



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)



DAVAO INTEGRATED DEVELOPMENT PROGRAM(DIDP)  
THE REPUBLIC OF THE PHILIPPINES

# THE STUDY ON THE DAVAO INTEGRATED DEVELOPMENT PROGRAM MASTER PLANNING

## THE REPUBLIC OF THE PHILIPPINES

### FINAL REPORT

### MASTER PLAN REPORT

March 1999

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## Preface

In response to the request from the Government of the Republic of the Philippines, the Government of Japan decided to conduct the Study on "The Davao Integrated Development Program (DIDP) Master Planning" and entrusted the Study to the Japan International Cooperation Agency (JICA).

JICA sent to the Republic of the Philippines the study team headed by Mr. Itaru MAE, Pacific Consultants International, five times over the study period between September 1997 and January 1999.

The study team held a series of discussions with the officials concerned of the Government of the Philippines and conducted field surveys in the study area. After the team returned to Japan finishing the field work in January, 1999, further studies were made and the final report was prepared for official submission.

I hope that the final report will contribute to the promotion of the DIDP and to the enhancement of friendly relations between the two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Philippines for their close cooperation extended to the study.

March, 1999



Kimio Fujita

President

Japan International Cooperation Agency

March 1999

Mr. Kimio FUJITA

President  
Japan International Cooperation Agency  
Tokyo, Japan

Letter of Transmittal

Dear Sir,

We are pleased to formally submit herewith the final report of "The Study on The Davao Integrated Development Program Master Planning".

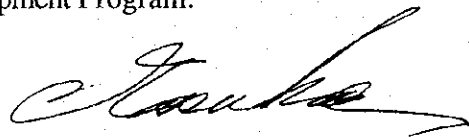
This report compiles the results of the Study which was undertaken in the Republic of Philippines from September 1997 through January 1999 by the Study Team, represented by Pacific Consultants International.

We had been assisted by many people for the accomplishment of the Study, and we would like to express our sincere gratitude and appreciation to all those who extended their kind assistance and cooperation to the Study Team, particularly relevant officials of Davao City, Davao del Norte Province, Compostela Valley Province, Davao del Sur Province, Davao Oriental Province, Tagum City and Island Garden City of Samal, who had worked as the counterpart agencies.

Also, we acknowledge the effective assistance by all the officials of your agency, the JICA advisor, Embassy of Japan in the Philippines and the Ministry of Foreign Affairs.

We hope that the report will be able to contribute to formulating appropriate policies and measures for future ODA to the Davao region, and to promote the projects/programs for the Davao Integrated Development Program.

