30 % of the total population of Mindanao. The magnanimity of these figures reflects the

vulnerability of these 13 critical provinces to conflict whether created by man (i.e. war, agrarian reform) or natural causes (i.e. drought, floods).

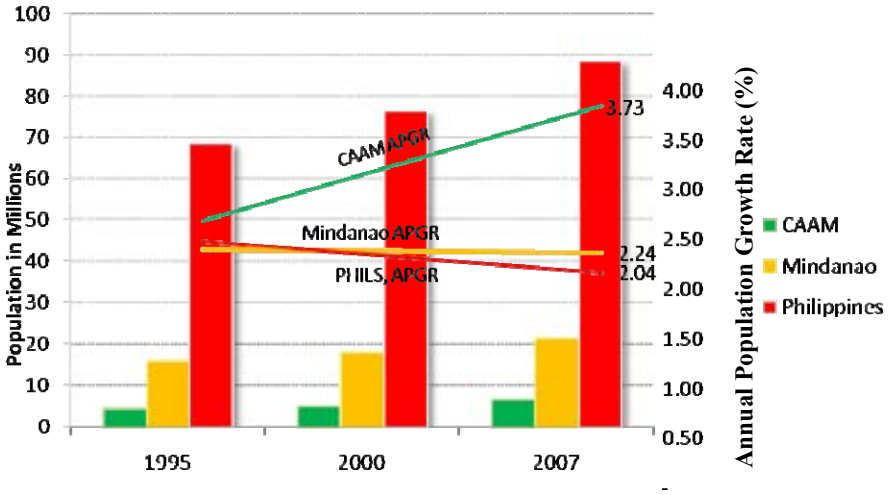


Figure 2.2-1 Population Trends in CAAM

2.2.2 Land Area and Political Subdivisions

Mindanao has a total land area of 133,666.3 square kilometers or at least 35 % of the Philippines' total land area. It is comprised of 25 provinces, 27 cities, 417 municipalities and 10,061 barangays. See Table 2.2-2 for Mindanao's total land area and distribution by region, province or city.

Table 2.2-2 Mindanao Total Land Area and Distribution by Region, Province/City

AREA NAME	LAND AREA (sq. km)	AREA NAME	LAND AREA (sq. km)
MINDANAO	**100,281.65**		
Region IX	**14,580.23**	**Region XII**	**18,568.39**
Zamboanga del Norte	6548.0136	North Cotabato	6384.6195
Zamboanga del Sur	3724.5240	Sarangani	3326.1651
Zamboanga Sibugay	2689.8444	South Cotabato	3869.1628
Isabela City	227.4829	Sultan Kudarat	4381.4131
Zamboanga City	1390.3638	Cotabato City	83.8122
Region X	**17,497.21**	General Santos City	523.2199
Bukidnon	9033.8160	**CARAGA**	**18,382.88**
Camiguin	245.5034	Agusan del Norte	2279.1365
Lanao del Norte	2236.3081	Agusan del Sur	8137.3044
Misamis Occidental	1892.1114	Surigao del Norte	2910.0084
Misamis Oriental	3053.7451	Surigao del Sur	4464.2615
Cagayan De Oro City	466.6063	Butuan City	592.1644
Iligan City	569.1150	**ARMM**	**12,244.65**
Region XI	**19,008.29**	Basilan	1126.6095
Compostela Valley	4571.8340	Lanao del Sur	3576.6536
Davao del Norte	3330.2462	Maguindanao	4799.7519
Davao del Sur	3729.6095	Sulu	1535.7223
Davao Oriental	4888.8075	Tawi-Tawi	1147.9141
Davao City	2487.7961	Marawi City	58.0027

Source: National Mapping and Resource Information Authority (NAMRIA)

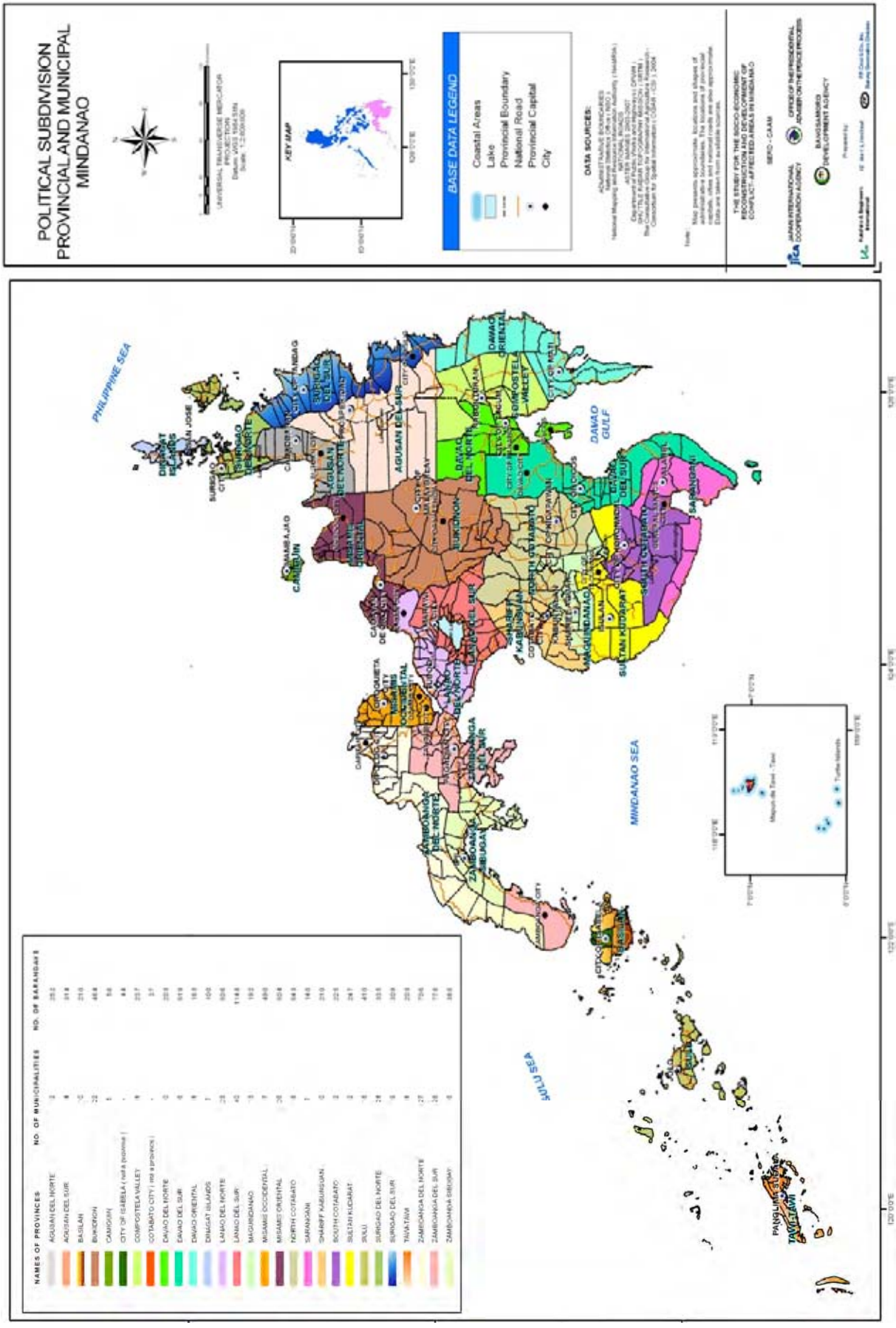


Figure 2.2-2 Mindanao Political Subdivisions by Province and Municipalities

2.2.3 Cultural Milieu: Ethnic Groupings and Religions

Thirteen ethno-linguistic groups indigenous to Mindanao have widely adopted Islam as a way of life. The three largest and politically prominent are the *Maguindanaon* (people of the flooded plains) of the five provinces (Maguindanao, Sultan Kudarat, North Cotabato, South Cotabato, and Sarangani); the *Maranaw* (people of the lake) of the two Lanao provinces; and the *Tausug* (people of the current) of the Sulu archipelago. The remaining ten are the *Yakan* (of Basilan island), *Sama* (of Tawi-Tawi), *Badjaw* (sea gypsies) of the Sulu archipelago, the *Kalagan* of Davao provinces, *Sangil* of Sarangani province, *Iranun* or *Illanun* in the border towns of Maguindanao and Lanao del Sur, *Palawani* and *Melebugnon* of Palawan island, *Kalibogan* of the Zamboanga Peninsula and the *Jama Mapun* of Cagayan de Sulu islands. These 13 groups have been collectively referred to as *Bangsamoro* (Moro nation) in various literature on Mindanao and its peoples. Despite their cultural diversity, the *Bangsamoro* share a common belief in Islam as their comprehensive way of life. Islam is the anchor of their collective identity as a people with a history that is quite distinct from that of the majority Christian Filipinos.

In addition, Mindanao is also home to 18 indigenous groups that have neither adopted Islam nor Christianity, although some members of each group have become Muslims (like many *Teduray* of Upi, Shariff Kabunsuan who have become Muslims). These groups include the *Ata, Bagobo, Banwaon, B'laan, Bukidnon, Dibabawon, Higaonon, Mamanwa, Mandaya, Manguwangan, Manobo, Mansaka, Subanon, Tagakaolo, Tasaday, T'boli, Teduray* and the *Ubo*. These groups are distributed widely over Northern, Central and Southern Mindanao, with some groups sharing common ancestral areas (like the *Teduray* and the *Maguindanaon*).

The large island of Mindanao and the other smaller islands and islets, including the Sulu archipelago, are home to a diverse culture that is popularly referred to as the "Southern Philippines". The cultural diversity of Mindanao is the result of a large influx of migrants from the north over a long period of its history. There are three main cultural groups found in Mindanao: indigenous tribes living in the highlands and remote areas; the Muslims who were early converts to Islam and who claim a significant portion of the Island as their traditional or ancestral domain; and the Christian-Filipinos who founded settlements and communities in the course of their migrations from other parts of the country.

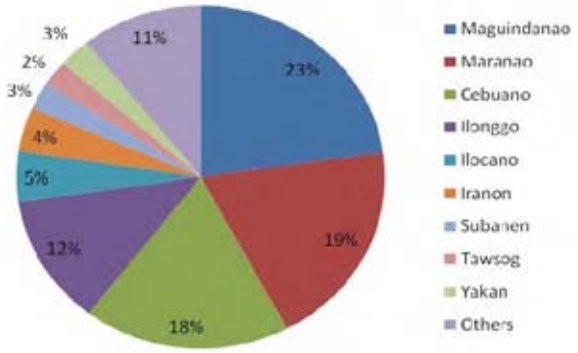


Figure 2.2-3 Major Ethnic Group in CAAMs (%)

Source: SERD-CAAM Social Survey Report 2008

Maguindanao, Maranao, Cebuano and Illongo are the four major ethnic groupings and accounts for at least 70 % of the total population in Mindanao.

There are seven (7) Muslim-Moro groups in Southern Philippines and three of these are on the island of Mindanao: the Maranao around Lake Lanao, the Maguindanao of Cotabato, and the Sangil of the region further south of Cotabato. Four groups are in the Sulu archipelago: the Yakan of Basilan Island, the Tausog in Jolo, the Samal in Tawi-Tawi and adjacent islands, and the Jama Mapun of Cagayan de Sulu (refer to Figure 2.2-3).

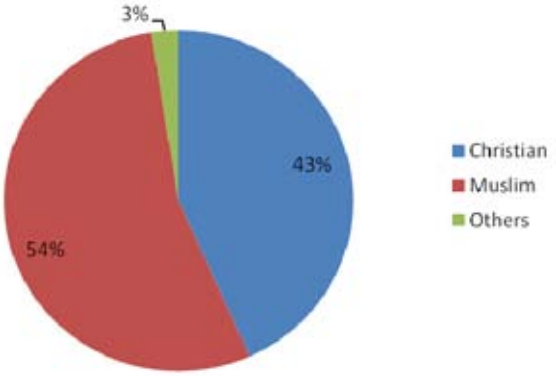


Figure 2.2-4 Major Religious Groups in the CAAM

Source: SERD-CAAM Social Survey Report, 2007-2008

The religions are distributed in all regions based on the ethnic and population distribution. As shown in Figure 2.2-4, the Christian populace constitutes 43 % of the total CAAM population while the majority (54 %) are Muslim and part of the Moslem-Moro grouping. They are distributed significantly in Regions IX, X, XI, CARAGA and Region XII. The origin of the Christian groups is traceable to some parts of Luzon and Visayas as a result of the migration pattern influenced by the Spanish colonizers and continued by the Americans.