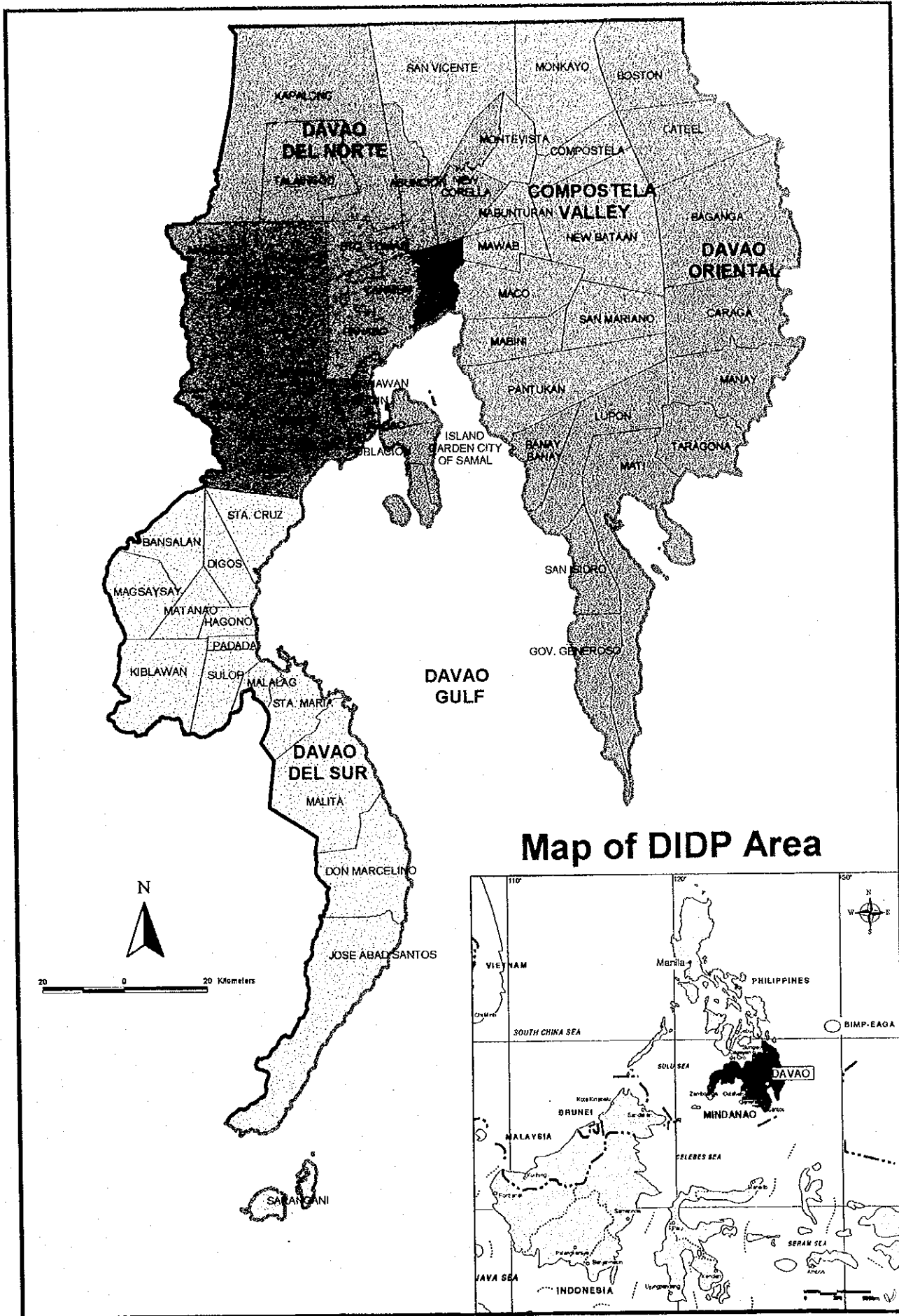
Very truly yours,

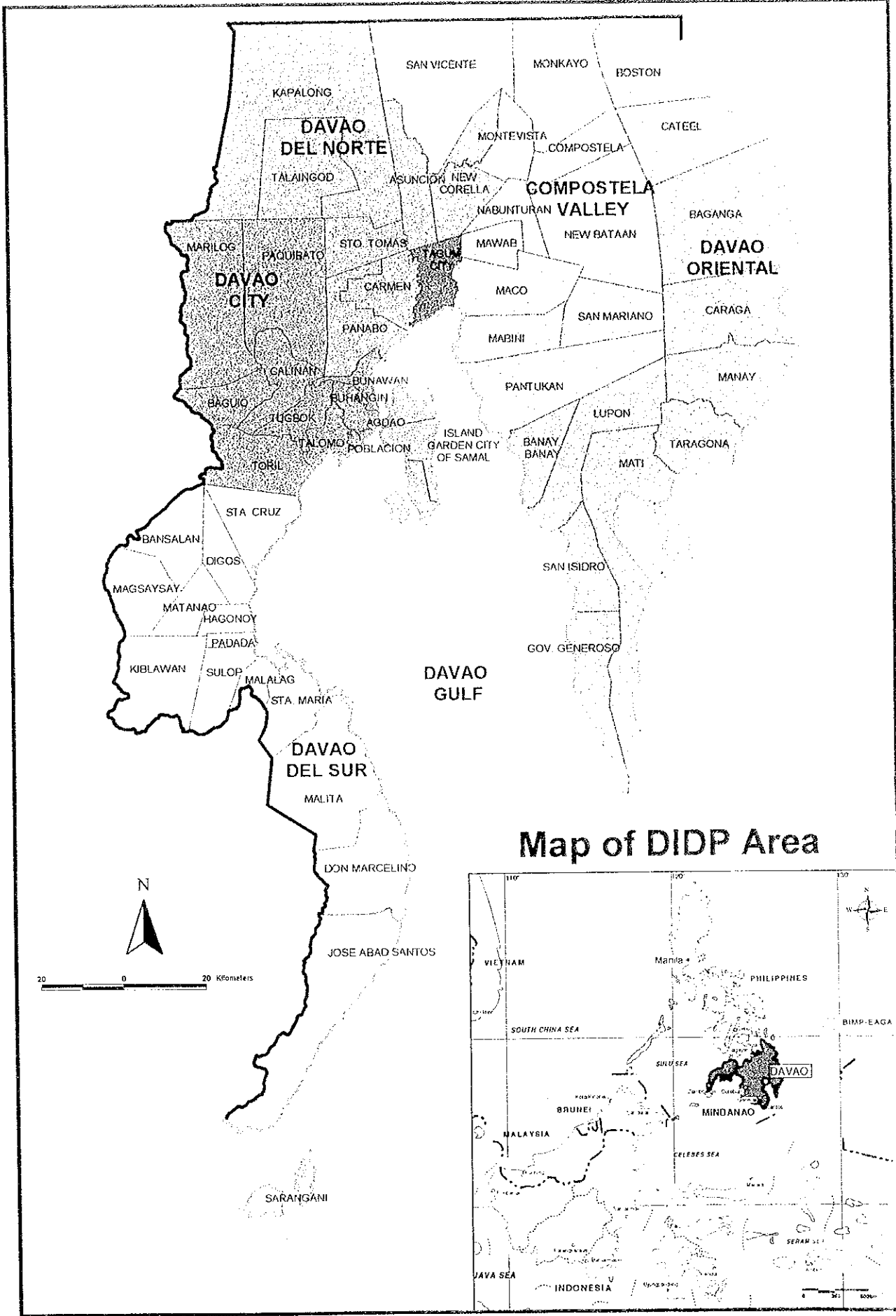


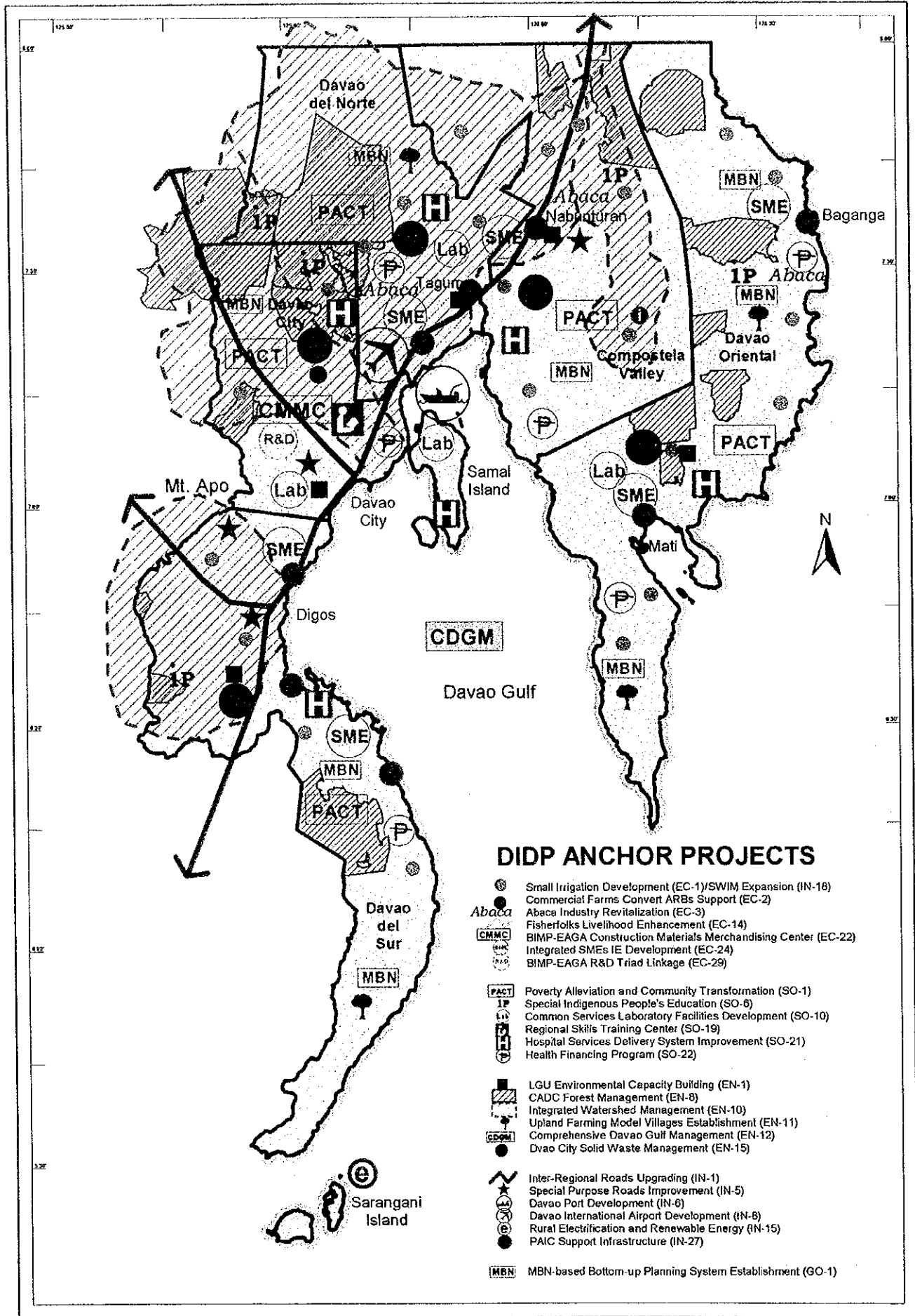
Mr. Itaru MAE

Team Leader,  
The Study Team for the Study on  
the Davao Integrated Development  
Program Master Planning









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**The Study  
on  
The Davao Integrated Development Program  
Master Planning**

**Final Report**

**Master Plan Report**

**DIDP Anchor Projects Map**

**Chapter 1 Introduction**

1.1 Background.....	1-1
1.2 Work Progress.....	1-2
1.3 Organization of the Report.....	1-8

**Chapter 2 DIDP Area**

2.1 Location and Natural Conditions.....	2-1
2.2 Socioeconomy.....	2-2
2.3 Position of DIDP Area in the Philippines.....	2-10
2.4 DIDP Area in BIMP-EAGA Context.....	2-16

**Chapter 3 DIDP Development Objectives, Strategy and Scenario**

3.1 DIDP Development Objectives.....	3-1
3.2 Alternative Strategies.....	3-4
3.3 DIDP Strategy.....	3-11
3.4 Development Scenario with Phasing.....	3-13

**Chapter 4 DIDP Development Frameworks**

4.1 Socioeconomic Framework.....	4-1
4.2 Spatial Framework.....	4-3
4.3 Development Paradigm.....	4-23
4.4 Institutional Framework for DIDP Area Development.....	4-30

**Chapter 5 Development Strategy by Sector**

5.1 Strategy for Economic Development.....	5-1
5.2 Strategy for Social Development.....	5-25
5.3 Strategy for Environmental Development.....	5-53
5.4 Strategy for Spatial/Infrastructure Development.....	5-74

---

**Chapter 6 DIDP Development Projects and Programs**

6.1 Anchor Projects..... 6-1  
6.2 Special Program for Participatory Development ..... 6-7  
6.3 Sector Projects ..... 6-9  
6.4 Indicative Investment Schedule ..... 6-28

**Chapter 7 DIDP Operations Plan**

7.1 Institutional Arrangements for DIDP Implementation..... 7-1  
7.2 Action Plan..... 7-9

## **Tables**

Table 2.1	Employment by Sector, 1995.....	2-5
Table 2.2	Estimated GRDP in DIDP Area, 1995.....	2-6
Table 2.3	Existing Land Use by Broad Category (1994).....	2-7
Table 2.4	Harvested Area by Crop/Crop Group (1995).....	2-7
Table 2.5	Assessment of Minimum Basic Needs .....	2-9
Table 2.6	Comparison of GDP/GRDP Structure (1995) .....	2-10
Table 2.7	Comparison of Employment Structure (1995).....	2-11
Table 2.8	Production of Major Crops by Area/Province/City (1995).....	2-12
Table 2.9	Comparison of Average Family Income (1994) .....	2-13
Table 2.10	Comparison of Population and Its Growth .....	2-14
Table 2.11	Comparison of Human Development Index (1990, 94) .....	2-15
Table 2.12	Investment Opportunities by Region in Mindanao .....	2-17
Table 2.13	Investment Opportunities in EAGA-Sub-regions.....	2-18
Table 2.14	Locational Conditions in EAGA Sub-regions .....	2-19
Table 3.1	Typical Economic Activities under Alternative Strategies.....	3-8
Table 3.2	Comparison of Alternative Strategies for Long-Term Regional Development of DIDP Area.....	3-9
Table 3.3	Employment under Alternative Strategy.....	3-9
Table 3.4	Urban and Rural Population under Alternative Strategies.....	3-10
Table 4.1	Projection of DIDP Economy, 1995-2016.....	4-2
Table 4.2	Projected Employment and Population in DIDP Area .....	4-2
Table 4.3	Projection of Urban and Rural Population, 1995-2016 .....	4-3
Table 4.4	Urban Development Suitability Criteria .....	4-9
Table 4.5	Land Use Conversion Matrix for DIDP Area Development.....	4-11
Table 4.6	Urban Centers for DIDP Area.....	4-18
Table 4.7	Strategic Elements on DIDP Development Paradigm Classified by Sector .....	4-25
Table 5.1	Specific Strategies for Various Crops Cultivated in DIDP Area.....	5-8
Table 5.2	Key Production Areas for Major Fruits .....	5-10
Table 5.3	Constraints Faced by Lowland/Upland/Coastal Communities Identified through Focused Group Discussions.....	5-29
Table 5.4	Performance Indicators of Public Elementary Schools, SY 1997-98 .....	5-31
Table 5.5	Elementary and Secondary Schools in DIDP Area, SY 1996-97 .....	5-31
Table 5.6	Percentage of Passers at Public Schools in 1994-95 NSAT .....	5-31
Table 5.7	Enrollment of HEIs by Program, SY 1997-98.....	5-33
Table 5.8	Illiteracy by Population Group, 1996.....	5-35
Table 5.9	Infant and Maternal Mortality Rates, 1995.....	5-45

Table 5.10	Number of Public and Private Hospital Beds, Ratio of Population and Poverty Incidence .....	5-46
Table 5.11	Number of Main Rural Health Centers, Required and Existing, 1995 .....	5-46
Table 5.12	Solid Waste Management System in DIDP Area .....	5-56
Table 5.13	Targets and Emphasized Points for Promotion of Environmental Awareness.....	5-62
Table 5.14	Criteria of Environmental Management Area for DIDP Area .....	5-63
Table 5.15	Protection Lands in Three Davao Provinces.....	5-68
Table 5.16	CADC Area Distribution by Province/City and Status of CADC .....	5-69
Table 5.17	Electrification Ratio in DIDP Area (1996) .....	5-82
Table 5.18	Service Coverage Target of Water Supply .....	5-90
Table 5.19	Water Consumption Rate.....	5-90
Table 5.20	Incremental Service Coverage with Water Supply Development.....	5-92
Table 6.1	Consideration on and Results of Forecasting DIDP GRDP by Phase .....	6-28
Table 6.2	National Investment as Percentage of GDP.....	6-29
Table 6.3	Investment Requirements for DIDP Area Development by Phase and by Sector .....	6-31
Table 6.4	Indicative Investment Schedule for DIDP Area Development .....	6-32
Table 7.1	Alternatives for DIDP Organizational Structure.....	7-6
Table 7.2	Immediate Actions to be Taken for Anchor Projects.....	7-11

### **Figures**

Figure 2.1	Spatial Distribution of Population in DIDP Area .....	2-3
Figure 3.1	Problem Structure of DIDP Area.....	3-2
Figure 3.2	Schematic Presentation of DIDP Area Development under Alternative Strategies .....	3-13
Figure 4.1	Existing Land Use.....	4-6
Figure 4.2	Land Capability for Agricultural Use .....	4-8
Figure 4.3	Land Suitability for Urban Use.....	4-10
Figure 4.4	Future Land Use.....	4-12
Figure 4.5	Urban Hierarchical Structure for DIDP Area .....	4-19
Figure 4.6	Transportation Artery System for DIDP Area .....	4-21
Figure 4.7	Schematic Presentation of DIDP Development Paradigm.....	4-28
Figure 5.1	CADC Area Distribution in DIDP Area .....	5-70
Figure 5.2	Structure of Transport Network in DIDP Area .....	5-78
Figure 5.3	Transition of Domestic Water Supply Coverage .....	5-91

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## **Abbreviations**

ADB	Asian Development Bank
ADDU	Ateneo de Davao University
ADMP	Ancestral Domains Management Plan
AFTA	ASEAN Free Trade Agreement
AI	Artificial Insemination
AICO	ASEAN Industrial Cooperation
ARB	Agrarian Reform Beneficiary
ARC	Agrarian Reform Community
ASDAR	Association of Social Development Agencies in Region XI
ASEAN	Association of South-East Asian Nations
ATI	Agriculture Training Institute
ATO	Air Transportation Office
BAS	Bureau of Agricultural Statistics
BFAR	Bureau of Fisheries and Aquatic Resources
BHW	Barangay Health Workers
BIMP	Brunei-Indonesia-Malaysia-Philippines
BOI	Bureau of Investments
BOT	Build-Operate-Transfer
BSIA	Barangay Sanitary Inspectors Association
BSWM	Bureau of Soils and Water Management
BTVE	Bureau of Technical and Vocational Education
CADC	Certificate of Ancestral Domain Claim
CAO	City Agricultural Office
CARP	Comprehensive Agrarian Reform Program
CBD	Central business district
CBFM	Community-based Forest Management
CCDO	City Cooperative Development Office
CENRO	Community Environment and Natural Resources Office
CHED	Commission on Higher Education
CIDSS	Comprehensive and Integrated Delivery of Social Services
CVO	City Veterinarian Office
DA	Department of Agriculture
DACS	Davao Association of Catholic Schools
DAR	Department of Agrarian Reform
DCCI	Davao City Chamber of Commerce and Industry
DECS	Department of Education, Culture and Sports
DENR	Department of Environment and Natural Resources
DFPC	Davao Fish Port Complex
DGRDC	Davao Gulf R&D Consortium
DGMB	Davao Gulf Management Board
DIA	Davao International Airport
DIDP	Davao Integrated Development Program
DILG	Department of Interior and Local Government
DLPC	Davao Light and Power Company



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DOE	Department of Energy
DOH	Department of Health
DOLE	Department of Labor and Employment
DOSCST	Davao Oriental State College of Science and Technology
DOST	Department of Science and Technology
DOT	Department of Tourism
DOTC	Department of Transportation and Communications
DPWH	Department of Public Works and Highways
DRHPP	Davao Regional Herbal Processing Plant
DSWD	Department of Social Welfare Development
DTI	Department of Trade and Industry
EAGA	East ASEAN Growth Area
ECC	Environmental Compliance Certificate
EDC	Energy Development Corporation
EDCOM	Congressional Commission on Education
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIB	European Investment Bank
EPI	Expanded Program of Immunization
EPZ	Export Processing Zone
ERB	Energy Regulatory Board
EU	European Union
FAPE	Fund for Assistance to Private Education
FIDA	Fiber Industry Development Authority
FTZ	Free trade zone
GDP	Gross domestic product
GIS	Geographic information system
GRDP	Gross regional domestic product
GSC	General Santos City
GTH	Gifts, Toys and Housewares
HCDC	Holy Cross of Davao College
HEI	Higher Education Institute
HMS-M	Hospital Maintenance Service-Mindanao
ICOR	Incremental Capital Output Ratio
IE	Industrial Estate
IEC	Information, Education Campaign
IFMA	Industrial Forest Management Agreement
ILGA	Institute for Local Government Administration
IP	Indigenous People
IPRA	Indigenous People's Rights Act
ISMED	Institute for Science Mathematics Education
JICA	Japan International Cooperation Agency
LARIS	Land Resources Information System
LBP	Land Bank of the Philippines
LCC	Literacy Coordinating Council
LGC	Local Government Code

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LGU	Local Government Unit
LRT	Light Rail Transit
LWUA	Local Water Utilities Administration
MAO	Municipal Agricultural Office
MASCUF	Mindanao Association of State Colleges and Universities Foundation
MBN	Minimum Basic Needs
MCEP	Mindanao Comprehensive Educational Plan
MCPS	Mindanao Center for Policy Studies
MEO	Municipal Engineer's Office
MPZ	Mineral Processing Zone
NAAD	Network of Area for Agricultural Development
NCIP	National Commission of Indigenous Peoples
NCR	National Capital Region
NFE	Non-formal education
NGO	Non-Government Organization
NHA	National Housing Authority
NHIP	National Health Insurance Program
NIA	National Irrigation Administration
NIN	National Information Network
NIPAS	National Integrated Protected Areas System
NPAA	Network of Protected Agricultural Areas
NPC	National Power Corporation
NSAT	National Scholastic Aptitude Test
NSO	National Statistics Office
OMA	Office for Muslim Affairs
OSCC	Office of Southern Cultural Communities
OSY	Out-of-school youth
OTEC	Ocean Thermal Energy Conversion
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PAIC	Provincial Agri-Industrial Center
PAO	Provincial Agricultural Office
PCAMRD	Philippine Council for Aquatic and Marine Research and Development
PCARRD	Philippine Council for Agriculture, Forestry and Natural Resources Research and Development
PCDO	Provincial Cooperative Development Office
PCO	Pollution central office
PENRO	Provincial Environment and Natural Resources Office
PFDA	Philippine Fisheries Development Authority
PMO	Port Management Office
PO	People's Organization
PPA	Philippine Ports Authority
PPDO	Provincial Planning and Development Office
PSCB	Productivity Skills and Capacity Building

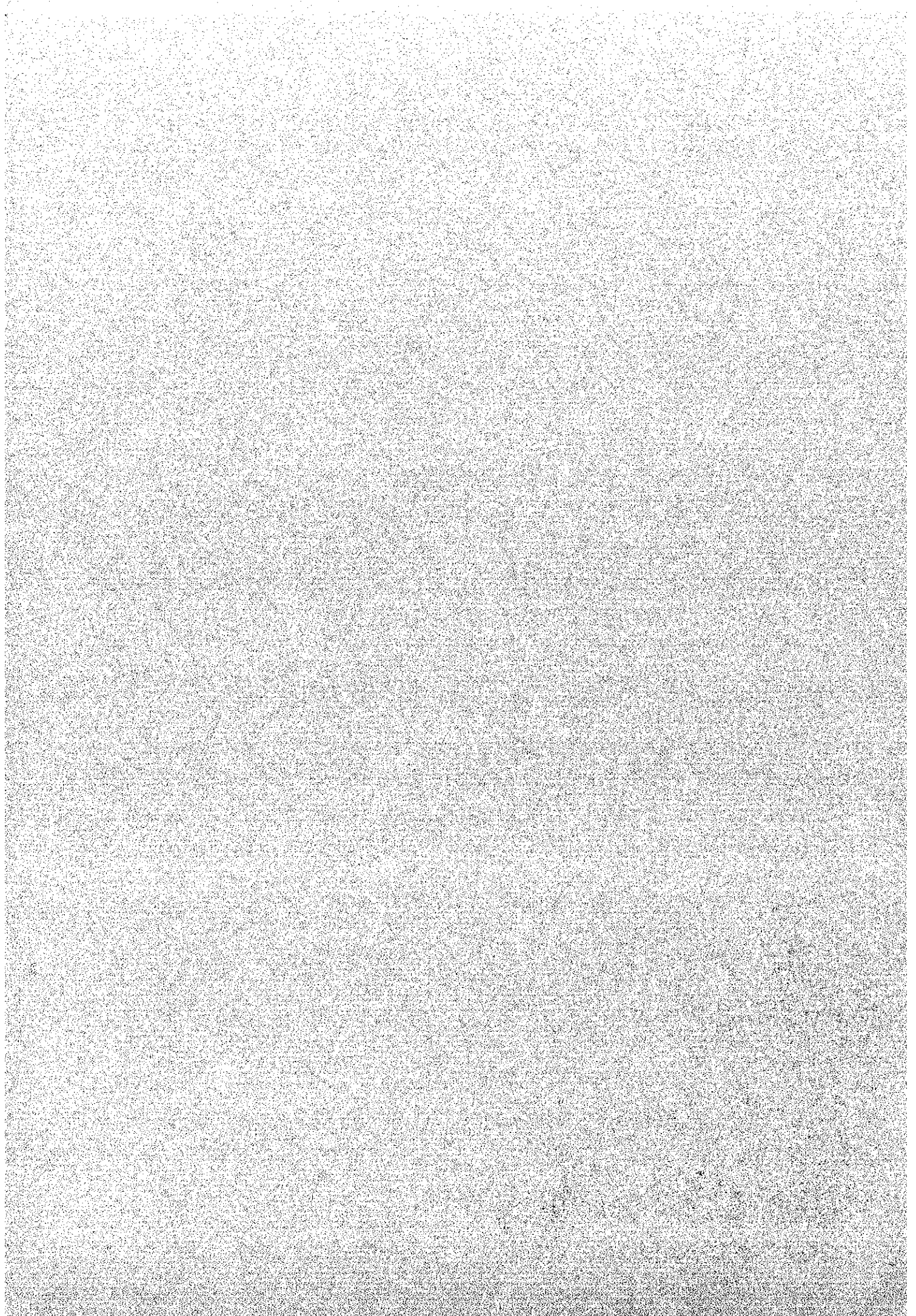
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PTC	Project Technical Committee
PVO	Provincial Veterinarian Office
RACO	Regional Applied Communications Office
RAIC	Regional Agri-Industrial Center
REC	Rural Electric Cooperative
RFTC	Regional Fishermen's Training Center
RPPF	Regional Physical Framework Plan
RSS	Rapid Social Survey
RSTC	Regional Science Teaching Center
SALT	Sloping Agricultural Land Technology
SDC	Social Development Committee
SEZ	Special Economic Zone
SMARRDEC	Southern Mindanao Agriculture and Resources Research and Development Consortium
SME	Small and Medium Enterprise
SPAMAST	Southern Philippines Agri-Business, Marine and Aquatic School of Technology
SRA	Social Reform Agenda
SRIP	Small Reservoir Irrigation Project
STW	Shallow Tube Well
SUC	State Universities and Colleges
SWIM	Small Water Impoundment Management
TB	Tuberculosis
TESDA	Technical Education and Skills Development Authority
TNA	Training Needs Assessment
TNTS	Tagum National Trade School
TTI	Teacher Training Institution
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific, and Cultural Organization
US	United States
USEP	University of Southeastern Philippines
WTO	World Trade Organization

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***Chapter 1***  
***Introduction***

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## **1. Introduction**

### **1.1. Background**

#### **(1) Study background**

The Local Government Code (LGC) enacted in 1991 has transferred substantive portion of development planning and administration functions of the Government to local government units (LGUs). It has enabled LGUs to pursue their own development aspirations with their own initiative and resources, in line with overall development goals and policies of the Government. LGUs may submit directly to international aid organizations project proposals for grant-in-aid assistance and become main executing agencies of such.

In Mindanao, Davao Province and Davao del Sur, among other provinces, were chosen as pilot decentralized provinces even prior to the enactment of the 1991 LGC. The two provinces joined with Davao City to establish the Davao Integrated Development Program (DIDP), and a memorandum of agreement on socioeconomic cooperation and development was signed in July 1994 by representatives of the three LGUs. Thereafter, Davao Oriental joined the DIDP in October 1994. The main thrust of the DIDP is to pursue more integrated and effective development of these territories by mustering various development efforts of the LGUs and by combining various resources of these territories, including not only natural resources but also administrative, financial and most importantly human resources.

The realization of peace in Mindanao and the promotion of the BIMP-EAGA, as advocated by the Ramos administration, give further impetus to the development of Mindanao in general and the implementation of the DIDP in particular. The promotion of the free trade regime through the BIMP-EAGA is expected to enhance the comparative position of the DIDP Area as its center, which in turn would contribute to the enhancement of the Philippine position in the international society. To ensure the peace and stable economic growth in Mindanao, substantive supports by the Government and the international society are expected to be continued and expanded.

The real issue is how to realize these prospects for socioeconomic development and utilize continued supports expected by the Government and the international society in such a way that would benefit the local people and substantiate the decentralization. Accordingly, the Government of the Republic of the Philippines requested the Government of Japan for technical cooperation to prepare an integrated regional development master plan for the area covered by the DIDP. In response to this request, the Government of Japan has decided to implement this technical cooperation and entrusted the implementation to the Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of the technical cooperation program of the Government of Japan. The implementing arrangement for this technical cooperation was agreed upon between the City Government of Davao, Provincial Governments of Davao, Davao del Sur and Davao Oriental and JICA, and signed by respective representatives on April 14, 1997.

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## **(2) Study Area and objectives**

### Study Area

The Study Area to be covered by this technical cooperation is the combined jurisdiction of Davao City, Davao del Norte including Tagum City and Island Garden City of Samal, Compostela Valley, Davao del Sur and Davao Oriental. It may be alternatively called the Davao Gulf Area or the DIDP Area. The Study Area has 19,671 km<sup>2</sup> and the total population was 3.29 million in 1995.

### Study objectives

The objectives of the Study are:

- 1) To prepare the Davao Integrated Development Master Plan (DIDMP) for the target year 2016 in order to achieve the balanced and equitable development among economic, social and environmental sectors in the Study Area defined above, of which priority projects and programs shall be identified and short-listed for subsequent implementation;
- 2) To formulate recommendations necessary for the effective implementation of the Master Plan, including investment promotion measures and organizational/institutional arrangements; and
- 3) To conduct technology transfer to the Philippine counterpart personnel in the course of the Study so that the DIDMP should be properly followed up after the Study.

## **1.2. Work Progress**

### **1.2.1. First field work**

#### **(1) Initial discussions**

The JICA Study Team arrived in the Philippines on September 1, 1997 for the first field work. After courtesy calls on selected agencies and international aid organizations and discussions with their staff in Manila, the Study Team moved to Davao City on September 3.

The JICA Study Team had a meeting with the Project Steering Committee (PSC) and the DIDP Board on September 3, and presented the Draft Inception Report prepared in Japan. The JICA Study Team met members of the Project Technical Committee (PTC), on September 4 to present the Draft Inception Report and to have initial discussions on the scope of work, objectives, procedures, implementing arrangements and other matters related to the Study. Minutes of meetings were prepared and signed by representatives of the DIDP and the JICA Study Team on September 4.

The Study Team had a series of meetings with sub-committees of the PTC according to the following schedule.

<u>Sub-Committee</u>	<u>Schedule</u>
Economic Development Planning	September 16, 09:00 – 11:00 AM
Natural Resources Management/ Environmental Conservation Planning	September 16, 02:00 – 04:00 PM
Spatial/Infrastructure Planning	September 17, 09:00 – 11:00 AM
Social Development Planning	September 17, 02:00 – 04:00 PM

At each meeting, the Study Team had a briefing on existing conditions and programs from member agencies and private sector representatives, and clarified some points raised by participants related to the Study.

The Study Team had a briefing from planning and development officers of the City and the provincial governments on September 12 concerning development conditions and plans of the respective LGUs. Study Team members asked some questions related to specific aspects of existing conditions and plans as well.