2.3 MINDANAO PHYSICAL PROFILE

Mindanao has rich natural resources with diverse forest, water and mineral resources. The vast lowlands, tropical climate and fertile soil make the region ideal for agriculture and Mindanao has become known as the "Food Basket of the Philippines".

2.3.1 Topography and Geology

Mindanao has many distinct physiographic features, varying from flat, fertile plains to wide valleys, scattered hills and intensive mountain ranges. Mindanao consists of the mainland and island provinces and as a result the topography varies by location. The elevation of Mount Apo which rises 2,954m above sea level is also the highest point in the Philippines.

Generally, the soils found in plain areas of Mindanao are sandy to clay in nature, while those in the upland are generally mountainous soil groups. The Bureau of Soils and Water Management (BSWM) advise that the texture of these soils varies depending on its location.

2.3.2 Climate

Situated outside the typhoon belt, Mindanao enjoys a tropical climate, evenly distributed throughout the year. According to the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), the climate of Mindanao ranges between based on the seasonal distribution of rainfall. Type II climate is typified by very pronounced maximum rainfall with no dry season from the months of November to January. Type III is characterized with no very pronounced maximum rain period, with a short dry season lasting only from one to three months, and Type IV has rainfall that is more or less evenly distributed throughout the year.

2.3.3 Biological Diversity

Philippines has been declared a biodiversity hotspot by Conservation International (CI) and Mindanao with extremely diverse landscapes is home to more than 6000 different species of flora and fauna. However, some 56 species of birds, 47 species of mammals and 48 species of amphibians are under threat of extinction. The Liguasan Marsh, home to many of the species, is a vast flood plain occupying approximately 228,000 hectares during rainy season and 105,000 hectares during dry season. In addition, the Agusan Marsh, which is home to a number of rare and endangered water birds like the Oriental Darter, Purple Swamp Hen, Philippine Hawk Eagle, Spotted Imperial Pigeon and Rufous-lored Kingfisher and covers an area of approximately 14,835 hectares, became on the Tentative List of a World Heritage Site of UNESCO in 2006.

2.3.4 Land Cover, Land Use and Vegetation

For the purposes of this report "Land Cover" is used to describe the areas of natural and planted vegetation (forests, agricultural lands, marshes, rivers and creeks) and "Land Use" is used to describe the areas that have been developed for the needs of the populace (housing, commercial, institutions, recreation, utilities and roads). Thus the impact of urban development upon the land resources in Mindanao may be observed.

Data for the land cover was compiled by the Survey Geometrics Division of FF Cruz and Co., Inc. (SGD-FFCCI) for the Geographic Database Development Component of the Project. Land cover maps were generated illustrating and describing the categories/classes of land cover. These categories/classes of land cover are presented in Table 2.3-1 below. From the table it maybe seen that Mindanao is predominantly composed of agricultural areas (40%),with brushland/shrubs (27%) and secondary forests (16%). Less than 1% of Mindanao is built-up. Table 2.3-2 indicates the changes in land cover in Mindanao from 2002 to 2007.

Table 2.3-1 Summary of Land Cover by Class, Mindanao, 2007

CLASS	PERCENTAGE	HECTARES
Primary Forest	6.1	613,093.28
Secondary Forest	15.8	1,579,484.68
Brushland/Shrubs	26.8	2,682,421.32
Mangrove/Nipa	1.1	110,663.06
Grassland	6.8	676,458.41
Agricultural Area	40.3	4,032,765.54
Open/Barrenland	0.1	9,522.14
Built-up Area	0.6	64,818.91
Marshland/Swamp	1.3	134,005.63
Pond/Fishpond	0.5	47,557.27
Water Body	0.6	61,806.05
TOTAL	**100.0**	**10,012,596.20**

Source: F.F. Cruz and Co., Inc.
Note: The figures above were obtained through the computation of the digital GIS data, thus are different from those provided by NAMRIA.

Table 2.3-2 Comparative Table of Land Cover Classes, 2002 and 2007

LAND COVER/ CLASSIFICATION	2002	2007	CHANGE
Primary Forest	623,185.01	613,093.28	-10,091.73
Secondary Forest	1,555,737.66	1,579,484.68	23,747.02
Brushland/Shrubs	2,717,306.37	2,682,421.32	-34,885.05
Mangrove/Nipa	112,121.73	110,663.06	-1,458.67
Grassland	649,475.19	676,458.41	26,983.22
Agricultural Area	4,037,950.37	4,032,765.54	-5,184.83
Open/Barrenland	9,517.37	9,522.14	4.77
Built up area	64,772.62	64,818.91	46.29
Marshland/swamp	134,174.55	134,005.63	-168.92
Pond/Fishpond	46,586.21	47,557.27	971.06
Water bodies	61,768.95	61,806.05	37.10
TOTAL	10,012,596.03	10,012,596.29	0.26

Source: F.F. Cruz and Co., Inc. / Note: The figures above were obtained through the computation of the digital GIS data, thus are different from those provided by NAMRIA.

From Table 2.3-2 it may be noted that, there have been significant changes in land cover over the five -year period. The biggest reduction in brushland/shrubs, (some 35 thousand hectares) is offset against a 27 thousand hectare increase in grasslands The variations in these categories cannot be explained at this time though, a possible reason may be the clearing of the brushland/shrubs as a result of the fighting in various areas of Mindanao.

Although the primary forested areas decreased by over 10 thousand hectares, the secondary forests increased by 24 thousand hectares suggesting some reforestation has occurred. It is worthy of note that despite the increases in population discussed earlier in this report the increase in the built-up areas was minimal , with an increase of less than 50 hectares.

2.4 MINDANAO RESOURCES

2.4.1 Water Resources

Mindanao has sufficient fresh water resources to meet the requirements for agriculture, irrigation, domestic and industrial uses. The main inland water bodies include, Lake Lanao, Lake Mainit, the Pulangui River, and Liguasan Marsh. These water resources are being developed to provide a dependable and safe water supply for agricultural, domestic, commercial and industrial uses.

2.4.2 Production Land Use

Production land usage in the Mindanao is generally categorized as agricultural land, fishing areas, salt beds, production forests, mining or resource extraction activities, industrial areas, tourism areas, and open land. An estimated area of 6 million hectares in Mindanao has been classified for production land use.

2.4.2.1 Agriculture

As discussed earlier, Mindanao has very fertile soil and abundant fresh water resources, which are highly suited to agriculture. Given the rarity of typhoons, heavy rains and extreme weather conditions, its climate is also favorable to agriculture. Thus Mindanao has enhanced its capacity to contribute substantially to the Philippines total food production and it has become the leading producer of major agricultural crops for both domestic consumption and export.

The major agricultural crops farmed locally in Mindanao include corn, rice, pineapple, cassava and sweet potato, while major industrial plantation crops include coconut, banana, mango, rubber, coffee, oil palm, sugarcane and cacao. Mindanao is also well known for its more exotic fruits like lanzones, marang, mangosteen, durian, rambutan and pomelo.

The land area in Mindanao totals to 10,199,886 hectares and may be classified further as Alienable and Disposable and Forest Land (refer to Table 2.4-1).

Table 2.4-1 Agricultural Land Area and Classification

REGION	TOTAL (HECTARES)	ALIENABLE AND DISPOSABLE	%	FOREST LAND	%
MINDANAO	**10,028,164.92**	**3,926,650.44**	**39.2**	**6,009,052.70**	**59.9**
Region IX	1,458,022.87	623,967.39	42.8	832,194.84	57.1
Region X	1,749,720.53	805,370.61	46.0	944,158.82	54.0
Region XI	1,900,829.33	675,436.71	35.5	1,224,723.87	64.4
Region XII	1,856,839.26	783,513.15	42.2	1,072,805.23	57.8
CARAGA	1,838,287.52	539,351.72	29.3	1,283,570.27	69.8
ARMM	1,224,465.41	499,010.86	40.8	651,599.67	53.2

Source: National Mapping and Resource Information Authority (NAMRIA)

2.4.2.2 Livestock

Mindanao has a high potential to increase its production level of livestock despite the noted decline in production (as of 2004 see Table 2.4-2 below). The potential for the export of goat meat to the Middle East is high. Along with other livestock production; chicken, cattle and hogs Mindanao has contributed one-third of the total Philippine livestock production in thousand metric tons/live weight (refer to Table 2.4-2).

Table 2.4-2 Livestock Production, 2003 and 2004 (in thousand Metric Tons, Live Weight)

LIVESTOCK	2003		2004		% SHARE (2004)
	PHILIPPINES	MINDANAO	PHILIPPINES	MINDANAO	
Carabao	132.4	49.0	138.0	45.4	32.9
Cattle	258.5	83.2	256.0	71.4	27.9
Chicken	1,888.7	216.0	1,231.8	221.7	18.0
Goat	73.8	29.6	74.6	24.5	32.8
Hog	1,733.1	483.9	1,722.0	477.1	27.7

Source: NEDA Economic and Social Report on Mindanao (July 2006)

2.4.2.3 Fishery and Aquatic and Marine Resources

Mindanao offers a wide variety of sea foods and is the center in the Philippines for the tuna and sardines industry, and is also a major producer of carageenan. General Santos City is the Philippines leading producer of tuna and there is a strong demand for the produce, both in the local and world markets. Seaweed farming is now recognized as a potential aquaculture industry in Mindanao for export to Asian countries. Mindanao contributes 42% by weight of the total fishery and aquaculture production of the Philippines.

Table 2.4-3 indicates the volume of fishery and aquatic production in metric tons categorized as commercial and municipal. The fishery, aquatic and marine resources with high development potential are given in Table 2.4-4 and Table 2.4-5 lists the aquaculture products with high growth/industrial potential.

Table 2.4-3 Volume of Fisheries Production, 2003 (in thousand Metric Tons)

AREA	TOTAL	COMMERCIAL	MUNICIPAL	AQUACULTURE
PHILIPPINES	3,619	1,110	1,055	1,455
MINDANAO	1,509	527	371	610
% share Mindanao to PHILS	41.7	47.5	35.2	42.0
Region IX	459	212	126	121
Region X	101	40	30	31
Region XI	54	12	30	12
Region XII	242	179	4079	23
CARAGA Region	94	5	66	23
ARMM	559	80	79	401
Rest of the Phils	2,111	582	685	805

Source: NEDA Economic and Social Report on Mindanao (July 2006)

Table 2.4-4 Marine and Fishery Areas

MARINE AND FISHERY AREAS	
Panguil Bay	Sulu Sea
Butuan Bay	Davao Gulf
Gingoog Bay	Moro Gulf
Sibuguey Bay	Lake Lanao
Illana Bay	Lake Buluan
Sarangani Bay	Lake Mainit
Lianga Bay	Lake Pinamaloy
Murciellagos Bay	

Source: NEDA Economic and Social Report on Mindanao (July 2006)

Table 2.4-5 Aquaculture Products with High Potentials

MARINE	AQUACULTURE
Groupers (Lapu-Lapu)	Milkfish (Bangus)
Seabass (Apahap)	Carp (Tilapia)
Eels (Kasili)	Prawns (Sugpo)
Mussels (Tahong)	Crab (Alimango)
Oysters (Talaba)	Catfish (Hito)
Sea Urchin (Tuyom)	Aquarium Fish

Source: NEDA's Economic and Social Report on Mindanao (July 2006)

2.4.2.4 Mineral Resources

The mineral resources of Mindanao which can be classified into metallic and non-metallic deposits cover an area of almost 120,000 hectares. Mindanao's metallic reserves are estimated to be 3.6 million tons. Gold ore deposits account for almost 50% of the Philippines total reserves with nickel stocks at 63%. The non-metallic reserves are 8.6 billion tons with coal deposits accounting for some 37.5 million metric tons. Among the 6 regions, Region XII has the largest mineral resources covering an area of some 63,000 hectares and Region IX is second with some 27,000 hectares.