In return, the Study Team made the first round of official visits to the City and the provinces according to the following schedule.

September 22	Davao Province
23	Davao Oriental
24	Davao City
26	Davao del Sur

In each City/province, the Study Team explained to members of the respective Development Council the scope of work, objectives, schedule, procedure, and implementing arrangements of the Study, and exchanged views with the participants concerning development conditions and prospects of the City/province. The Study Team also visited a few sites of planned or on-going projects guided by City/province officers.

The Study Team visited Gen. Santos City during September 18-19 for a courtesy call on the Mayor, discussions with the SOCSARGEN PMO staff and visits to a few project sites. Other agencies that the Study Team had meetings with include Mindanao Economic Development Council, Davao Power and Lighting Company, Davao Investment Promotion Center, Consulate General of Indonesia, and Consulate General of Malaysia.

## **(2) Inception Report**

In addition to initial discussions outlined above, the JICA Study Team carried out inception works consisting of the following tasks:

- 1) Collection of data and information necessary for the Study (or request therefor),
- 2) Review of existing plans and related documents,
- 3) Preliminary development diagnosis, and
- 4) Initial identification of development issues.



The Inception Report was prepared, compiling early results of these tasks, and submitted on October 8, 1997. The report contained development diagnosis by province/City and development issues by sector as well as the design of the Study contained in the Draft Inception Report as revised.

**(3) Progress Report**

The Study continued after the submission of the Inception Report. Sector experts of the JICA Study Team in cooperation with staff of DIDP Project Management Office (PMO) visited many agencies and institutes to collect data and information and to discuss on various development issues.

The rapid social survey (RSS) as described in the Inception Report was discussed at meetings of the NGO Forum on October 3 and 10, attended by representatives of some 20 NGOs. It was agreed that the RSS be entrusted to the Association of Social Development Agencies in Region XI (ASDAR). The traffic survey was conducted on October 22 and 23 as planned in the Inception Report. For the social program review on the Central Luzon Development Program (CLDP), also described in the Inception Report, initial discussions with DTI III and other agencies took place in early November and also in early December.

Provincial and City workshops were conducted in respective capitals according to the following schedule:

- November 19    Davao Province
- 21    Davao Oriental
- 25    Davao City
- 26    Davao del Sur

At each workshop, participants discussed on existing conditions, constraints and prospects in the respective province/City and identified development issues to be addressed in the DIDP Master Plan Study, using the Inception Report as a basic reference.

The JICA Study Team prepared sector papers describing existing conditions, constraints and prospects by sector. The sector papers were presented to Technical Sub-Committees of respective sectors, and discussed in meetings convened as follows.

<b>Sub-Committee</b>	<b>Schedule</b>
Economic Development Planning	December 10, 02:15 – 04:15 PM
Natural Resources Management/ Environmental Conservation Planning	December 09, 02:15 – 05:15 PM
Spatial/Infrastructure Planning	December 11, 02:30 – 05:00 PM
Social Development Planning	December 12, 02:30 – 05:30 PM

The Progress Report 1 was compiled based on results of all the works outlined above and submitted on December 17. A Steering Committee meeting was convened on December 18 to present the Report and discuss on pending issues.

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Interim results of the RSS were also reflected in the Report. Discussions at the Technical Sub-Committee meetings were not fully incorporated in the Report due to the timing.

### **1.2.2. Second field work**

The Study resumed on January 15, 1998 and the second field work conducted through March 15. During this period, sector experts of the JICA Study Team made supplemental works to analyze existing conditions based on additional data, field surveys and discussions, and established development strategy by sector. The Study Team prepared development alternatives for discussion, and developed frameworks and scenario for the DIDP regional development.

The second round of provincial and City workshops were conducted in respective capitals according to the following schedule.

February 10	Davao Province	
11		Davao City
12		Davao del Sur
13		Davao Oriental

At each workshop, participants discussed on development alternatives, frameworks and strategy. Starting with a review of the development issues identified during the first workshop, possible strategies to address to the issues were enumerated, and examined in the light of the D-A-V-A-O concepts (Section 4.3).

During this period, three supplemental surveys were concluded. Two of them were conducted directly by the JICA Study Team and concluded with additional works during this period. These are a survey on industrial establishments and a review of social sector program of the CLDP. The rapid social survey entrusted to the Association of Social Reform Agencies in Region XI (ASDAR) also completed with the submission of its final report in early March.

A discussion paper was prepared to present the development alternatives, socioeconomic and spatial frameworks, and the development scenario for the DIDP regional development. An enlarged Steering Committee meeting was convened on March 12 to present the paper, participated by representatives of the PTC as well.

### **1.2.3. Third field work**

#### **(1) Initial discussions and Interim Report**

The third field work started on May 21, 1998 to continue through early September. During the initial period, the JICA Study Team had intensive discussions with members of PTC, provincial and City officers, and some NGOs on the development alternatives, frameworks, strategies, and scenario contained in the Discussion Paper submitted in March. Extensive comments in writing were received on the Discussion Paper from over 20 government agencies, institutes and other offices, which were examined by the JICA Study Team.

A series of workshops were conducted to discuss on the developed alternatives, frameworks, strategies and scenario. They took the form of expanded Technical Sub-committee meetings participated also by representatives of provincial and City governments, according to the following schedule.

- 
- June 02 Social Development Sector
  - 03 Natural Resources/Environment Sector
  - 04 Economic Development Sector
  - 05 Spatial/Infrastructure Development Sector

Another meeting of the NGO Forum was convened to discuss the continued cooperation with NGOs through the project formulation phase of the Study. Prior to the meeting, terms of reference were drafted through communications between ASDAR and the JICA Study Team, which were finalized through discussions.

Satellite imagery was processed in Japan to prepare a false color map and an existing land cover map for incorporation into a GIS database. To complement this, a ground truth survey was conducted at 47 points throughout the DIDP Area. A questionnaire survey for industrial establishments was also started during the initial stage. Additional data were collected/requested by sector. Results of the Rapid Social Survey conducted during the first and the second field work periods were examined.

Contents of the Discussion Paper were revised through the discussions, data analysis and other works mentioned above. Results were compiled into the Interim Report.

## (2) Progress Report 2

Contents of the Interim Report were disseminated widely and discussed on various occasions. After newly elected chief executives of the DIDP provinces and cities took their respective offices, the DIDP Board was re-organized. The first meeting of the newly organized Project Steering Committee was convened on July 22. The new members were briefed on the study progress, and discussions took place. Another meeting of the NGO Forum was convened on July 27 to check the progress of project formulation by NGOs.

The third round of provincial/City workshops were conducted in respective capitals according to the following schedule.

- August 06 Davao City
- 07 Davao Oriental
- 10 Compostela Valley
- 11 Davao del Norte
- 12 Davao del Sur

At each workshop, development strategies and proposed projects and programs were presented by sector, and participants discussed and evaluated each project/program. Most projects and programs were endorsed with or without modifications. Participants presented additional project ideas for consideration by the Study Team. The provincial workshop for Davao del Norte had separate group discussions and presentations for Tagum City and Island Garden City of Samal, newly created component cities of the province.

The Regional and the National Seminars were planned to disseminate the contents of the Interim Report to a wider range of audiences and to receive comments on

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interim results of the Study. The Regional Seminar took place in Davao City on July 29, participated by some 180 representatives of governments, regional offices, private firms, academic institutes and NGOs as well as City and provincial governments.

The National Seminar was organized in Manila on August 20, inviting participants from government agencies, international aid organizations and diplomatic corps, NGOs and private firms based in Manila. A preliminary list of anchor projects was presented by sector as well as the development objectives, strategy and frameworks.

Another meeting of the Project Steering Committee was convened on August 17, participated by representatives of the JICA head office in charge of this technical cooperation. The committee discussed and confirmed the DIDP development objectives, strategy, paradigm and frameworks, and clarified also the issues for the subsequent stage of the study ("Minutes of Meeting on the DIDP Development Objectives, Strategy and Frameworks").

Throughout this period, project formulation by sector continued as well as supplemental analyses on existing conditions and strategies. Additional proposals presented at the workshops or transmitted thereafter and comments raised by seminar participants were also examined. Based on all of these activities, the Progress Report 2 was compiled.

#### **1.2.4. Fourth field work**

Field works continued after the submission of Progress Report 2. Works in the first through the third field work period were compiled by sub-sector and by sector. Each sector report was discussed with member agencies of respective Technical Sub-committee and others concerned, and revised reflecting their comments. Eventually, all the sector works were compiled into four sector reports respectively for economic, social, environmental, and spatial/infrastructure development.

The fifth and the last round of workshops were conducted by sector according to the following schedule

November	11	Spatial/Infrastructure Development Sector	
	12	Economic Development Sector	
	13	Social Development Sector	
	16	Resources/Environment Sector	Natural

The workshops were entitled "who will do WHAT NEXT . . . and how." Two main concerns of the workshops were (1) priority projects to be implemented immediately after the DIDP Master Planning with the local initiative, and (2) institutional arrangements for DIDP implementation.

For the project prioritization, participants rated all the proposed projects and programs according to their priority assessment, and the projects and programs were ranked in each sector workshop by the total score based on scores given by all the participants. A few projects/programs were selected, and participants discussed on initial actions to be taken for each of them by different actors such as LGUs, government agencies and NGOs.

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For institutional arrangements, participants discussed on possible roles of DIDP PMO and its relationships with LGUs and government agencies, institutional measures for private sector and people's participation, and funding mechanisms. In total, some 200 participants attended the four day workshops.

The second phase of cooperative works with NGOs concluded in November. The final report was submitted by ASDAR containing 68 proposed projects and programs formulated through a series of NGO-initiated workshops. Another meeting of the NGO Forum was convened to clarify and exchange views on some proposals. All the proposed projects and programs were carefully reviewed, and many of them were substantively incorporated into the revised DIDP Master Plan.

Initial environmental examination (IEE) was conducted for all the anchor projects. More detailed project development was made for selected projects and programs, resulting in detailed project descriptions and terms of reference for follow-up works.

The Draft Final Report was compiled with six volumes: (1) Executive Summary Report, (2) Master Plan Report containing the revised DIDP Master Plan, (3) Economic Sector Report, (4) Social Sector Report, (5) Environmental Sector Report, (6) Spatial/Infrastructure Sector Report, and (7) Project Report containing detailed project descriptions and terms of reference of selected projects and programs, results of the IEE, and project profiles.

#### **1.2.5. Fifth field work**

The fifth and the last field work was conducted during 7-27 January, 1999. During this period, the Draft Final Report was distributed widely and two seminars were organized. The second Regional Seminar took place in Davao City on January 15, participated by almost 200 participants from various agencies, institutes and LGUs throughout the DIDP Area. The second National Seminar was organized in Manila on January 22, participated by some 150 from government agencies, international aid organizations, NGOs and private firms based in Manila.

Presentations at the seminars were prepared by DIDP PMO and the JICA Study Team in close cooperation with representatives of the Technical sub-committees as part of efforts to improve sector reports of the Draft Final Report. Sector presentations at the seminars were made by the latter.

Written comments on the Draft Final Report were transmitted to the JICA Study Team during and after the fifth field work period. The Final Report was prepared in Japan, revising the Draft Final Report reflecting the comments.

#### **1.3. Organization of the Master Plan Report**

This volume is the Master Plan Report of the Final Report. The remaining part of the Report is organized in the following way. In Chapter 2, existing conditions of the DIDP Area are summarized in various aspects. The position of the DIDP Area in the Philippines and in relation to other regions is clarified, and also its position in the BIMP-EAGA context highlighted.

In Chapter 3, objectives and strategy for the DIDP Area development are first defined. Three alternative strategies are presented and compared from several points of view, and the DIDP strategy is defined by combining these strategies.

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Based on these, a development scenario for the DIDP Area is described with phasing.

In Chapter 4, frameworks for the DIDP Area development are presented. A socioeconomic framework is established by projecting the socioeconomy of the Area to the year 2016 by selected indices. A spatial framework is established covering land use and capability, a settlement system, and a transport system. The DIDP development paradigm is presented as a conceptual framework. Also the existing development administration in the Philippines and the DIDP Area is reviewed to set an institutional framework.

In Chapter 5, sector-wise development objectives and strategy are presented. Development objectives by sector area defined to support the DIDP Area development objectives. Implications of the DIDP strategy to different sectors are clarified, and sector specific strategies are established in line with the DIDP strategy.

In Chapter 6, development projects and programs are presented, consisting of anchor projects and other sector projects. Profiles of most projects and programs have been compiled into a separate volume (Project Report).

In Chapter 7, DIDP operations plan is proposed. Alternative institutional arrangements for DIDP implementation are presented, and a recommendable scheme suggested. Immediate actions to be taken after the submission of the Final Report are clarified both for further project development and preparation and for institutional measures.

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## ***Chapter 2***

### ***DIDP Area***

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## **2. DIDP Area**

### **2.1. Location and Natural Conditions**

#### **2.1.1. Location**

The Study Area was originally defined as combined jurisdictions of Davao City, Davao Province, Davao del Sur and Davao Oriental. Davao Province was divided in the middle of 1998 into two new provinces of Davao del Norte and Compostela Valley, and Tagum City and Island Garden City of Samal were created as component cities of Davao del Norte. The Study Area may be alternatively called the Davao Gulf Area or the DIDP Area. It is bordered on the SOSKSARGEN area to the southwest, Central Mindanao to the west, the Cagayan-Iligan Corridor area to the northwest, and the Caraga area to the north. Within a broader geographic context, the DIDP Area faces Micronesia in the Southern Pacific Ocean to the east, and the Eastern Indonesia through the Celebes Sea to the south.

#### **2.1.2. Natural conditions**

##### **(1) Land**

The DIDP Area has a total land area of 19,671 km<sup>2</sup>, corresponding to 6.6% of the national land of the Philippines or 19.3% of the land area of Mindanao. Of the total land area, 62.5% is designated as forestland, and 37.5% as alienated and disposable land. The share of designated forestland area in the DIDP Area is larger than the share of 52.9% at the national level.

##### **(2) Topography**

As the DIDP Area surrounds the Davao Gulf, peninsular and island topography is dominant. It is characterized also by low mountain ranges extending along the western border, in the northern central area, and in the northwestern area leading to the peninsula in the southeast. Sizable lowland areas are limited to downstream plains of the Tagum-Libuganon river, the Davao river and the Padada river.

##### **(3) River basins**

The northern, western and southwestern boundaries of the DIDP Area do not coincide with river basin boundaries. Crossing the northern border, the Agusan river flows generally to the north draining the mid-eastern part of the Area, while the mid-western part is drained by the Tagum-Libuganon river flowing generally to the south and into the Davao Gulf. The Davao river and the Padada river along the northwestern border originate from outside the DIDP Area and drain into the Gulf. In the southwest, the Buayan river originating from the DIDP Area flows out and drains into the Sarangani Bay. Other areas are drained by many small rivers having short length and steep river bed gradient.

##### **(4) Climate**

Of the four climatic types defined in the Philippines, the DIDP Area falls in Type II and Type IV climate. Type II climate is characterized by no dry season with a very pronounced maximum rainfall from November to January, and covers Davao Oriental and most part of Compostela Valley. Type IV climate is characterized by more or less evenly distributed rainfall throughout the year, and covers the rest of the DIDP Area.



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There exist limited number of rainfall stations in the DIDP Area. Records at these stations in the DIDP Area and also at General Santos show wide variances in the annual precipitation and its seasonal distribution. The annual precipitation varies in the DIDP Area from below 1,000 mm in the southern-most tip, as well as in General Santos, to over 2,500 mm in the northeastern mountains in Davao Oriental, with the average of more or less 2,000 mm. Areas with small annual precipitation usually have more pronounced dry seasons, typically during March-April. In General Santos, just outside the DIDP Area, the average monthly rainfall is smaller than 80 mm from November through May.

## **2.2. Socioeconomy**

### **2.2.1. Population**

#### **(1) Size and distribution**

The DIDP Area had a total population of 3,288,800 in 1995, accounting for 4.8% of the national population (68,611,300) or 20.3% of the population in Mindanao. It consisted of 1,191,400 in Davao Province, 1,006,800 in Davao City, 677,100 in Davao del Sur, and 413,500 in Davao Oriental. The population density was highest in Davao City at 412 per km<sup>2</sup>, followed by 172 per km<sup>2</sup> in Davao del Sur and 147 per km<sup>2</sup> in Davao Province, and lowest in Davao Oriental at 80 per km<sup>2</sup>. Spatial distribution of population in the DIDP Area is illustrated in Figure 2.1.

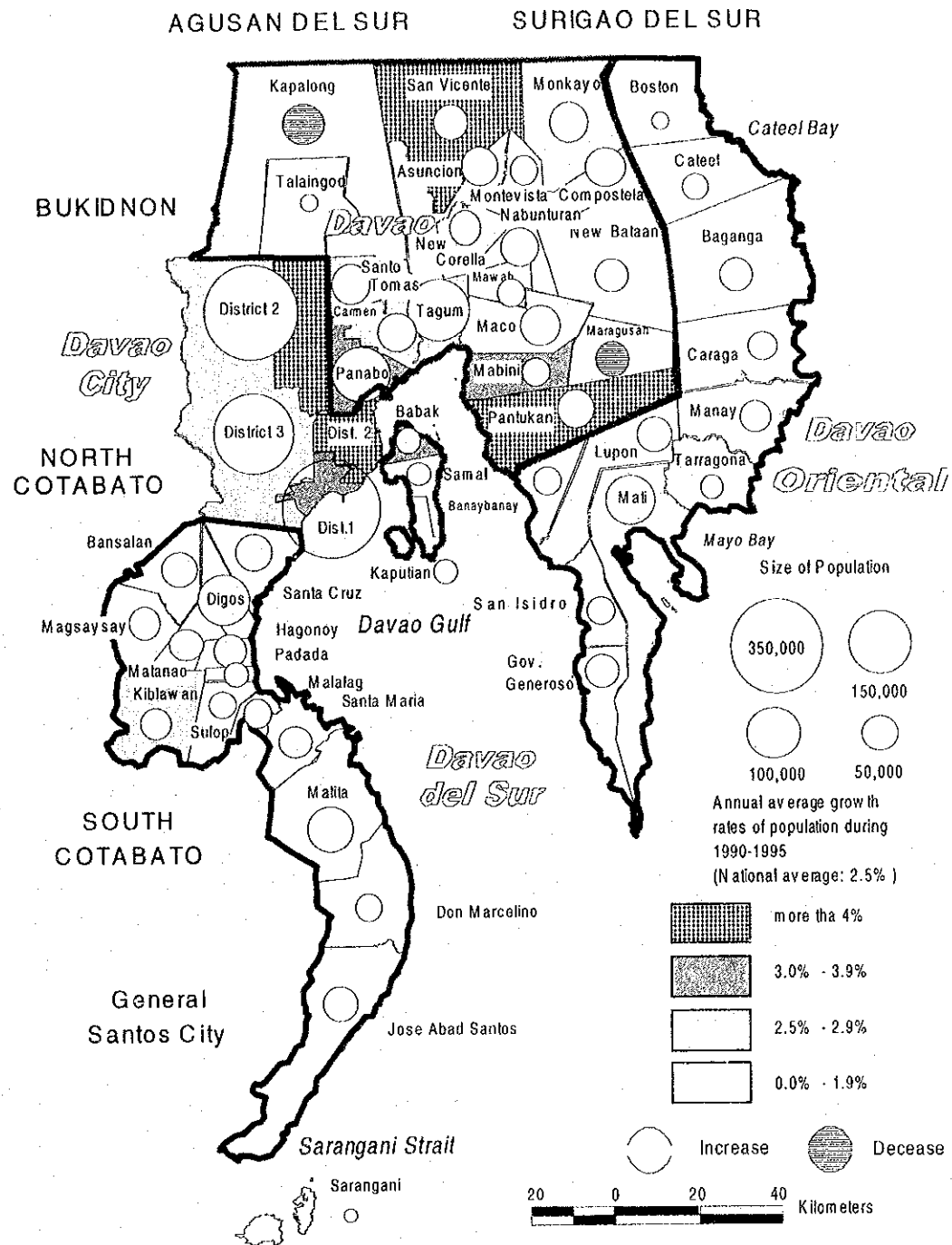
#### **(2) Population growth**

The population in the DIDP Area grew at the average rate of 2.93% per annum during 1980-90, substantially higher than the average growth of the national population at 2.35% per annum. The population growth decelerated in 1990-95 to 2.31% per annum on an average, which may be compared to the national population growth at 2.48% in the same period.

The population growth varies widely within the DIDP Area. Davao City recorded consistently high population growth, averaging 3.37% per annum in 1980-90 and 3.45% per annum in 1990-95. Davao Province attained the highest population growth at 3.83% per annum during 1980-90, but the growth decreased to 2.44% per annum in 1990-95. Population growth decelerated also in Davao del Sur from 1.91% per annum in 1980-90 to 1.35% per annum in 1990-95. Davao Oriental has consistently low population growth, which was even decelerated from 1.51% per annum in 1980-90 to only 0.94% per annum in 1990-95.

The variable population growth in the DIDP Area is due largely to inter-regional and intra-regional migration. Davao Province received a large number of in-migrants during 1980-90 as the road access was improved. Davao Oriental has been suffering from out-migration into neighboring provinces. In-migration into Davao City started to spill over into neighboring municipalities of Davao Province. (now Davao del Norte).

**Figure 2.1 Spatial Distribution of Population in the DIDP Area**



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**(3) Age structure**

The ratio of working population in the age category 15-59 years old, or the labor force coefficient, was 54.0% in Region XI, smaller than the national average of 58.1%, both in 1990. This indicates the age-specific net out-migration from Region XI searching for job opportunities. Region XI has comparatively larger population of young people (41.9% in the 0-14 years old category in 1990) and smaller population of senior people (4.1% over 60 years old in 1990).

The age structure of population in the DIDP Area can be inferred from the "projected" population by age group for the year 1990. The labor force coefficient is highest in Davao City (56.0%) and lowest in Davao Oriental (53.6%), reflecting the age-specific migration. In the DIDP Area as a whole, this coefficient is slightly larger (55.0%) than the average in Region XI, reflecting a comparative advantage of the DIDP Area for job opportunities.

**2.2.2. Labor force and employment**

**(1) Labor force and labor participation**

Statistics on labor force and employment in the DIDP Area have been obtained for 1993 and 1994. If the labor force coefficient of 55.0% is applied to the total DIDP population of 3,196,000 in 1994, the working age population (15-59 years old) is calculated to be 1,758,000. The labor force in the DIDP Area was 1,368,000 in 1994, implying the labor participation ratio of 77.8%. Applying the same procedure, the labor participation ratio in the DIDP Area is calculated at 76.0% in 1993. At the national level, the labor participation ratio was 72.7% in 1995, with the labor force of 28,040,000 out of the total working age population of 33,582,000. This variance may reflect more agriculture - dominant DIDP economies.

**(2) Total employment and unemployment rate**

The total employment in the DIDP Area was 1,283,000 in 1994, increased from 1,197,000 in 1993 by 7.2%. The unemployment rate decreased from 9.2% in 1993 to 6.2% in 1994. At the national level, the unemployment rate was 7.4% in 1996 (8.4% in 1995) with the total employment of 27,442,000 (25,698,000 in 1995) against the labor force of 29,637,000 (28,040,000 in 1995).

**(3) Employment by sector**

Employment in the DIDP Area is summarized in Table 2.1 by sector.