Tapping the mineral resources of Mindanao may potentially contribute to its development as well as the Philippines as a whole. The copper and gold deposits in South Cotabato and Sultan Kudarat provinces are some of the biggest and are considered good quality deposits with

major potential for development. More interesting the on-going exploration for copper and its associated minerals is presently being undertaken by both local and foreign companies. Small scale gold mining is also being undertaken in the provinces of Sultan Kudarat, South Cotabato and Sarangani.

Based on NEDA's 2006 report, Mindanao's mineral products amounted to PHP 743 million for metallic minerals and PHP 3.5 million for non-metallic minerals. Other metallic reserves include: iron ore, lead, zinc, chromites and magnetite. Table 2.4-6 lists Mindanao's data on metallic and non-metallic products.

Mindanao's potential mineral reserves and their corresponding values are listed in Table 2.4-7.

Large deposits of primary copper ore are found in the province of Compostela Valley while garnierite ores are found in Davao Oriental together with considerable reserves of chromite and laterite ores. Iron magnetite deposits are found in the province of Davao del Sur.

Non-metallic mineral deposits present in Mindanao include limestone, shale, magnetite and chert, limestone, guano and phosphate rocks, bentonite clay, dolomite, feldspar, silica, sulfur, diatomite, and coal. Other non-metallic minerals present in less quantity include sulphur ore, rock phosphate, feldspar ore and refractory clay.

Table 2.4-6 Mindanao Data on Metallic and Non-Metallic Products

AREA	METALLIC (In Million PhP)	% SHARE	NON-METALLIC (In Million PhP)	% SHARE
PHILIPPINE	6,636	100.0	14,255	100.0
MINDANAO	743	11.2	3,516	24.7

Source: NEDA Economic and Social Report on Mindanao (July 2006)

Table 2.4-7 Mindanao Potential Mineral Reserves

MINERAL RESERVE	VALUE (IN US$)
Copper	6.49B
Gold*	2.00 B to 3.00 B
Nickel**	2 trillion

* Gold Recovery rate is 60 % if flotation process uses mercury; 90 % if flotation process uses cyanide

** For Surigao del Norte alone, based on estimates of province. Potential mineral reserves are estimated at 109.7 million MT valued at $19,925/ton June 2006 price of nickel.

Source: NEDA Economic and Social Report on Mindanao (July 2006)

Table 2.4-8 identifies the provinces of Compostela Valley, Surigao del Norte and Zamboanga to have high mineral reserve potential. Major mining exploration of limestone, gold and copper conducted in Mindanao are listed in Table 2.4-9.

Table 2.4-8 Major Mindanao Provinces with Potential Mineral Reserves, 2003

AREA	MINERAL RESERVATIONS	LAND AREA (Has)
Compostela Valley	Gold	8,100.00
Surigao del Norte and City	Nickel, Iron and Chromite	201,487.50
Zamboanga	Coal	1,016.85

Source: NEDA Economic and Social Report on Mindanao (July 2006)

Table 2.4-9 Major Mining Exploration in Mindanao

CORPORATION/PROJECT	MINERAL RESERVES
Iligan Cement Corp.	Limestone
Mindanao Portland Cement Corp.	Limestone
Holcim Cement Corp.	Limestone
TVI Canatuan Au Project	Gold
Small Scale Mining Permittees	Gold
Sagittarius Mining Inc.	Copper
Pacific Cement Corp.	Limestone
King-king Mining Corp.	Copper
Mase Metals Mining Corp. Masara Au	Gold
Davao Union Cement Corp.	Limestone
T'boli Au Project	Gold

Source: NEDA Economic and Social Report on Mindanao (July 2006)

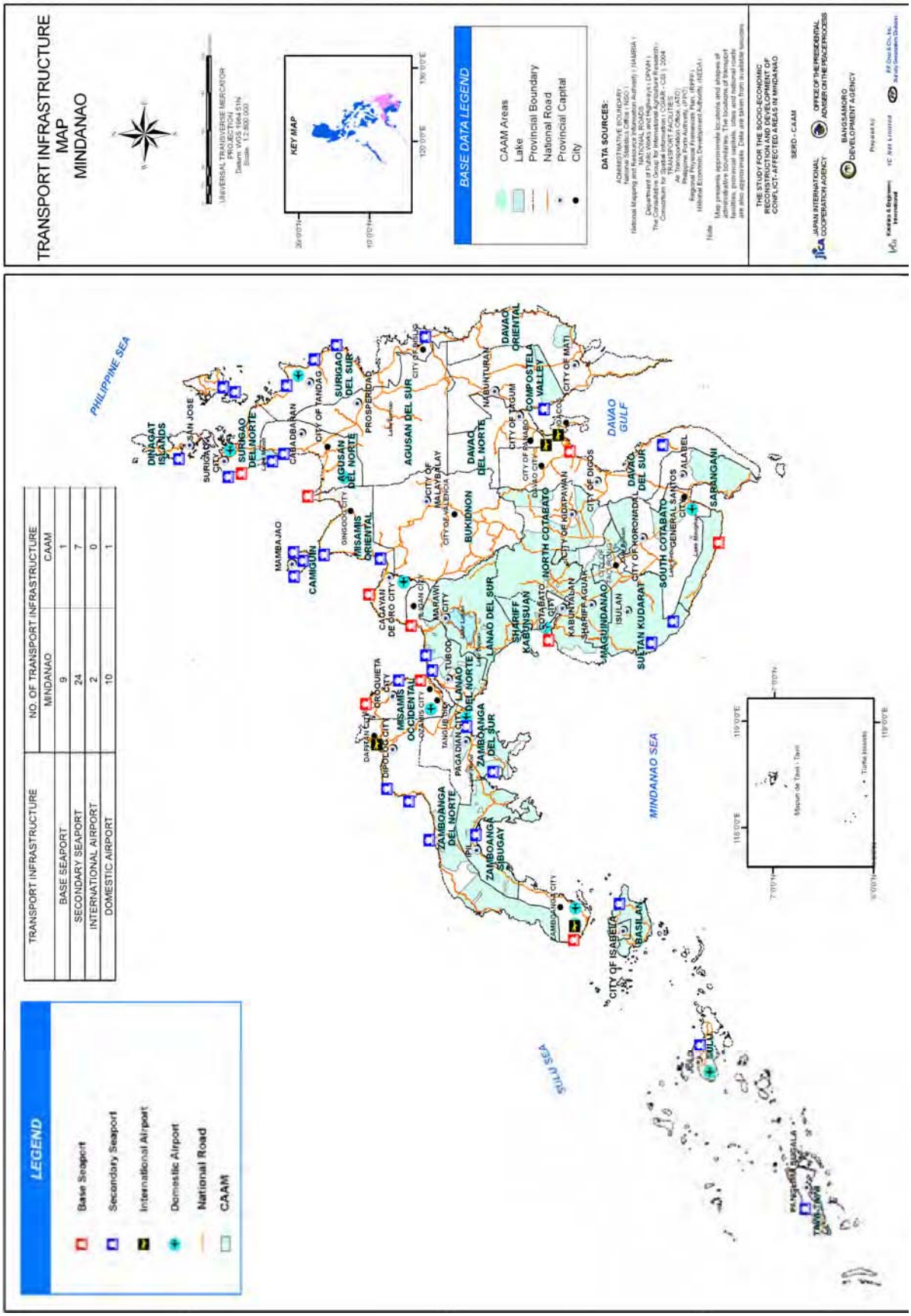


Figure 2.4-1 Transportation Facilities and Road Network in Mindanao inclusive in CAAM

2.4.2.5 Forestlands

Production forest covers about 3.25 million hectares of the total land area of Mindanao. These forestlands also include areas where annual and perennial crops are cultivated. Also there are portions of mangrove areas that are also classified for production land uses.

According to the World Wildlife Fund, the mountain forests of Mindanao consist of hill dipterocarp forests, lower and upper montane forest, elfin woodland (mossy forest), and summit grasslands. The dominant forest type in Mindanao is dipterocarp forest.

The forest resources, including flora, can be found in all of the six regions. The forest ecosystem includes species of Pitcher plants, Rafflesia, Orchids, Narra, Igem, Almaciga, Aloe or Sabila, Ferns, Cactus, Cycas or Pitogo, Bamboo and Rattan. In Davao Oriental, there are species of toothed seagrass, and tropical eelgrass.

2.4.2.6 Industrial Areas

There are about 6,500 hectares earmarked for industrial activities and development in Mindanao. The industrial development areas are suitable for manufacturing/processing or other industrial establishments where the required support facilities are available or could be feasibly established. These areas are located in PHIVIDEC Industrial Estate in Misamis Oriental (PIE-MO) which covers 3,000 hectares a further 2,700 hectares are designated for industrial development in Region IX and the Maguindanao Eco-city with 350 hectares for industrial development is located in Parang, Maguindanao.

2.4.2.7 Tourism Areas

Mindanao abounds with diverse and abundant man-made and natural attractions and socio-cultural resources. These include; scenic spots and natural parks, beaches, diving sites, waterfalls and lagoons, historical places and cultural festivals. Also the ecotourism sites at Mt. Apo, Liguasan and Agusan marsh are further potential tourist destinations.

2.4.3 Protection Land Use

2.4.3.1 NIPAs Areas and Environmentally Constrained Areas (ECAs)

National Integrated Protected Areas System (NIPAS) are defined as those areas that encompass biologically important public lands such as habitats of rare and endangered species of plants and animals, and include natural parks, protected seascapes and landscapes, natural monuments, proclaimed watersheds, and caves and cave resources. To date, some 72 sites in

the 6 regions of the Mindanao with an estimated area of 762,000 hectares have been declared under the NIPAS.

2.4.3.2 Non-NIPAS Areas

The areas initially identified outside the NIPAS are wetlands (coastal and freshwater), important bird areas, second growth forests, protected agricultural lands, buffer strips and easements, and ecotourism sites (natural/cultural heritage areas). The non-NIPAS areas in the Mindanao cover an estimated area of 1.65 million hectares. The biggest non-NIPA area can be found in Region X, its 631,000 hectares contributes almost 4 % to the total non-NIPA land area. About 184,000 hectares in Northern Mindanao has been tagged as ancestral lands and are now subject to claims by the Indigenous Peoples of the region. Equal importance should be accorded to non-NIPAS areas in terms of conservation and sustainable development as these areas are also experiencing various forms of exploitation and degradation.

2.4.4 Built-Up Areas

In Regions IX and XI, the built-up areas cover an estimated 164,000 hectares. The settlements and large institutions in both the urban centers and rural areas are classified under built-up land use and are concentrated in major urban centers such as the cities of Davao, Butuan, Cagayan de Oro, Iligan, Zamboanga, Cotabato and key provincial growth centers.

The various regional development strategies adopted by Local Governments provide the necessary impetus to push growth and development in the key provincial growth areas. These growth areas are envisioned to form a strong competitive network that can sustain and grow businesses, services and facilities as well as provide the stimulus to expand the current settlements.

2.4.5 Major Natural Disaster Prone Areas

2.4.5.1 Flooding

Areas along major rivers can be considered prone to floods in Mindanao. In Region X, the rivers of Cagayan de Oro, Iponan, Alubijid, Oroquieta, Gingoog, Tudela, Plaridel, among others are highly susceptible to flooding. There is always the possibility of back water effects causing upstream flooding, and widespread, prolonged damage. Likewise, low-lying areas along the coasts are prone to high tidal or typhoon tidal surge flooding. Coastal cities and towns in eastern and western Misamis Oriental and eastern Misamis Occidental have been identified as prone to coastal flooding. Damage may be exacerbated when accompanied by typhoon and river flooding.

2.4.5.2 Tidal Waves and Tsunamis

Tsunamis are sea waves generated mostly by submarine earthquakes. Historical data indicates that the submarine quakes in Northern Mindanao have originated from the deep Bohol Sea and the Philippine Sea. The 1923 earthquake off the Diwata Point triggered a 5-meter-high tsunami and affected the coastal site of Gingoog Bay. Other coastal areas prone to tsunami in Mindanao are Lopez Jaena in Misamis Occidental and Magsaysay and Gingoog City in Misamis Oriental.

2.4.5.3 Salt-Water Intrusion

Salt-water intruded areas are usually found along the coasts in areas that are intensively utilized for fishpond and other aquaculture activities. Based on the data gathered, the regions that reported this type of hazard are Northern Mindanao and Davao. In Region X, 2 municipalities and 3 cities were identified to be prone to salt-water intrusion. These are the low-lying coastal areas similar to Cagayan de Oro, Oroquieta and Ozamiz, the towns of Plaridel and Baliangao in Misamis Occidental. Another cause of this hazard is the over-pumping of groundwater. In 1973, four of the shallow wells that tap the shallow aquifer in Cagayan de Oro City where intruded by saline water which greatly reduced the available water supply in the area. Refer to Table 2.4-10 for a list of Major Natural Disaster Prone Areas.

Table 2.4-10 Major Natural Disaster Prone Areas

HAZARDS	LOCATION (REGION, MUNICIPALITY,)	REMARKS
Weather and water-related hazards	Region IX, Coastal barangays of Zamboanga City, Zamboanga del Sur and Zamboang del Norte	
Flooding	Region X, rivers of Cagayan de Oro, Iponan, Alubijid, Oroquieta, Gingoog, Tudela, Plaridel Coastal cities and towns in eastern and western Misamis Oriental and eastern Misamis Occidental	There is always a possibility that their floodplains will be in danger of upstream flooding, which can cause widespread and prolonged damage. Likewise, low-lying areas along the coasts are prone to tidal flooding or one brought by tidal surge due to typhoons Damage is light except when it is accompanied by typhoon and riverine flooding.
Flooding	Region XI, 90,438 hectares of the Davao region with Davao del Norte, the largest, pegged at about 40,726 hectares, situated along the Tagum-Libuganon River, particularly within the municipality of Carmen. Agusan River which cuts through the municipalities of Monkayo, Compostela, New Bataan, Sto. Tomas, Asuncion, Carmen and the City of Tagum. Municipalities of Malita and Hagonoy in Davao del Sur.	About 6,425 hectares of the Carmen's municipality are prone to floods.

HAZARDS	LOCATION (REGION, MUNICIPALITY,)	REMARKS
Tidal waves or tsunamis	Coastal areas prone to tsunamis are Lopez Jaena in Misamis Occidental and Magsaysay and Gingoog City in Misamis Oriental	Historic submarine quakes in Northern Mindanao originate from the deep Bohol Sea and the Philippine Sea., The 1923 earthquake off the Diwata Point triggered a more or less 5-meter-high tsunami and affected the coasts of Gingoog Bay.
Salt-water intrusion	Region X Low-lying coastal areas like in Cagayan de Oro, Oroquieta and Ozamiz, the towns of Plaridel and Baliangao in Misamis Occidental Northern Mindanao and Davao	One cause of this hazard is the over-pumping of ground water., In 1973, four of the shallow wells that tap the shallow aquifer in Cagayan de Oro City were intruded by saline water which greatly reduced the available water supply in the area
Salt-water intrusion	Region XI Davao Oriental and between Maco in Compostela Valley and Panabo in Davao del Norte,, Davao del Sur along coastal areas of Hagonoy, Padada, Sulop, Malalag, Sta. Maria and Don Marcelino	

Source: DENR

2.4.5.4 Areas affected by volcanic hazards and Lahar-prone Areas

Volcanic hazards involve dangers posed eruptions and water-rich debris flow (lahar) and other down slope movements of loose materials on the volcanoes slopes. Lahars, or mudflows, become a serious hazard when heavy rains saturate the thick ash deposits and the increased self weight causes them to flow down the slopes. Refer to Table 2.4-11 to determine the areas affected by volcanic hazards and lahar-prone areas.

Table 2.4-11 Areas affected by volcanic hazards and Lahar-prone Areas

HAZARD	LOCATION (REGION, MUNICIPALITY, BARANGAY)	REMARKS
Volcanic Hazards	Region IX Anecdotal accounts indicate that Mt. Sirungan in Lakewood, Zamboanga del Sur erupted in the 1800s	A detailed geological study is necessary as no scientific documentations were ever made to support this account.
Volcanic Hazards	Region X Following volcanoes Calayo, Hibok-Hibok, Kalatungan, Makaturing, and Ragang	These active volcanoes with historical accounts of eruptions pose hazards that could affect the region's physical and socio-economic conditions.
Lahar-Prone Areas	Region X Provinces of Bukidnon, cities of Cagayan de Oro, Tangub, Ozamiz and Oroquieta; and towns of Sapang Dalaga, Calamba, Baliangao, Plaridel, and Lopez Jaena in northern Misamis Occidental	
Volcanic Hazards	Region XII Three active volcanoes: Mt. Radang, Mt. Matutum and Mt. Parker Mt. Radang has erupted nine times, the last of which was in 1915 Mt. Matutum erupted last 1911 but there are no records on the number of eruptions that took place prior to that year Mt. Parker in South Cotabato is known to have erupted 300 years ago Active volcanoes: Mt. Hibok-Hibok in Camiguin Island, Mt. Makaturing in Lanao del Sur, Mt. Calayo and Mt. Kalatungan in Bukidnon. Mt Apo in Cotabato Province is a dormant strato volcano	

Source: DENR

2.4.5.5 Erosion and Soil Mass Movement

Mass movement or mass wasting is the down slope movement of the rock and soil caused by gravity. This often results in hazards such as landslides, creep, subsidence and settlement. The major agent of erosion in the region is water caused by rainfall eroding the top soil and soft strata. River erosion is a natural, continuous and generally predictable process involving abrasion and scouring of stream banks and beds. It is a primary process of bringing changes in the landscape. However, quarrying along rivers also causes excessive river bed and stream bank erosion. Coastal erosion is also a natural process rather than a natural hazard and is in general, a continuous, predictable process that can be mitigated with proper engineering measures. It becomes more of a hazard when buildings are erected too close to the shore line and are undermined by the wave action.

In Region XI, some 850,000 hectares or 43% of the total land area of the region is severely eroded. Most of these areas have a topographical slope of more than 18%. The provinces of Compostela Valley, Davao del Norte and Davao del Sur are most affected. This is attributed to the inappropriate cutting of trees, kaingin (slash-and-burn), inappropriate upland farming, encroachment of squatters and settlers in upland areas and inappropriate mining activities. In Region XII, areas with a high probability of severe erosion are located in Libungan, Alamada, Banisilan, Carmen, Antipas, Magpet, President Roxas, Arakan, Tulunan, and Makilala in North Cotabato; Columbio, Lutayan, Esperanza, Lebak, Kalamansig, Isulan, Ninoy Aquino and Bagumbayan in Sultan Kudarat; Tampakan, Tantangan, Banga, Tupi, Polomolok, Lake Sebu and T'boli in South Cotabato; Maasim, Malungon, Alabel, Malapatan, Glan and Maitum in Sarangani; and in General Santos City. Refer to Table 2.4-12 for areas prone to erosion and mass movement.

Table 2.4-12 Erosion/Mass Movement

HAZARD	LOCATION (REGION, MUNICIPALITY, BARANGAY)	REMARKS
Erosion or Mass Movement	Region IX several barangays of Zamboanga City such as in Putik, Lumbangan, Mangusu, Tumaga, Luyahan, Sinunuc, San Roque, Ayala, Upper Pasonanca, Tuktukalaw, Quiniput, Muti, Limpapa, Abong-abong and Murok documented in Siosocon, Dipolog City, Jose Dalman, Manukan, Dapitan and Sibutad less prevalent in Zamboanga del Sur as the phenomenon was only observed in Pagadian City, Mahayag and Lakewood Least affected province is Zamboanga Sibugay, phenomenon was observed only in Ipil and Buug	
Erosion or Mass Movement	Region XI a slope of more than 18 %, a total of 847,422 hectares or 43 % of the total land area of the region are severely eroded, particularly the provinces of Compostela Valley, Davao del Norte and Davao del Sur	attributed to the rampant illegal and inappropriate cutting of trees, kaingin (slash-and-burn), inappropriate upland farming, encroachment of squatters and settlers in upland areas and inappropriate mining activities in the areas

HAZARD	LOCATION (REGION, MUNICIPALITY, BARANGAY)	REMARKS
Erosion or Mass Movement	Region XII High probability of severe erosion occurrence in Libungan, Alamada, Banisilan, Carmen, Antipas, Magpet, President Roxas, Arakan, Tulunan, and Makilala in North Cotabato; Columbio, Lutayan, Esperanza, Lebak, Kalamansig, Isulan, Ninoy Aquino and Bagumbayan in Sultan Kudarat; Tampakan, Tantangan, Banga, Tupi, Polomolok, Lake Sebu and T'boli in South Cotabato; Maasim, Malungon, Alabel, Malapatan, Glan and Maitum in Sarangani; and General Santos City	

Source: DENR reports, The JICA Study Team

2.5 GROSS REGIONAL DOMESTIC PRODUCT (GRDP)

2.5.1 Background

From the year of 2002 to 2007, the National Statistical Coordinating Board (NSCB) has produced data on gross domestic product (GDP) at national and regional level. GRDP publications are prepared by the Economic Statistics Office (ESO) and the Sub-national Statistics Office (SnSO) of the NSCB and are published annually. The latest GRDP statistics were released in July 2008 and comprises the 2005-2007 GRDP publication with 1985 as the base year.

The Gross Domestic Product (GDP) may be defined as the total market value of all goods and services produced within a country in a given period of time (usually a calendar year). It is one of the measures of national income and output for any given country's economy, while the Gross Regional Domestic Product (GRDP) is the aggregate of the gross value added of all the resident producer units in the region. GRDP includes regional estimates on the three major sectors including their sub-sectors namely: (1) Agriculture, Fishery and Forestry, (2) Industry Sector, and (3) Service Sector.

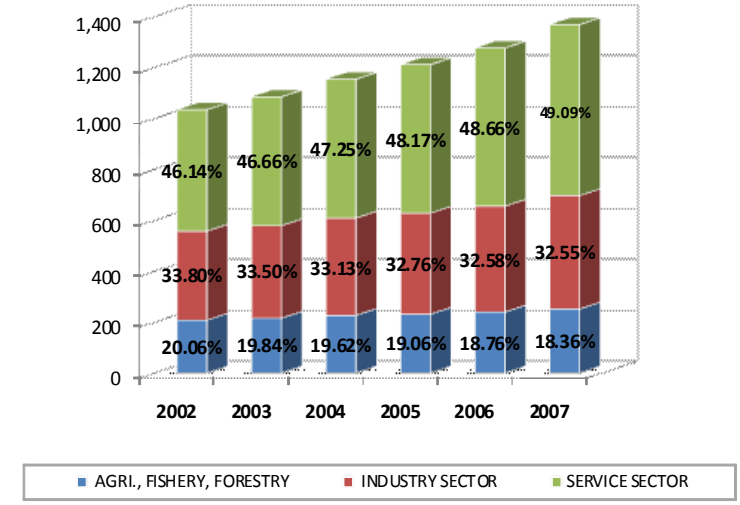
Data collated from NSCB's GRDP publication served as basis in determining the economic performance of the regions in the Philippines. Moreover, the basic data contained in such publication, particularly the GDP and GRDP, formed part of the bases used in the SEDP formulation.

2.5.2 GDP of the Philippines by Industrial Origin

NSCB's latest GDP statistics shows that the Philippine economy grew at 7.2% in 2007 or 1.3 billion from 5.4% or 1.2 Billion in 2006, backed by an environment of low inflation, low interest rates, and a strong peso. All the major industries contributed to the growth of the Gross Regional Domestic Product (GRDP). Figure 2.5-1 presents the GDP of the Philippines.