**Table 2.1 Employment by Sector, 1995**

	Davao Province	Davao City	Davao del Sur	Davao Oriental	DIDP Area
<b>Agriculture</b>					
Crops, livestock & services	246,183	100,724	171,300	83,244	601,451
Hunting and forestry	370	243	77	246	936
Fishery	7,154	4,795	12,877	8,901	33,727
Sub-total	253,707	105,762	184,254	92,391	636,114
<b>Industry</b>					
Mining and quarrying	10,855	1,739	314	783	13,691
Manufacturing	12,095	32,165	6,962	2,169	53,391
Electricity, gas & water	1,197	2,197	390	261	4,045
Construction	11,961	30,492	6,181	3,602	52,236
Sub-total	36,108	66,593	13,847	6,815	123,363
<b>Services</b>					
Trade	35,597	75,983	21,226	8,843	141,649
Other services	87,653	151,163	46,181	27,638	312,635
Not stated	954	600	476	443	2,473
Sub-total	124,204	227,746	67,883	36,924	456,757
<b>Total</b>	<b>414,019</b>	<b>400,101</b>	<b>265,984</b>	<b>136,130</b>	<b>1,216,234</b>

Source: 1995 Census of Population (NSO)

In the DIDP Area, employment in agriculture, forestry and fishery accounted for 52.3% (636,000) of the total employment in 1995. This share is the largest in Davao del Sur (69.3%), closely followed by Davao Oriental (67.9%) and Davao Province (61.3%), and the smallest in Davao City (26.4%)

Manufacturing employment in the DIDP Area amounted to 53,000 in 1995, accounting for 4.4% of the total. Davao City dominates the sector with some 60% share in the manufacturing employment. Employment in the mining and quarrying sector is dominated by Davao Province with close to 80% of the total (14,000 employment). Overall, the industrial employment totaled 123,000 in 1995 or 10.1% of the total DIDP employment.

The services sector employment in the DIDP Area was 454,000 in 1995, accounting for 37.4% of the total. Davao City offers some 50% of the total services employment, with the share of this sector being 56.8% of the total employment in the City. The shares of the services sector are surprisingly low in the three provinces: 29.8% in Davao Province, 26.8% in Davao Oriental and 25.3% in Davao del Sur of the respective total provincial employment.

### 2.2.3. GRDP

#### (1) GRDP

The gross provincial product is generally not available in the Philippines. The gross regional domestic product (GRDP) for Region XI in 1995 was P53.9 billion in 1985 constant prices, accounting for 6.71% of the GDP (P802.9 billion) in the Philippines. This contribution is considerably smaller than the population share (7.40% in 1995) of Region XI. Accordingly, the per capita GRDP in Region XI (P10,281 in 1995) was smaller than the per capita GDP (P11,434 in 1995).

The GRDP of the DIDP Area has been estimated on the bases of available data including the 1994 Census of Establishments, the Annual Survey of Establishments,

and the 1995 Census of Population, all by NSO. Results are summarized in Table 2.2. The GRDP in the DIDP Area is estimated at P88.0 billion in 1995, accounting for 68.0% of the GRDP for Region XI. It consists of P31.1 billion (35.1%) in agriculture, forestry and fishery, P22.3 billion (25.4%) in industry, and P34.6 billion (39.3%) in services. The per capita GRDP in the DIDP Area is calculated at P11,146 in 1995 in 1985 constant prices, about 8% larger than the average in Region XI.

## (2) GRDP structure and growth

Agriculture is still the largest sector in Region XI and in the DIDP Area with its share in the respective GRDP being 38.1% for Region XI and 35.4% for the DIDP Area in 1995, while at the national level the agricultural GDP was 21.5% in 1995. The industrial sector had 23.4% and 25.4% shares in the GRDP of Region XI and the DIDP Area as compared with a 33.9% share of the industrial GDP. The manufacturing sub-sector had only a 14.7% share in the GRDP of Region XI and a 17.4% share in the DIDP's GRDP. The share of services sector was 36.2% of the GRDP in Region XI and 39.3% in the DIDP Area, substantively smaller than the share at the national level (43.0% of the GDP).

The GRDP of Region XI grew only at 1.6% per annum during 1990-95, lower than the average annual growth of the GDP at 2.2% in the same period. In particular, agriculture and manufacturing in Region XI recorded negative growth.

**Table 2.2 Estimated GRDP in the DIDP Area, 1995**  
(Unit: P x 10<sup>9</sup> in current prices)

	Region XI	DIDP Area	DIDP share (%)
<b>Agriculture</b>			
Agriculture	44,849	29,556	65.9
Forestry	2,868	325	11.3
Fishery	5,535	1,223	22.1
Sub-total	53,251	31,104	51.7
<b>Industry</b>			
Mining & quarrying	1,547	1,390	89.9
Manufacturing	21,555	15,318	71.1
Utilities	600	428	71.4
Construction	6,159	5,170	83.9
Sub-total	29,861	22,306	74.7
<b>Services</b>			
Trade	22,903	17,226	75.2
Trans./Comm./Storage	3,412	2,569	75.3
Finance	1,032	828	80.2
Real estate & renting	7,946	5,959	75.0
Private service	5,500	4,337	78.9
Government service	5,466	3,638	66.6
Sub-total	46,259	34,557	74.7
<b>GRDP</b>	<b>129,371</b>	<b>87,967</b>	<b>68.0</b>

Source: JICA Study Team

## 2.2.4. Land use

### (1) Broad land use

Existing land use by broad category is summarized by province/City.

**Table 2.3 Existing Land Use by Broad Category (1994)**

	(Unit : km <sup>2</sup> )				
	Davao Province	Davao City	Davao del Sur	Davao Oriental	DIDP Area
Agricultural land	2,340	1,010	1,819	1,593	6,762
Grassland/shrubland	3,872	623	1,523	1,473	7,491
Woodland	1,865	683	464	1,999	5,012
Wetland	21	1	34	27	83
Miscellaneous	31	126	94	73	325
<b>Total</b>	<b>8,129</b>	<b>2,443</b>	<b>3,934</b>	<b>5,165</b>	<b>19,673</b>

Source: 1997 Southern Mindanao Statistical Yearbook.

In the DIDP Area as a whole, agricultural land occupies 34.4% of the land, and woodland 25.5%. The woodland area has been decreasing rapidly in recent years. For instance in Davao del Sur, the woodland area decreased from 780 km<sup>2</sup> in 1993 to 464 km<sup>2</sup> in 1994, while the grassland/shrubland area increased from 1,257 km<sup>2</sup> to 1,523 km<sup>2</sup> during the same period. Davao Oriental still has 38.7% of land identified as woodland. Davao Province has the largest agricultural land but its share in the total provincial land is smallest at 28.8%, while this share is over 40% in Davao City and Davao del Sur.

### (2) Agricultural land use

Agricultural land use by crop or crop group is summarized by province/City in Table 2.4.

**Table 2.4 Harvested Area by Crop/Crop Group (1995)**

	(Unit : ha)				
	Davao Province	Davao City	Davao del Sur	Davao Oriental	DIDP Area
Paddy	57,170	16,355	25,806	11,640	110,971
Corn	67,550	23,080	67,870	59,880	218,380
Vegetables	5,201	1,606	4,407	1,588	12,802
Fruits	33,150	8,238	7,514	7,262	56,164
Coconut	95,220	40,404	94,440	157,080	387,144
Industrial Crops	21,677	12,425	30,543	5,506	70,151
<b>Total</b>	<b>279,968</b>	<b>102,108</b>	<b>230,580</b>	<b>242,956</b>	<b>855,612</b>

Source: Compiled by JICA Study Team based on data from the Bureau of Statistics, DA.

Coconut occupies the largest area, corresponding to 45.2% of the total harvested area in 1995. In Davao Oriental, the coconut area corresponds to 64.7% of the harvested area. Next to coconut, corn occupies the largest area in all the provinces and the City followed by paddy. The vegetable area in Davao Province and Davao Oriental is dominated by camote and cassava, while other vegetables concentrate in Davao del Sur and Davao City. The fruit area is dominated by banana, especially in Davao Province, followed by mango, durian, mandarin, pomelo and pineapple.

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Dominant industrial crops in terms of harvested area are coffee, cacao, abaca, sugarcane and rubber.

#### **2.2.5. Household income**

##### **(1) Average family income**

The average family income in the DIDP Area as of 1994 was P39,000 annually in 1985 constant prices, which was lower than the average in the Philippines (P42,800) but higher than the average in Region XI (P36,400). Within the Area, the average family income varies widely: highest in Davao City at P69,000, followed by P36,100 in Davao Province and much lower in Davao del Sur (P26,200) and Davao Oriental (P24,800).

##### **(2) Income sources**

The largest number of families (271,294) in the DIDP Area or 46.3% of all the families (585,084) derive their income from entrepreneurial activities. Of this total however, over two-thirds are in agricultural activities. Non-agricultural entrepreneurial activities are main sources of income only for 15.0% of the families. Salaried families working in agriculture-related establishments (83,738) is 33.3% of the total salaried families (251,080), and 14.3% of the total number of families.

#### **2.2.6. Poverty situation**

The Social Reform Agenda (SRA) was a major program of the Ramos administration to alleviate poverty. The SRA adopted the Minimum Basic Needs (MBN) as an approach in order to attain decent quality of life covering survival, security and improvement. Top ten unmet indicators per province/City are shown in Table 2.5.

As seen from the table, the top unmet need is "children 3 – 5 years old attending day care/preschool" (indicator No. 25) at 68% on an average. The second highest unmet need is "head of the family employed" (No. 22) at 64%, although this appears among top ten only in Davao Oriental. The third highest unmet need is "other members of the family 18 years and above employed" (No. 23) at 62%, followed by "family with income above subsistence threshold" (No. 24) at 59%.

**Table 2.5 Assessment of Minimum Basic Needs**

**(1) Davao Province**

TOTAL HOUSEHOLDS SURVEYED: 33,649					
Rank	Indicator No.	Indicator	No. of Families with Unmet Needs	Eligible Households	% of HH with Unmet Needs
1	25	Children 3-5 years old attending day care/preschool.	12,075	16,383	74
2	1	Newborns with birthweight of at least 2.5 kgs.	6,258	8,748	72
3	24	Family with income above subsistence threshold level.	16,053	24,889	61
4	23	Other members of the family 18 yrs. and above employed.	12,428	21,389	58
5	7	Pregnant women given 2 doses of Tetanus toxoid.	5,756	10,017	57
6	4	Infants exclusively breastfed for at least 4 months.	5,455	9,504	56
	5	Deliveries attended by trained personnel.	5,138	9,169	56
7	12	Solo parent availing of health care services.	8,202	16,133	54
8	6	0-1 yr. old infants fully immunized.	5,453	10,488	52
9	27	Children 13-15 years old in high school.	8,054	10,599	49
10	11	Couples practising family planning in the last 6 months.	7,085	16,384	42

**(2) Davao City**

TOTAL HOUSEHOLDS SURVEYED: 2,262					
Rank	Indicator No.	Indicator	No. of Families with Unmet Needs	Eligible Households	% of HH with Unmet Needs
1	25	Children 3-5 years old attending day care/preschool	1,000	1,454	68.77
2	27	Children 13-16 years old in high school	1,035	1,661	62.31
3	23	Other family members 18 years old & above employed	981	1,581	62.05
4	3	Pregnant and lactating mothers provided with iron and iodine	624	1,044	59.77
5	1	Newborns with birthweight of at least 2.5 kgs.	584	1,003	58.22
6	24	Families with income above subsistence threshold level	1,287	2,244	57.35
7	5	Deliveries attended by trained personnel	566	991	57.11
8	4	Infants breastfeed for at least 4 months	558	999	55.85
9	13	Access to potable water (faucet/deep well within 250 m.)	1,217	2,241	54.31
10	11	Couples practising family planning in the last 6 months	859	1,633	52.6

**(3) Davao del Sur**

TOTAL HOUSEHOLDS SURVEYED: 37,888					
Rank	Indicator No.	Indicator	No. of Families with Unmet Needs	Eligible Households	% of HH with Unmet Needs
1	25	Children 3-5 years old attending day care/preschool	8,825	14,493	60
2	24	Families with income above subsistence threshold level	18,864	33,922	55
3	23	Other family members 18 years old & above employed	11,846	24,088	49
4	3	Pregnant and lactating mothers provided with iron and iodine supplements.	3,245	7,741	42
5	27	Children 13-16 years old in high school	6,229	15,221	40
6	13	Access to potable water (faucet/deep well within 250 m.)	13,979	35,361	39
7	11	Couples practising family planning in the last 6 months	7,982	21,521	37
8	1	Newborns with birthweight of at least 2.5 kgs.	2,196	6,163	36
9	14	Access to sanitary toilets (water-sealed, antipolo, flushed)	12,103	34,658	35
10	4	Infants breastfeed for at least 4 months	2,231	6,963	32
	5	Deliveries attended by trained personnel	2,289	7,103	22



#### (4) Davao Oriental

TOTAL HOUSEHOLDS SURVEYED: 13,744					
Rank	Indicator No.	Indicator	No. of Families with Unmet Needs	Eligible Households	% of HH with Unmet Needs
1	23	Other members of the family 18 years and above employed.	8,275	10,721	77
2	25	Children 3-5 years old attending daycare/preschool.	4,369	6,452	68
3	22	Head of the family employed.	7,516	11,770	64
4	5	Deliveries attended by training personnel.	2,528	4,102	54
5	1	Newborns with birthweight of at least 2.5 kgs.	2,488	4,056	62
6	24	Family with income above subsistence threshold level.	7,161	12,431	61
7	11	Couples practising family planning in the last 6 months.	4,361	4,535	56
	6	0-1 year old infants fully immunized.	2,624	4,558	56
8	3	Pregnant and lactating mothers provided with iron and iodine supplements.	2,312	4,336	55
9	27	Children 13-16 years old in high school.	3,287	6,301	52
10	13	Family with access to potable water (faucet/deep well) within 250 meters.	5,885	12,105	47
	4	Infants exclusively breastfed for at least 4 months.	2,133	4,583	47

Sources: Institute for Primary Health Care for (1),(3),(4), City Planning and Development Office for (2)

### 2.3. Position of DIDP Area in the Philippines

Existing conditions of the DIDP Area are compared with average conditions of the Philippines and, to the extent possible, of other regions to clarify the relative position of the DIDP Area in various aspects.

#### 2.3.1. Economy

##### (1) Economic structure

Sector shares of the GRDP in the DIDP Area as estimated above are compared with those in the Philippines, Mindanao and Region XI. As shown in Table 2.6, in the Mindanao context, the DIDP Area appears to be more advanced economically with a smaller share of agriculture and a larger share of services than the respective shares in Mindanao and Region XI. The much larger share of services represents the characteristic of the DIDP Area, centering on Davao City, as a distribution/marketing center in Mindanao. As compared with the economic structure of the Philippines as a whole, however, the DIDP Area appears less developed economically. The share of industry is particularly small in the DIDP Area as compared with the national share of this sector.

**Table 2.6 Comparison of GDP/GRDP Structure (1995)**

	Agriculture Industry Services (%)		
	Agriculture	Industry	Services
Philippines	21.5	35.5	43.0
Mindanao	40.0	25.4	33.6
Region XI	38.1	25.7	36.1
DIDP Area	35.4	25.4	39.3

Sources: 1996 Philippine Statistical Yearbook; JICA Study Team (Table 2.2)

## (2) Employment structure

Employment structure reflects economic structure and variable labor productivity. Employment share of agriculture is usually much larger than GRDP share of agriculture in any region, and the opposite is the case for industry. Comparison between GDP/GRDP structure and employment structure indicates that the DIDP Area has comparatively higher labor productivity in services and agriculture. The employment share of agriculture in the DIDP Area, however, is larger than that in the Philippines, and much larger than that in more advanced regions of CALABARZON and Central Luzon (Table 2.7).

**Table 2.7 Comparison of Employment Structure (1995)**

	(%)		
	Agriculture	Industry	Services
Philippines	43.3	14.3	42.3
DIDP Area	52.3	10.1	37.4
SOSKARGEN*	63.6	6.6	29.5
CALABARZON	22.8	26.7	50.3
Central Luzon	27.6	22.9	49.4
Cebu	47.5	19.0	33.3

Note \* : same as SOSKARGEN

Source: 1995 Census of Population,

Report No. 2 Socioeconomic and Demographic Characteristics, NSO

## (3) Agricultural production

Production of major crops and other agro-products is compared between the DIDP Area and other regions as well as the Philippines (Table 2.8). The shares of the DIDP Area in the national production are small for cereals (3.7% in 1995) and vegetables (1.9%) but large for fruits (29.7%) and cutflowers (15.1%). The lower share of rice in the DIDP Area may be explained by the small lowland area, while the Central Luzon's large share reflects its huge flat lowland area in the Pampanga river basin. Perishable vegetables tend to be cultivated near the urban market, and CALABARZON and Central Luzon take advantage of their strategic location adjacent to Metro Manila.

The DIDP Area is the main producer of pomelo (58.6% of the national production), banana (47.9%), durian (28.2%), mandarin (23.5%), papaya (13.4%) and other exotic fruits. Important industrial crops in the DIDP Area in terms of share in the national production are ramie (94.0%), cacao (70.5%), coffee (31.6%), coconut (27.5%), and castor bean (19.3%). More important cutflowers in the DIDP Area are anthurium (28.5%) and orchid (59.8%).

The DIDP Area's shares of livestock/poultry in the national production are generally small (5 – 7%) except for goat (11.5%). Backyard raising is dominant in any animal in the DIDP Area, while commercial raising of hog, duck and chicken is significant in CALABARZON and Central Luzon. The share of the DIDP Area's fishery sub-sector in the national production is very low (2.2% for municipal

**Table 2.8 Production of Major Crops by Area/Province/City (1995)**

(Unit : tons)

Crops	DIDP	SOCSAR-GEN	CALABARZON	CENTRAL	CEBU	PHILIPPINES
				LUZON		
<b>1. CEREALS</b>	<b>541,579</b>	<b>1,228,065</b>	<b>382,179</b>	<b>1,794,358</b>	<b>77,666</b>	<b>14,669,159</b>
Paddy	381,470	501,008	335,811	1,757,425	11,302	10,540,649
Irrigated	343,141	377,767	255,953	1,445,565	9,261	7,598,555
Rainfed	38,329	123,241	79,858	311,860	2,041	2,942,094
Corn	160,109	727,057	46,368	36,933	66,364	4,128,510
White corn	136,620	248,136	4,057	4,542	60,512	1,862,423
Yellow corn	23,489	478,921	42,311	32,391	5,852	2,266,087
<b>2. VEGETABLES</b>	<b>62,989</b>	<b>8,457</b>	<b>129,168</b>	<b>132,414</b>	<b>64,022</b>	<b>3,314,959</b>
Cabbage	3,357	469	3,017	1,737	4,654	129,989
Carrot	508	82	21	0	5,715	31,953
Tomato	3,479	833	14,885	20,392	5,916	155,823
Onion	0	64	112	57,469	25	88,426
Eggplant	3,506	1,792	19,944	18,664	4,889	130,702
Camote	26,002	1,788	32,048	21,373	14,483	698,900
Mongo	1,157	344	684	3,868	768	26,651
Peanut	451	49	531	1,104	420	36,200
Ubi	469	92	530	63	416	24,176
Potato	4,233	704	0	0	114	85,302
Cassava	19,827	2,240	57,398	7,744	26,621	1,906,837
<b>3. FRUITS</b>	<b>1,706,689</b>	<b>530,885</b>	<b>222,739</b>	<b>85,109</b>	<b>82,130</b>	<b>5,744,865</b>
Banana	1,639,765	65,365	91,465	29,768	49,681	3,489,452
Durian	8,045	11	0	0	0	28,525
Jackfruit	2,600	398	6,497	332	492	40,248
Mandarin	4,846	106	1,686	13	150	20,657
Mango	17,280	18,232	42,650	49,473	26,806	595,138
Papaya	7,806	1,766	5,249	3,901	3,386	58,160
Pineapple	11,064	444,258	58,616	660	211	1,442,815
Pomelo	13,210	290	1,389	72	266	22,557
Calamansi	2,073	460	15,186	890	1,138	47,313
<b>4. INDUSTRIAL CROP</b>	<b>1,314,746</b>	<b>317,774</b>	<b>2,148,732</b>	<b>1,117,351</b>	<b>565,233</b>	<b>21,435,066</b>
Coconut**	837,658	308,067	333,620	400	26,559	3,045,772
Sugarcane	408,804	0	1,793,497	1,109,005	538,324	17,774,401
Coffee	42,318	8,298	20,954	740	12	133,999
Cacao	5,589	172	52	0	10	7,927
Rubber	14,545	120	0	0	0	181,200
Cashew	214	6	603	6,298	0	153,762
Castor	105	1	0	0	23	545
Tobacco	28	21	0	633	233	63,706
Abaca	5,308	727	0	0	15	64,833
Cotton	48	362	0	275	51	8,093
Kapok	49	1	6	0	5	742
Ramie	81	0	0	0	0	86
<b>5. CUT FLOWERS*</b>	<b>889</b>	<b>49</b>	<b>110</b>	<b>15</b>	<b>225</b>	<b>5,894</b>
Anthurium	78	10	34	0	0	275
Chrysanthemum	18	2	16	0	117	942
Orchids	717	16	18	0	0	1,199
Rose	75	21	42	15	108	3,478
<b>Grand Total</b>	<b>3,626,892</b>	<b>2,085,230</b>	<b>2,882,929</b>	<b>3,129,247</b>	<b>789,276</b>	<b>45,169,943</b>

Note: \* : unit is thousand dozen

\*\* : value is on copra basis

Source: Data from the Bureau of Agricultural Statistics, Department of Agriculture

fishing, 0.6% for aquaculture, and 0.7% for commercial fishing), despite the long coastlines.

Yields of plantation crops such as banana, papaya and coconut are much higher in the DIDP Area than respective national averages. Yield of irrigated rice is also higher probably due to sufficient irrigation water supply throughout the year without typhoons. Yields of pomelo, calamansi and eggplant are also significantly higher than respective national averages.

#### (4) Industry

Sub-sector structure of industry can be inferred from the employment data (Table 2.7). The DIDP Area has shares larger than its population share (4.8% in 1995) only in mining and quarrying (17.5%), food and beverages (5.5%) and non-metallic mineral products (5.5%). The share of manufacturing sub-sector (4.4%) in the DIDP Area is much smaller than that in more advanced regions of CALABARZON, Central Luzon and Cebu, although it is larger than the share in SOCSARGEN.

The per capita gross value-added generated by the manufacturing sub-sector is an indicator to represent the stage of industrialization. It was P4,658 in the DIDP Area in 1995, lower than P5,517 in Central Luzon, P7,307 in Region IV including CALABARZON, and P5,318 in Region VII including Cebu.

#### 2.3.2. Livelihood

Average family income is compared between the DIDP Area and other regions as well as the Philippines (Table 2.9). The average family income in the DIDP Area is lower than not only that in CALABARZON and Central Luzon but also the average in the Philippines. It exceeds the average family income in SOCSARGEN and Cebu as well as Mindanao. Poverty incidence in the DIDP Area is higher (40.6% in 1994) than the national average (35.5%), although lower than that in Mindanao (55.2%).

**Table 2.9 Comparison of Average Family Income (1994)**

	No. of Families	Ave. Family Income (Pesos)
Philippines	12,754,984	83,161
DIDP Area	585,081	73,215
SOCSARGEN	291,145	64,084
CALABARZON	1,313,485	97,014
Central Luzon	1,274,646	94,092
Cebu	493,364	67,586

Source: 1994 Family Income and Expenditure Survey, NSO

### 2.3.3. Population growth and migration

The average population growth during 1980-95 in the DIDP Area (2.72% per annum) is higher than that in Central Luzon (2.40%) and Cebu (2.23%) as well as the national average and the average in Mindanao (2.68%) (Table 2.10). Population growth has been consistently low in Visayas in the recent past, averaging 1.61% per annum during 1980-90 and 1.60% per annum during 1990-95.