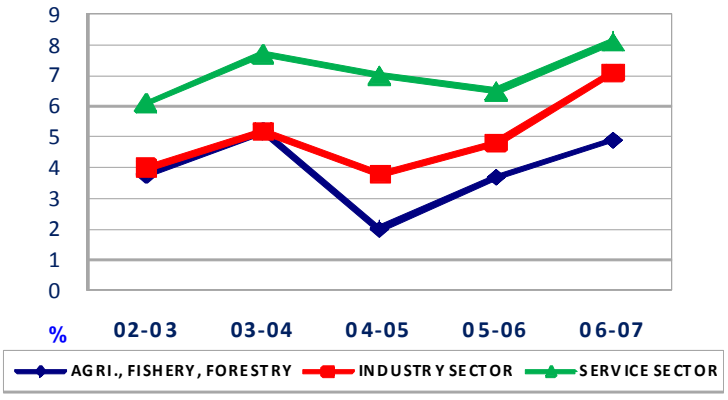
The service sector consistently registered the highest percentage share in GDP in each of the five annual periods. In 2007, it had the highest share of 49%, almost half of the Philippines GDP. In contrast, agriculture, fishery and forestry registered the lowest share of GDP during each of the periods, with its highest share of 20% in 2002. The industry sector has consistently registered a declining share of the GDP from 2002-2007. Its highest share was in 2002 with 34%, roughly one-third of the country's GDP.

In terms of GRDP growth, the Agriculture, Fishery and Forestry (AFF) sector recorded a moderate expansion from 239 million or 3.7 % in 2006 to 251 Million or 4.9 % in 2007. Industry rose faster at 445 Million or 7.1 % in 2007 from 415 Million or 4.8 % in 2006, while services grew to 671 Million or 8.1 % in 2007 from 621 Million or 6.5 % in the previous year. (see Figure 2.5-2)



Source: NSCB

Figure 2.5-1 GDP of the Philippines



Source: NSCB

Figure 2.5-2 GRDP growth, the Agriculture, Fishery and Forestry (AFF)

2.5.3 Comparative Growth Rates of Regional Economy

From 2004 to 2007, nine out of seventeen regions exhibited continuous growths. These were; Cordillera Administrative Region, Central Luzon, CALABARZON, Western Visayas, Northern Mindanao, Davao Region, SOCCSKSARGEN, ARMM and CARAGA. Regions which had a fluctuating growth were; National Capital Region, Ilocos Region, Cagayan Valley, MIMAPORA, Bicol Region, Central Visayas, Eastern Visayas and Zamboanga Peninsula.

Zamboanga Peninsula recovered from having the lowest growth of 2.1% in 2006 to 7.4% in 2007. Other growing regional economies included CARAGA and Northern Mindanao.

In 2007, two Regions in Mindanao particularly, in CAAM, registered higher than national growth (7.2%) with Region X (Northern Mindanao) at 7.9% and the Zamboanga Peninsula at 7.4 %. The other three regions in CAAM accelerated growths between 2006 and 2007.The Growth of regional economies is illustrated in Figure 2.5-3.

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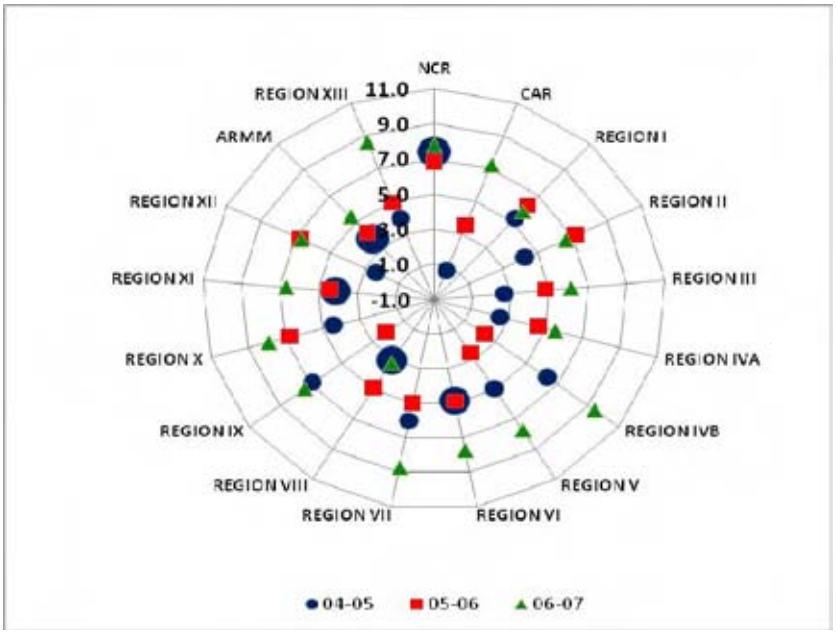


Source: NSCB

Figure 2.5-3 Comparative Growth Rates of Regional Economies

2.5.4 GRDP of the Five Regions in Mindanao by Industrial Origin

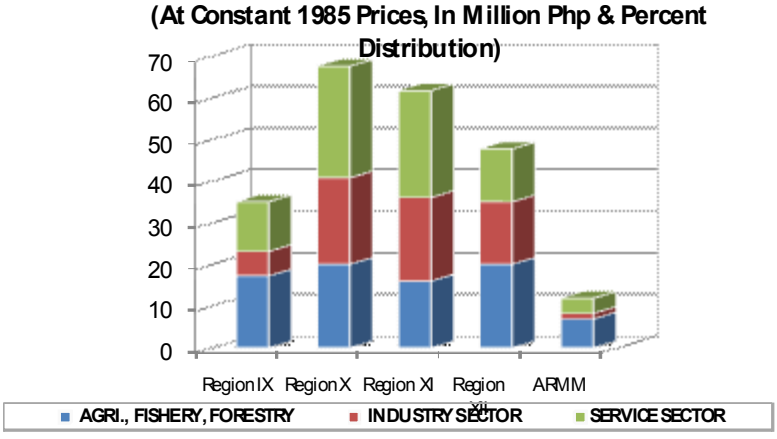
The five regions in Mindanao, which comprise the CAAM, exhibited accelerated growths from 2002 to 2007. As stated above, in 2007, Region X-Northern Mindanao recorded the highest GRDP among the five regions with a 7.9% growth with its service sector supporting the region's economy with the largest input.

Region IX, Zamboanga Peninsula, registered the second highest GRDP when its economy increased from 2.1% in 2006 to 7.4% in 2007. NSCB's GRDP statistics, indicate the Agriculture, Fishery and Forestry (AFF) Sector influenced the robust improvement of the region.

Other regions of note were Region XI-Davao Region and XII-SOCCSKSARGEN. Both recorded 6.7% growths in their economy in 2007. Davao region's growth from 4.3% in 2006 was primarily due to the 11.9% increase in its industry sector although the region's services sector dominates the economy. In SOCCSKSARGEN, the AFF Sector contributed the most to the total output.

ARMM's economy showed improvement in 2007 as it recorded a 5.4% growth from 3.7% in 2006, largely due to the performance of its AFF sector.

In conclusion, Zamboanga Peninsula, SOCCSKSARGEN and ARMM relied on growth in their AFF Sector in 2007 (See Figure 2.5-4) to bolster their economy while Northern Mindanao and Davao Region relied on the Services sector. Also, the industry sector exhibited positive developments during 2007 and supported the AFF and Services sectors in driving each region's economy.



Source: NSCB

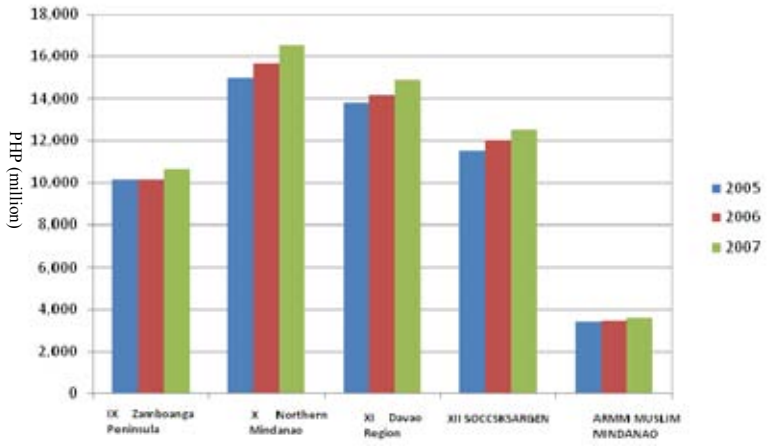
Figure 2.5-4 2007 GRDP of the Five Regions in Mindanao

2.5.5 Per Capita GRDP of the Five Regions in Mindanao

Regions IX, X, XI, XII and ARMM grew annually in terms of Per Capita GRDP from 2005 to 2007. Although ARMM experienced accelerated growth in 3 years, it only grew one-quarter of the other regions. Among the five regions, Northern Mindanao consistently had the highest per capita GRDP from 2005 to 2007 followed by Davao Region, SOCCSKSARGEN, Zamboanga Peninsula and ARMM. (See Table 2.5-1 and Figure 2.5-5)

Table 2.5-1 Per Capita GRDP of the Five Regions in Mindanao, 2005-2007

REGION/YEAR	2005	2006	2007
Region IX- Zamboanga Peninsula	10,143	10,147	10,679
Region X- Northern mindanao	14,942	15,651	16,537
Region XI-Davao Region	13,795	14,157	14,866
Region XII-SOCCSKSARGEN	11,502	11,982	12,505
ARMM	3,433	3,479	3,582



Source: NSCB

Figure 2.5-5 Per Capita GRDP of the Five Regions in Mindanao, 2005-2007

2.6 TRANSPORTATION SYSTEMS AND LOGISTICS INFRASTRUCTURE

The infrastructure is the conduit for physical integration among areas within the region, and also provides necessary links to other parts of the Philippines. The infrastructure also has a role in providing relief to communities from hazards and dangers associated with natural calamities. Transportation systems and facilities serve as the backbone of economic development. Most of the arterial roads (national highways and provincial roads) connecting the 13 CAAM provinces are in good condition. However, some of the sections have been identified as requiring rehabilitation and these are being undertaken by the various project

packages funded by international donor organizations[1]. Within CAAM, there are two international airports (General Santos and Zamboanga), and an international standard port, in General Santos City (the Makar Wharf). These serve as Mindanao's main gateways to and from other parts of the Philippines and major cities abroad. Other secondary and feeder airports as well as municipal wharfs and seaports play a vital role in the day-to-day needs of the people and businesses in the different parts of Mindanao, including the CAAM areas.

2.6.1 Transportation Mode

2.6.1.1 Road and Land Transportation

Mindanao has an estimated total road length of 60,000 kilometers (km). Among the six regions, Northern Mindanao and Davao have almost half of the total road length with 19,251 km and 15,343 km respectively. Inland and inter-province transport is mostly by buses and vans. Public utility buses (PUBs) with both air conditioning and non-air-conditioned units serve the inter-regional routes together with commuter vans, with a capacity of 14 to 18 passengers. The most common mode of public transport for inter-municipality routes in the region is the public utility jeepney (PUJs) and the local variant of six-wheeled PUJs with a truck engine and a bigger body. The popular mode of transport serving the interior barangays of cities and municipalities remains the tricycle. The other unconventional types of transport, more common in the rural areas, are the Multicab - a small utility vehicle with 3-stroke engine and an 11 passenger-capacity; single motorcycles with extended seat to accommodate six passengers, locally known as "habal-habal" or "skylab", the "tricyboat", a trisikad powered by a single stroke motor engine commonly used in pump boats; and the "kuliglig", a cart drawn by a hand tractor for farm cultivation. Refer to Photo 2.6-1.

Photo 2.6-1 A picture of a habal-habal.
This is a widely popular term used by Mindanaons to refer to motorcycles which are used as passenger transport.
Source: REAP-MP funded JBIC and Philippines Provincial Road Management Facility (PRMF) by AUSAID.

[1] Road Sector Improvement Project by ADB to commence later part of 2009, ongoing NRIMP-II and III under the World Bank, Infrastructure Land Use.

2.6.1.2 Air Transportation

There are over 21 airports of varying types in Mindanao: international, secondary, and feeder. The three international airports are located in Zamboanga City, General Santos City and Davao City. At present, the two major local airlines, Philippine Airlines and Cebu Pacific, have regular flights to and from the international and secondary airports.

2.6.1.3 Water Transportation

The sea transportation system remains the most economical and is the most frequently used mode of transportation along the coast lines of the mainland and the island provinces of Mindanao. The region has 68 ports and sub-ports of entry.

The main ports in Mindanao are the Ports of Zamboanga City, Pagadian City and Pulawan (Dapitan City) in Region X. In SOCSKSARGEN, the notable ports are: the Makar Wharf in Gen. Santos City classified as a port of entry with international standards; the Cotabato City wharf which is classified as a sub-port of entry, caters to domestic sea crafts/launches sailing to Pagadian City; and the Gen. Santos Fish Port Complex (GSFPC) considered the country's second largest fish port next to Navotas. The GSFPC started operations in 1997.

2.6.2 Road Networks in Mindanao

2.6.2.1 Overview of Road Network in Mindanao, by Region

As of April 2006, there is a total of 7,993 kilometers of the national road networks in Mindanao. These are classified into National Arterial Roads with 3,813 kilometers and National Secondary Roads with 4,180 kilometers (see Figure 2.6-1). Among Mindanao Regions, Region X (Northern Mindanao) had the longest length of national roads and length of paved national roads (refer to Table 2.6-1).

Table 2.6-1 Mindanao National Road Network by Region, 2006

REGION	CURRENT LENGTH (KM)
Mindanao	7,992.87
Region IX	1,140.22
Region X	1,618.13
Region XI	1,474.96
Region XII	1,387.74
CARAGA	1,372.53
ARMM	999.29

Source: Mindanao Road Statistics, DPWH-Mindanao Regions

2.6.3 Seaports in Mindanao

2.6.3.1 Overview of Seaports in Mindanao by Region

There are 19 major public seaports in Mindanao. These ports are classified as Port of Entry (serves large inter-island vessels) and Sub-ports of Entry (serves smaller inter-island vessels). Complementing these major ports are several municipal ports, fishing ports and private ports scattered in many coastal areas in Mindanao. See Table 2.6-2 for a list of Ports in CAAM and their corresponding classification.

Among the major ports in Mindanao, the Cagayan de Oro Port had registered the highest cargo traffic handled in 2002, while the Ozamis Port handled the most number of passengers in the same year. The International Ports of Davao (Sasa Wharf) and General Santos (Makar Wharf) serve vessels mostly coming from and heading to Singapore, Indonesia, Malaysia and Japan to export products from Mindanao products (fresh fruit and vegetables)

Table 2.6-2 Ports in CAAM

PORT CLASSIFICATION	NAME OF PORT/LOCATION
International/Port of Entry	Polloc Port, Parang, Maguindanao, ARMM
Subport of Entry	Pagadian Port, Pagadian City, Region IX Lamitan Port, Isabela, ARMM
Municipal Ports	Isabela City Port, Region IX Siocon, Zamboanga del Norte, Region IX Ipil, Zamboanga Sibugay, Region IX Malangas, Zamboanga Sibugay, Region IX Olutanga, Zamboanga Sibugay, Region IX Talusan, Zamboanga Sibugay, Region IX Naga, Zamboanga Sibugay, Region IX Margosatubig, Zamboanga del Sur, Region IX Glan, Sarangani, Region XII Kalamansig, Sultan Kudarat, Region XII Bayang, Lanao del Sur, ARMM

Source: NEDA Economic and Social Report (July 2006)
Regional Physical Framework Plans

2.6.4 Airports in Mindanao

2.6.4.1 Overview of Airports in Mindanao

Airports in Mindanao are classified according to the following: a) alternative international airports are airports serving principal centers of the country with regular domestic flights and allowed to accommodate international flights; b) trunkline airports are those that serve principal commercial centers of the country with regular commercial flights having high traffic density; c) secondary airports are those that serve towns and cities with commercial flights but have less density of traffic; d) feeder airports are those located in towns and rural areas with no regular commercial flights; e) private airstrips are those that are used by private

persons and private companies. Mindanao has 15 active public airports managed by the Civil Aviation Authority of the Philippines (CAAP) and some private airstrips used by private individuals and private companies located in different areas in Mindanao (see Table 2.6-3).

Table 2.6-3 Existing Public Airports in Mindanao

REGION	NAME OF AIRPORT	CLASSIFICATION	LOCATION
IX	Zamboanga Airport	Alt. International	Zamboanga City
	Pagadian Airport	Secondary	Pagadian City, Zamboanga del Sur
	Dipolog Airport	Secondary	Dipolog City, Zamboanga del Norte
	Siocon Airport	Feeder	Siocon, Zamboanga del Norte
X	Lumbia Airport	Trunkline	Cagayan de Oro City
	Ozamis Airport	Secondary	Ozamis City, Misamis Occidental
	Baloi Airport[1]	Secondary	Baloi, Lanao del Norte
XI	Davao Intl. Airport	Alt. International	Davao City
	Mati Airport[2]	Secondary	Mati, Davao Oriental
XII	Gen. Santos Airport	Alt. International	Gen. Santos City
	Lebak Airport[3]	Secondary	Lebak, Sultan Kudarat
XIII	Butuan Airport	Trunkline	Butuan City, Agusan del Norte
	Bislig Airport	Secondary	Bislig, Surigao del Sur
	Surigao Airport	Secondary	Surigao City, Surigao del Norte
	Tandag Airport	Secondary	Tandag, Surigao del Sur
ARMM	Awang Airport	Trunkline	DOS, Maguindanao
	Jolo Airport	Secondary	Jolo, Sulu
	Sanga-Sanga Airport	Secondary	Bongao, Tawi-Tawi
	Malabang Airport[4]	Secondary	Malabang, Lanao del Sur

[1] Baloi Airport had been closed since 1992; [2]Mati Airport closed to traffic; [3]Lebak Airport had been closed since 2003

Source: NEDA Economic and Social Report (July 2006) and Regional Physical Framework Plans

2.6.4.2 Ongoing Airport Projects in Mindanao

Most of the ongoing airport projects in Mindanao involve the improvement of existing and operational airports under the management of Civil Aviation Authority of the Philippines (CAAP) of the Department of Transportation and Communications (DOTC). The only two ongoing new airport projects in Mindanao are the: a) Laguindingan International Airport in Misamis Oriental; and b) M'lang Airport in Cotabato Province (see Table 2.6-4).

Table 2.6-4 Airports Located Outside CAAM but with Service Areas in CAAM

NAME OF AIRPORT	LOCATION	SERVICE AREA WITHIN CAAM
Zamboanga Airport	Zamboanga City	Basilan, Zamboanga Sibugay
Dipolog Airport	Dipolog City, Zamboanga del Norte	Salug, Zamboanga del Norte
Gen. Santos Airport	Gen. Santos City	Glan, Kiamba, Maasim, Maitum, Malapatan all in Sarangani Province; Polomolok and Tupi of South Cotabato; Lutayan and Palimbang of Sultan Kudarat
Davao Intl. Airport	Davao City	Pantukan, Compostela Valley; Tarragona, Davao Oriental

Source: NEDA Economic and Social Report (July 2006); Regional Physical Framework Plans

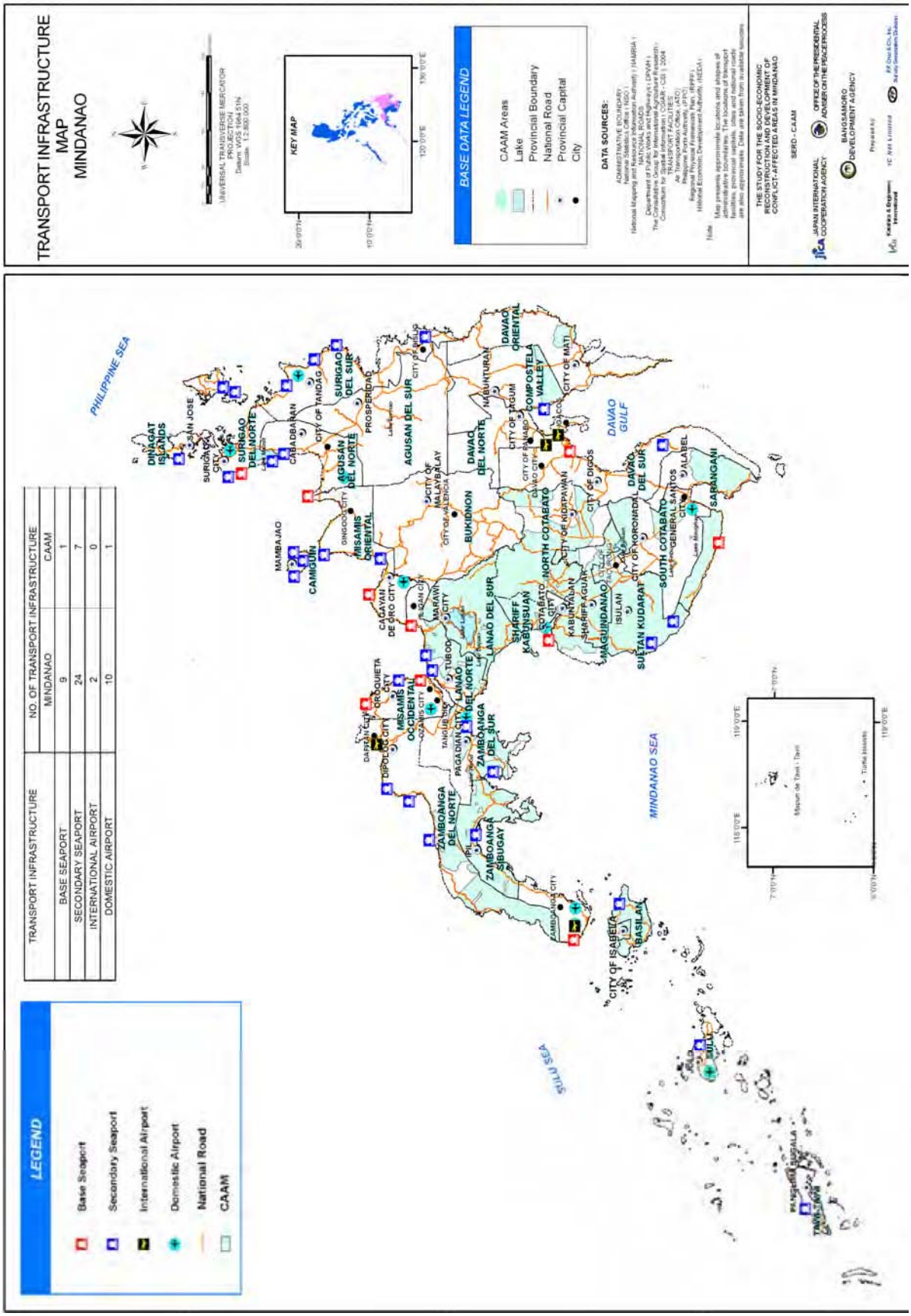


Figure 2.6-1 Transportation Facilities and Road Network in Mindanao inclusive in CAAM

2.7 UTILITY INFRASTRUCTURE

2.7.1 Water Sources

There are 128 water districts providing domestic water supply services to households and industries in Mindanao. The majority of the households in rural barangays are served with Level I (stand-alone water points, e. g., hand pump, shallow well, rainwater collector) and Level II water systems (Piped water with a communal water point, e. g., borewell, spring system). Level III systems (Piped water with a private water point, e. g., house connection) serve most of the households and industries in the built-up areas.

2.7.2 Solid Waste Disposal

Solid waste collection and disposal systems vary widely across the cities and municipalities of the region. Collection of solid waste is the responsibility of the local governments and is usually achieved using mechanical equipment such as dump trucks. However, in some areas these are observed to be generally inadequate but in other areas (Kidapawan City), modern compactor equipment is used to collect the solid waste from households.

There have been several proposed new waste disposal sites in Mindanao, but many of the urbanized municipalities, as well as cities, have yet to establish a controlled dump/sanitary landfill facility. A number of material recovery facilities (MRF) have been initiated in some areas (Zamboanga City), the extent of institutionalizing remains a challenge to the LGUs.

However, there are LGUs in Mindanao; Iligan City and Camiguin Province, which have been cited by the DENR Central Office as models of ecological solid waste management. At the time of compiling this report there are no reports available on publicly managed liquid waste disposal facilities with most local sanitation offices report a high prevalence of private-owned septic tanks.