Inter-regional migration statistics indicate that of all the in-migrants into Southern Mindanao from outside Mindanao in 1985-90, 75% came from Visayas. Net in-migrants from Visayas accounted for 82.5% of the total number of net-migration into Southern Mindanao from all the regions during the same period.

**Table 2.10 Comparison of Population and Its Growth**

	Population (1,000)			Population growth (% p.a.)		
	1995	1990	1980	1990-95	1980-90	1980-95
Philippines	68,616.5	60,703.2	48,098.5	2.48	2.35	2.40
DIDP Area	3,288.8	2,933.7	2,198.7	2.31	2.93	2.72
Mindanao	16,205.5	14,298.2	10,905.2	2.54	2.75	2.68
CALABARZON	7,750.2	6,349.5	4,603.4	4.07	3.27	3.53
Central Luzon	6,932.6	6,199.0	4,802.8	2.26	2.58	2.48
Cebu	2,921.1	2,646.5	2,091.6	1.99	2.38	2.23
NCR	9,454.0	7,968.4	5,925.9	3.53	2.98	3.16

Source: 1997 Philippine Statistical Yearbook

### 2.3.4. Social conditions

Social conditions in the DIDP Area are compared with those in other regions by the human development index, which is a composite index of achievements in basic human capabilities in three fundamental dimensions: long and healthy life, knowledge, and decent standard of living (Table 2.11). The provinces in the DIDP Area have generally low index values as compared with CALABARZON, Central Luzon and the national average, while Cebu also has a low index value. Moreover, these values did not improve significantly between 1990 and 1994 in the DIDP provinces.

The number of main health centers is grossly insufficient in the DIDP Area as seen in the health sector (subsection 5.2.4). The satisfaction ratio of required number of main health centers is lower than 40% in the DIDP Area, while it is 68% in the Philippines as a whole. Performance of pupils at public elementary schools is generally low in the DIDP Area as seen in the education sector (subsection 5.2.2). The survival and the retention rates were 62% and 83% respectively in the DIDP Area as compared with the national averages of 72% and 92% in the school year 1996-97.

**Table 2.11 Comparison of Human Development Index (1990, 94)**

	1990	1994
Philippines	0.665	0.660
DIDP Area		
Davao Province	0.554	0.613
Davao del Sur	0.532	0.518
Davao Oriental	0.506	0.526
CALABARZON		
Batangas	0.663	0.716
Cavite	0.723	0.840
Laguna	0.732	0.774
Quezon	0.567	0.627
Rizal	0.823	0.813
Central Luzon	0.748	0.730
Cebu	0.550	0.589

Source: 1997 Philippine Statistical Yearbook

### 2.3.5. Land cover

The DIDP Area has much larger shares of designated forest land (61.8%) and established timber land (52.9%) than the corresponding shares in SOCSARGEN (40.3% and 33.3%), CALABARZON (31.7% and 24.0%), Central Luzon (40.8% and 23.2%), and Cebu (27.7% and 20.8%). These shares are larger than the respective national averages (50.0% and 33.4%) as well. However, forest resources have been rapidly degrading, and as of 1994 the woodland area covers only 25.5% of the total DIDP land area.

Agricultural statistics on farmland indicate that the alienated and disposable (A & D) land in the DIDP Area is practically all utilized as farmland, while the total area of farmland is only 44.0% of the A & D land in Cebu, 56.5% in Central Luzon, 67.8% in CALABARZON, and 76.0% in SOCSARGEN. The average farm size in the DIDP Area was 2.98 ha in 1991, the largest of these regions and larger than the national average of 2.16 ha. The farmland in the DIDP Area is rather extensively utilized.

### 2.3.6. Infrastructure

The ratio of population served by safe water supply is 61% in the DIDP Area as compared with 72% in the Philippines. On the basis of service coverage of existing water supply systems, the access to safe water was assured in 1991 for 73.7% of service population in the Philippines, 95.9% in Central Luzon, and 79.8% in CALABARZON while the service ratio in Southern Mindanao was 75.2%.

The coverage of municipalities for electrification is still 87% in Southern Mindanao, while it is over 93% in any other regions and 98% in the Philippines as a whole. Household electrification on the service coverage bases as of 1996 is 48% in Southern Mindanao, comparable to levels in Visayas but lower than most other regions and the national average of 57%.

The number of telephone lines per 1,000 population is 24 in Southern Mindanao as of 1996, larger than most other regions except Central Luzon (34), CALABARZON

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(38), NCR (205), Ilocos (30) and Cagayan Valley (39). The road density of all the roads is 0.45 km/km<sup>2</sup> in Southern Mindanao as of 1996, lower than most other regions and the national average (0.54 km/km<sup>2</sup>).

#### **2.4. DIDP Area in BIMP-EAGA Context**

##### **(1) Position and priorities of DIDP Area**

Two framework plans are available to provide official guidelines for the development of Mindanao: the Mindanao 2000 Development Framework Plan (1995-2010) and the Philippine National Development Plan (1999-2025). Both of them position the DIDP Area in relation to the BIMP-EAGA. The first plan characterizes the DIDP Area together with SOCSARGEN and Central Mindanao as the Southern Mindanao Food Triangle and Agri-industrial Hub in the BIMP-EAGA. The second plan defines the DIDP Area as the Export Base to the EAGA market.

More specific investment opportunities are indicated by region in Mindanao based on natural resource endowments, geographic locations and other existing conditions as summarized in Table 2.12. The investment opportunities in the DIDP Area center on agro-processing such as banana processing, fruits and vegetables processing, snack food manufacturing, coconut coir and activated carbon manufacturing, seaweed processing, and furniture/wood components. Other resource-based industries are construction materials and jewelry. Light industries are prioritized throughout Mindanao.

According to the ADB study on EAGA, roles of the Philippine members of EAGA (mainly Mindanao) are "bread basket" of EAGA, centers of high value-added agro- and aqua-processing and exporting, tourism anchor, labor and skills provider, and metal clusters. More details are given in Table 2.13, compared with non-Philippine members of EAGA. As seen from the table, most opportunities identified for Mindanao are relevant to the DIDP Area, and also in line with the Mindanao 2000.

##### **(2) Locational conditions of DIDP Area**

Selected locational conditions are compared in Table 2.14 between the Philippine and the non-Philippine members of EAGA. Locational conditions of Mindanao are better than those of three other EAGA countries with respect to land prices, wages of skilled labor and technicians, and water rates. These favorable conditions are generally shared by the DIDP Area as well.

**Table 2.12 Investment Opportunities by Region in Mindanao**

	SOUTH		NORTH		WEST	
	Davao Gulf/DIDP	SOSKSA-RGEN	Greater Northern Corridor	CARAGA	ZAMBONGA-BASILAN, etc.	COTABATO-ARMM
<b>Food Processing</b>	X	X	X	X	X	X
• Flour & Starch Milling	X	X	X	X	X	X
<b>Agri-Industries</b>						
• Meat & Poultry Processing						X
• Livestock Meat Processing		X	X			
• Banana Processing	X			X		
• High-Value Fruit & Vegetable Processing	X	X	X	X	X	X
• Integrated Fruit & Vegetable Processing	X		X			
• Fruit & Vegetable Processing					X	
• White Potato Processing			X			
• Coffee Processing			X			
• Feedmilling		X				
• Grains Central/Bulk Handling Feed Mill			X			
• Cassava Starch Mill						X
• Large-scale Integrated Coconut Processing						X
• Palm Oil Processing		X		X		X
• Rice Processing				X		
• Sugarcane Processing						X
• Snack Food Manufacturing	X	X	X	X	X	X
• Coconut Coir & Activated Carbon Manufacturing	X	X	X	X	X	X
• Seaweed Processing	X	X	X	X	X	X
• Fish Canning					X	
• Aquaculture Products Processing					X	
• Furniture & Wood Components	X	X	X	X	X	X
• Wood Processing				X		
• Pharmaceutical						X
• Rubber Processing					X	X
• Abaca Processing				X		
<b>Other Resource-based</b>						
• Cement Production				X		
• Construction Materials	X					
• Mining (Gold, Nickel, Chromite)				X		
• Oil Exploration and Refinery, Petrochemical Complex						X
• Jewelry	X			X		
<b>Other Industries</b>						
• Light Industry	X	X	X	X	X	X
• Engineering & Metal Working			X			

**Note:** SOSKSARGEN (General Santos City, South Cotabato, Sultan Kudarat, Sarangani)  
 Greater Northern Corridor (Cagayan de Oro City, Iligan City, Marawi City, Misamis Oriental, Bukidnon, Camiguin)  
 CARAGA (Butuan City, Surigao City, Agusan del Norte, Agusan del Sur, Surigao del Norte, Surigao del Sur)  
 ZAMBOANGA-BASILAN, etc. (Zamboanga City, Zamboanga del Sur, Zamboanga del Norte, Basilan, Sulu, Tawi-Tawi)  
 COTABATO-ARMM (Cotabato City, North Cotabato, Maguindanao, Lanao del Sur)  
 Source: Mindanao, Your Gateway to Opportunity (GEM/USAID)



**Table 2.13 Investment Opportunities in EAGA Sub-regions**

	Philippines		Indonesia		Malaysia		Brunei
	Mindanao	Palawan	Kalimantar	Sulawesi	Sabah	Sarawak	
<b>Spill-over Manufacturing</b>							
Sawmilling/Wood Processing	X		X (East)				
Construction Materials *1			X		X	X	
Metal Products	X		X				
Machine/Tool (for Agri.)	X		X (East)				
Shipbuilding & Repair					X	X	
Packaging Materials	X						
<b>Use of Shared Natural Resources</b>							
Wood Products *1			X		X		X
Basic Chemicals *1	X						
Oleochemicals	X			X			
Organic Chemicals/Fertilizers	X		X		X	X	
Downstream Petrochemicals *1						X	
Pharmaceuticals							X
Rubber Products	X						
Silica Sand/Glass					X	X	X
Cement	X		X (East)				
Marble Processing	X						
Container Repair, etc.	X (metal)					X	
Non-metallic Mineral Products *1			X				
Iron & Steel Products *1	X						
Ferro-alloy Products	X						
<b>Use of Labor Complementarity</b>							
Garments	X						X
Electronic/Electrical Assembly						X	
Electronic/Electrical Compone	X						
Metal Working & Machinery	X						
<b>Other Factors</b>							
Coconut Processing	X			X (North)			
Seaweed Processing				X (North)	X		
Rattan Processing	X				X		
Biotechnology Processing							X
Coco-chemicals/Products	X			X			
Concrete Products	X						
Clay Roof/Tiles/Bricks	X						
Aggregates	X	X					
Pre-Fab. Bldg. Components	X						
Machine Tool (for wood)			X (East)				
Steel Billets						X	
Telecom. Equipment Assembl	X		X				X

Note: \*1 refers to export expansion. Opportunities are in the short-medium term  
Source: EAST ASEAN GROWTH AREA (December 1996, Volume 1, Part One, ADB)

**Table 2.14 Locational Conditions in EAGA Sub-regions**

	Philippines	Indonesia	Malaysia		Brunei
	Mindanao Palawan	Kalimantar Sulawesi	Sabah	Sarawak	
<b>1. Industrial Land Sales Price in 1994 (US\$/m<sup>2</sup>)</b>	10.6-26.7		10.8-32.3		12-27
<b>2. Average Wage in 1995</b>					
Unskilled Labor (US\$/day)	4.5-5.0	2.3-3.3	5.3-7.3		19.5
Skilled Labor (US\$/day)	7.7-8.5	6.0-13.0	10.8-13.0		32.5
Technicians (US\$/month)	130-160	220	320-400		780
<b>3. Utilities Service Rates in 1995</b>					
Off-Peak Electricity (US\$/kwh)	0.051-0.053	0.044-0.076	0.104-0.130		0.04-0.14
Water Rate for Industry (US\$/m <sup>3</sup> )	0.04-0.48	0.92-1.21	0.36-0.42		0.45-0.57
Com. Rate (US\$/minute to USA)	2.21	2.21	1.98		0.18

Source: EAST ASEAN Growth Area, ADB