2.7.3 Energy and Electrification in Mindanao

Northern Mindanao continues to be the main electricity generator for Mindanao. The Department of Energy (DOE) reported that in June 2003 the northern part (i.e. Regions X and Caraga) of Mindanao contributed about three-quarters (994 megawatts) of the 1,321-megawatt dependable capacity of Mindanao power supply system and generated a surplus of 603 megawatts. It generates 74% of the Island's dependable capacity while the southern regions use 47% of the Island's total power consumption.

The majority of the electricity generation in Mindanao is by hydroelectric systems. The Agus Hydroelectric Complex composed of six power plants using water originating from Lake Lanao in Marawi City down to Iligan City, generated 48% of the supply. Another hydroelectric plant is the Pulangi IV Plant in Maramag, Bukidnon that provides 17% of the supply in the island. Alternative forms of electricity generation are undertaken at the Mt. Apo Geothermal Plant, which at present generates 7% of the supply and some oil-fired plants located in different areas of Mindanao which generate 27% the balance is generated mini hydroelectric plants.

The Agus and Pulangi Hydroelectric Plants have installed capacities of 727 mega watts (MW) and 255 MW, respectively. Mt. Apo Geothermal Plant has an installed capacity of 108 MW; Diesel Plants and Power Barges in different areas in Mindanao have a combined capacity of 412 MW; and mini hydroelectric plants in various areas have a total capacity of 13 MW. The combined installed capacity of all power generating plants supplying Mindanao Grid has a total capacity of 1,516.5 MW. The total dependable capacity is 1,355.3 MW. Refer to Table 2.7-1 for a list of existing power plants in Mindanao while Figure 2.7-1 shows the power grid in Mindanao.

Table 2.7-1 Existing Power Plants in Mindanao

PLANT	INSTALLED CAPACITY (MW)	DEPENDABLE CAPACITY (MW)	LOCATION
REGION X			
Hydropower			
Agus 4	158.0	158.0	Lanao del Norte
Agus 5	55.0	55.0	Lanao del Norte
Agus 6	200.0	145.0	Iligan City
Agus 7	54.0	54.0	Iligan City
Pulangi IV	255.0	255.0	Bukidnon
Mini/Micro Hydro			
Bubunawan	7.0	7.0	Bukidnon
Agusan	1.6	1.6	Bukidnon
Diesel Plants			
Mindanao Energy System	18.9	15.31	Cagayan de Oro City
Northern Mindanao Power Corporation (NMPC) 1	63.8	20.0	Iligan City
NMPC 2	44.8	40.0	Iligan City
REGION XI			
Mini Hydro			
Talomo Mini hydro	3.7	1.6	Davao City
Diesel Plants			
Davao Light	58.7	42.0	Davao City
Mindanao Diesel PB 118	100.0	95.0	Maco, Compostela Valley
PB 104	32.0	18.0	Davao City
REGION XII			
Geothermal			
Mindanao 1	54.24	54.0	Kidapawan, Cotabato
Mindanao 2	54.24	54.0	Kidapawan, Cotabato
Diesel Plants			
Cotabato Light & Power	10.0	7.5	Cotabato City
Southern Phil. Power Corp.	56.0	50.0	Alabel, Sarangani
Kalamansig Diesel Power Plant	1.5	1.5	Kalamansig, Sultan Kudarat

PLANT	INSTALLED CAPACITY (MW)	DEPENDABLE CAPACITY (MW)	LOCATION
ARMM			
Hydropower			
Agus 1	80.0	80.0	Marawi City
Agus 2	180.0	180.0	Lanao del Sur
Mini Hydropower			
Kumalarang MHP	0.68	0.50	Basilan
Balagtasan MHP	0.27	0.10	Basilan
Diesel Plants			
Basilan DPP	1.67	0.30	Isabela, Basilan
Power Barge 119	7.20	6.00	Basilan
Jolo Diesel Power Plant (DPP)	5.96	5.00	Jolo, Sulu
Siasi DPP	1.64	0.90	Jolo, Sulu
Bongao DPP	2.12	2.12	Bongao, Tawi-Tawi
Power Barge 108	7.20	4.50	Tawi-Tawi
Balimbing DPP	0.32	0.30	Balimbing, Tawi-Tawi
Cagayan de Tawi-Tawi DPP	0.53	0.50	Cagayan de Tawi-Tawi
Manuk-Mangkaw DPP	0.16	0.15	Simunul, Tawi-Tawi
Sibuto DPP	0.33	0.30	Sitangkay, Tawi-Tawi
Sitangkay DPP	0.05	0.05	Sitangkay, Tawi-Tawi
Tandubas DPP	0.11	0.10	Tandubas, Tawi-Tawi
Overall Total	1,516.72 MW	1,355.33 MW	

Power Grid Network in Mindanao; Power Generation and Transmission Lines Projects in Mindanao; Electrification in Mindanao Proportion of Household with Electricity; and Source: Regional Physical Framework Plans, 2004-2030

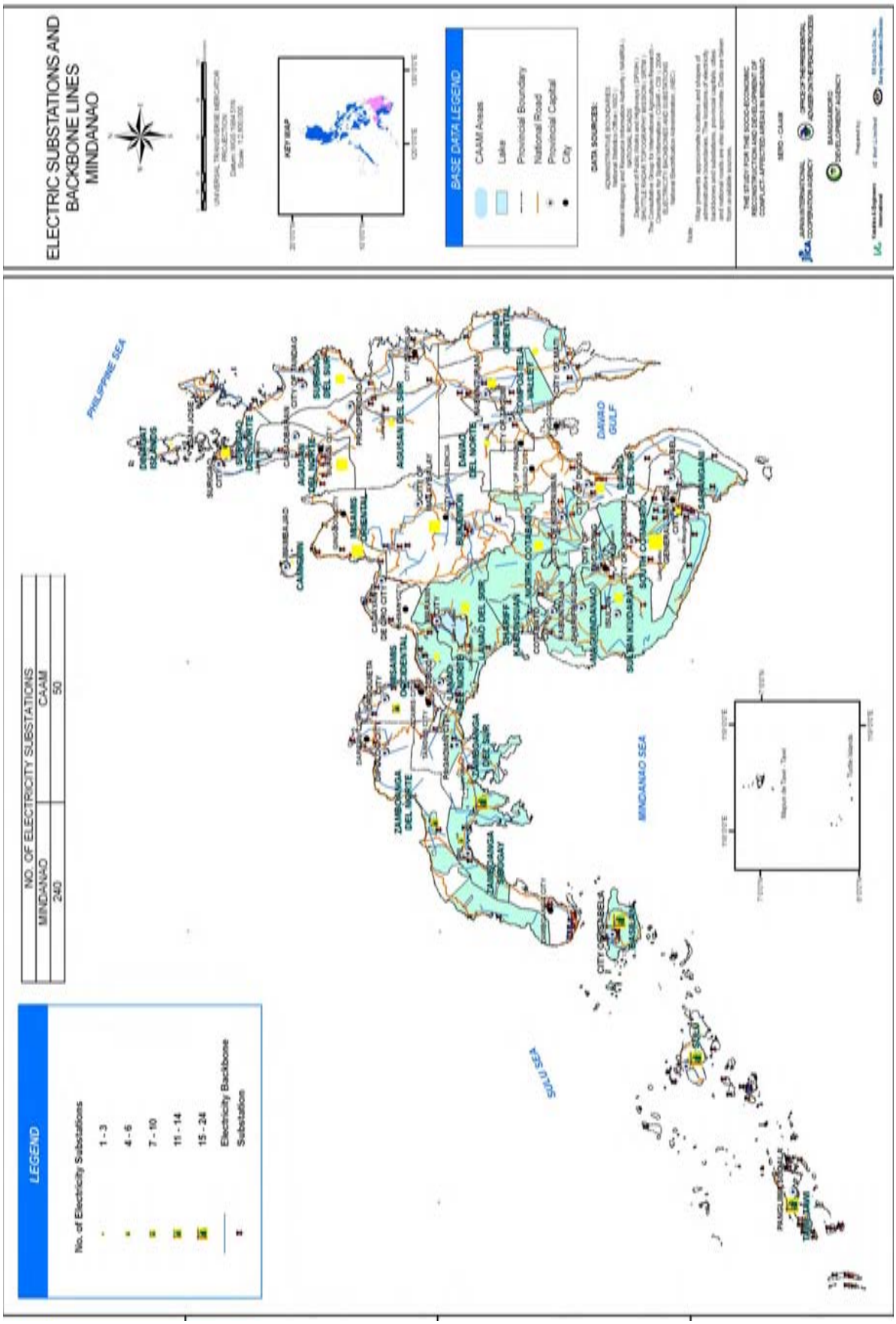


Figure 2.7-1 Power Grid in Mindanao

2.8 OTHER FACILITIES

2.8.1 Communication and Postal Service Facilities

The communication requirements in the cities of Mindanao are serviced mainly by government facilities. Telephone connections are established through subsidized public calling stations interconnected to the main grid of PLDT. Cellular Mobile Technology System (CMTS) services are also provided by SMART, Globe and Sun Cellular service providers. Presently, these, too, are mostly concentrated in the urban areas of the region, but it is anticipated that the coverage will expand due to the growing market for telecommunication in the rural areas. Postal and telegraph services are provided by post offices and telegraph stations distributed throughout Mindanao. However, from the records of DOTC, most of the service facilities require upgrading.

2.8.2 Tourism and Recreation Facilities

According to the Department of Tourism (DOT), there are a number of accredited first class standard hotels in Mindanao. The first class hotels located in major cities, are of international standard, for example the Marco Polo Hotel, Pearl Farm, and Apo View Hotel in Davao City. Other tourist lodging areas are classified as economy, tourist inn and pension house and offer more basic facilities. Resorts like those in Camiguin and Dakak compare favourably with other international resorts. Siargao Island in Surigao del Norte is becoming a well known destination for surfers and water sports enthusiasts. To fulfill the potential of the natural and man-made tourist sites in Mindanao, the development of safe tourist facilities is essential to attract a regular flow of tourists.

2.9 SPATIAL FRAMEWORKS IN MINDANAO

2.9.1 International Links of Mindanao

2.9.1.1 BIMP-EAGA

Brunei Darussalam, Indonesia, Malaysia, and Philippines-East ASEAN Growth Area

BIMP-EAGA was established in March 1994 following the EAGA concept discussions with EAST ASEAN Heads of States in Brunei Darussalam in October 1992. The areas of Mindanao and Palawan in the Philippines, and Sabah, Sarawak and the Federal Territory of Labuan in Malaysia, are geographically distant from their national capitals. They are in strategic proximity to each other in one of the world's most resource-rich regions. Moreover, these regions have a long history of participation in the global economy, stretching back to the silk and spice trade between Europe, China, and other parts of Asia, thus, forming the basis for BIMP-EAGA.

As well as the regions mentioned above BIMP-EAGA regions also include: Brunei Darussalam, and Kalimantan, Sulawesi, Maluku, and Irian Jaya (Indonesia). The goal of BIMP EAGA is to accelerate economic development by focusing in four areas: Transport, Infrastructure, and ICT development; Natural Resource Development; Joint Tourism Development; and Small and Medium Enterprise Development.

At present, the BIMP-EAGA Facilitation Center and BIMP-EAGA Business Council are located in Kota Kinabalu, Sabah, Malaysia with the Philippines undertaking several initiatives to lead activities of EAGA. Mindanao, in particular, is seeking stronger economic ties within EAGA via strengthening its vital international links among BIMP-EAGA and the rest of Southeast Asia.

2.9.2 National Links of Mindanao

2.9.2.1 Philippine Nautical Highway Development Plan

The MTPDP (Medium-Term Philippine Development Plan) 2004-2010 emphasized the need to develop the nautical highway to interconnect the entire country as a means of enhancing the transport of goods and improving the communications network to open up new economic opportunities, reduce transportation and business transaction costs, and increase access to social services. The nautical highway system, introduced in 2003, aims to maximize the use of RORO system to transport produce from Mindanao to Luzon through the Visayas. Studies have initially shown that the system reduced travel time by 10 hours and reduced costs by 40% for passenger transport and 30% for cargo. To link the entire country, three high priority routes have been identified and are shown in エラー! 参照元が見つかりません。.

The high priority routes are: 1) Western Nautical Highway (also known as Strong Republic Nautical Highway), which covers Oroquieta City-Dapitan City-Dipolog Road and Dipolog-Dumaguete City RORO; 2) Central Nautical Highway traverses Calinan, Davao-Buda, Bukidnon-Misamis Oriental Road, Butuan City-Agusan, del Norte- Misamis Oriental Road and Balingoan, Misamis Oriental-Guinsiliban, Camiguin RORO; and 3) Eastern Nautical Highway is composed of Davao-Compostela Valley (Alegria-Santiago, Bayugan San Francisco-Trento Monkayo)-Agusan-Surigao Road) and Surigao City-Liloan, Southern Leyte RORO.

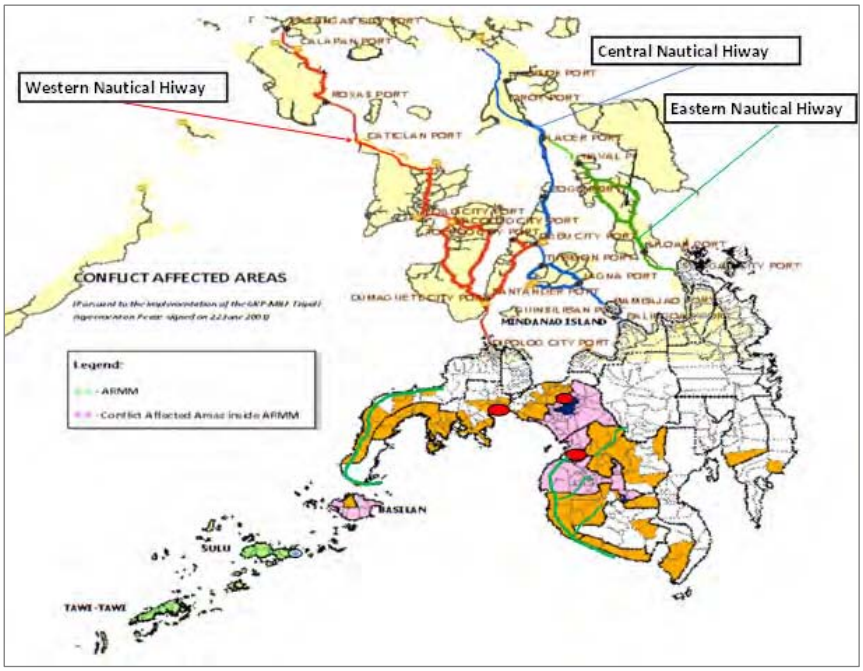


Figure 2.9-1 Identified Priority Routes of the Philippines' Nautical Highway

2.9.2.2 Mindanao Super Region[2]

The Super Regions of the Philippines Program announced by the Philippine Government includes five main components: the North Luzon Agribusiness Quadrangle, the Metro Luzon Urban Beltway, the Central Philippines Region, the Mindanao Super Region and the Cyber Corridor. The program was identified in the 2006 Philippine State of the Nation Address (SONA) and to spur development in the Philippines with Mindanao being envisioned as the focal Agribusiness hub.

Agribusiness Mindanao involves the following regions: 1) Zamboanga Peninsula or Region IX; 2) Northern Mindanao or Region X, except Camiguin; 3) Davao Region or Region XI; 3) SOCCSKSARGEN or Region XII; 4) CARAGA or Region XIII, except the Island of Siargao; and 5) the Autonomous Region in Muslim Mindanao or ARMM)

Mindanao supplies over 40% of the Philippines food requirements and more than 30% of the national food trade. It supplies 100% of rubber production, 91% of pineapple production, 90% of cacao production, and over 50% of banana, coffee, corn, and coconut supplies. It also produces exotic fruits like pomelo, durian, and mangosteen. Despite Mindanao's competitive edge in agribusiness, especially in the production of high value crops and major infrastructure

[2] Sources: PGMA's Super Region Accomplishment Report, 2007 from www.ops.gov.ph/superregion, Mindanao Super Region and updates from medco.gov.ph/medco.web. Mindanao from www.minbc.org/minbc/maa.2006-2007.

support, Mindanao is still one of the poorest regions in the Philippines. The strategy for Mindanao Super Region must ensure that Mindanao enjoys an accelerated development.

Each Super Region is led by a designated Development Champion who acts as the prime advocate of the strategic development theme and, identifies development catalysts and ensures the implementation of the priority programs and projects. The Development Champion must work in close collaboration with the local government units, national agencies and other partners in development, and undertake the necessary interventions to help ensure that these are completed on time and at the lowest cost to government.

2.10 Priority Projects under Mindanao Super Region

A total of 27 priority projects are proposed for Mindanao. Three projects have already been completed; the Diosdado Macapagal Bridge in Butuan City, the 210-MW Clean Coal Plant inside the PHIVIDEC Compound, and the 950-kW Photovoltaic Power Plant in Cagayan de Oro City. Of the remaining 24 projects, 10 are under various stages of civil works, while the rest are in different stages of implementation. All the projects are aimed at enhancing Mindanao's competitive advantage and potentials in agribusiness.

2.10.1 Roads

The proposed major roads projects in Mindanao are intended to bring farm produce to the market more economically, faster and as a by-product cut travel time for travelers. These projects, which will be constructed until 2010, are being built for a total cost of P12.868 billion. On-going road projects are: 1) Dakak-Dapitan Road Project; 2) Dinagat Island Road Network; 3) Hawilian-Salug-Sinakungan Barangay Road in Agusan del Sur; 4) Lebak-Maguindanao Road also known as the Awang-Upi-Lebak Road; 5) Sibuco-Siraway-Siocon-Baliguian-Gutalac Coastal Road in Zamboanga del Norte; 5) Surigao-Davao Road divided into five (5) Sections: Bacuag-Claver, Marihatag-Hinatuan-Bislig, Manay-Mati, Cortez-Tandang-Marihatag, and Bislig-Manay.

2.10.2 Bridge

Panguil Bay Bridge is a 2.36-kilometer-long bridge linking Tubod, Lanao del Norte and Tangub City, Misamis Occidental.

2.10.3 Airports

The seven (7) airport projects in Mindanao are to provide an efficient means of transporting produce from Mindanao to the Luzon Urban Beltway as well as faster passenger travel. These include: Butuan Airport in Agusan del Norte; the rehabilitation of the Cotabato Airport;

Dipolog Airport in Zamboanga del Norte; Laguindingan Airport Project; Ozamis Airport Project; Pagadian Airport in Zamboanga del Sur; and the rehabilitation of the Zamboanga Airport in Zamboanga del Sur.

2.10.4 Ports

There are two major ports projects in Mindanao, worth PhP 970 million that are expected to further enhance the Super Region's competitive edge in agribusiness: the PhP 575 million Port of Cagayan de Oro in Misamis Oriental and the Davao Port in Sasa, Davao City.

2.10.5 Irrigation

There is a major irrigation project in Mindanao called the Kabulnan Irrigation Project, that will benefit the provinces of Sultan Kudarat and Maguindanao and is targeted to be completed by 2012. It is expected to increase agricultural production by 140%. The benefits are expected to reach more than 9,000 farmers, reduce costs of production by more than one-third, and in addition generate more than 460 megawatts of power.

2.10.6 Energy Reliability

The completion of the 950-kW Photovoltaic Power Plant in Cagayan de Oro City in 2004 and the 210-megawatt Mindanao Coal-Fired power plant by the National Power Corporation in 2006 increased the aggregate dependable capacity of Mindanao to about 1,706 MW, resulting in adequate power in Mindanao until 2008. However, Mindanao will still need an additional capacity (demand plus reserves) of 850 MW from 2009 to 2014 to ensure sufficient supply of electricity and it is programmed to provide 100 MW by 2009, 100 MW in 2010, 150 MW each year from 2011 to 2013, and 200 MW in 2014.

2.10.7 Transmission

Two electricity transmission grids are expected to be completed by 2009. The Abaga-Kirahon-Maramag-Bunawon Transmission Project, to serve as the main transmission system from Northern Mindanao (the source of environment-friendly hydroelectrical plants) to Southern Mindanao, where the bulk of the major industrial and commercial customers are located, and the Gen. Santos-Tacurong Transmission Project (the acquisition of right-of-way is ongoing).

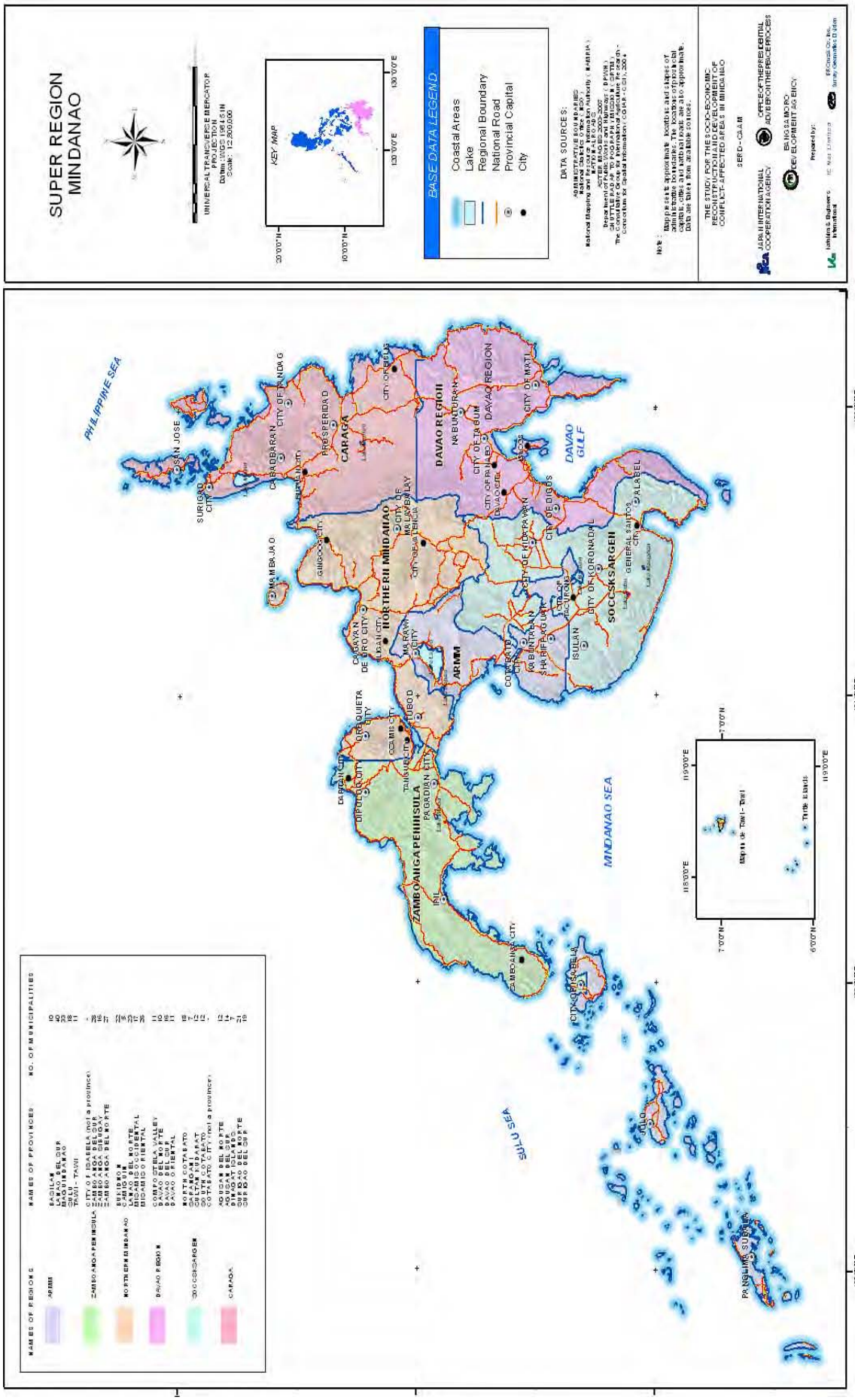


Figure 2.10-1 Mindanao Super Region Map