

JAPAN INTERNATIONAL COOPERATION AGENCY

DEPARTMENT OF THE INTERIOR AND LOCAL GOVERNMENT
THE REPUBLIC OF THE PHILIPPINES

**THE STUDY ON THE
PROVINCIAL WATER SUPPLY, SEWERAGE AND
SANITATION SECTOR PLAN
IN
THE REPUBLIC OF THE PHILIPPINES**

VOLUME II -- [5]

SUPPORTING REPORT

**PROVINCIAL WATER SUPPLY, SEWERAGE AND
SANITATION SECTOR PLAN
FOR THE PROVINCE OF**

SAMAR



DECEMBER 1999

NIPPON JOGESUDO SEIKI CO., LTD.

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THE REPUBLIC OF THE PHILIPPINES

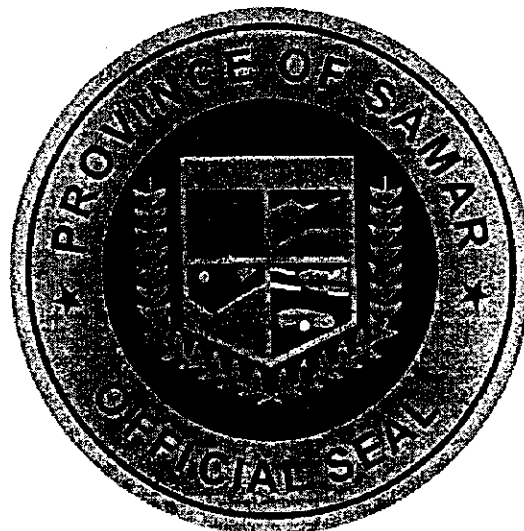
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VOLUME II SUPPORTING REPORT

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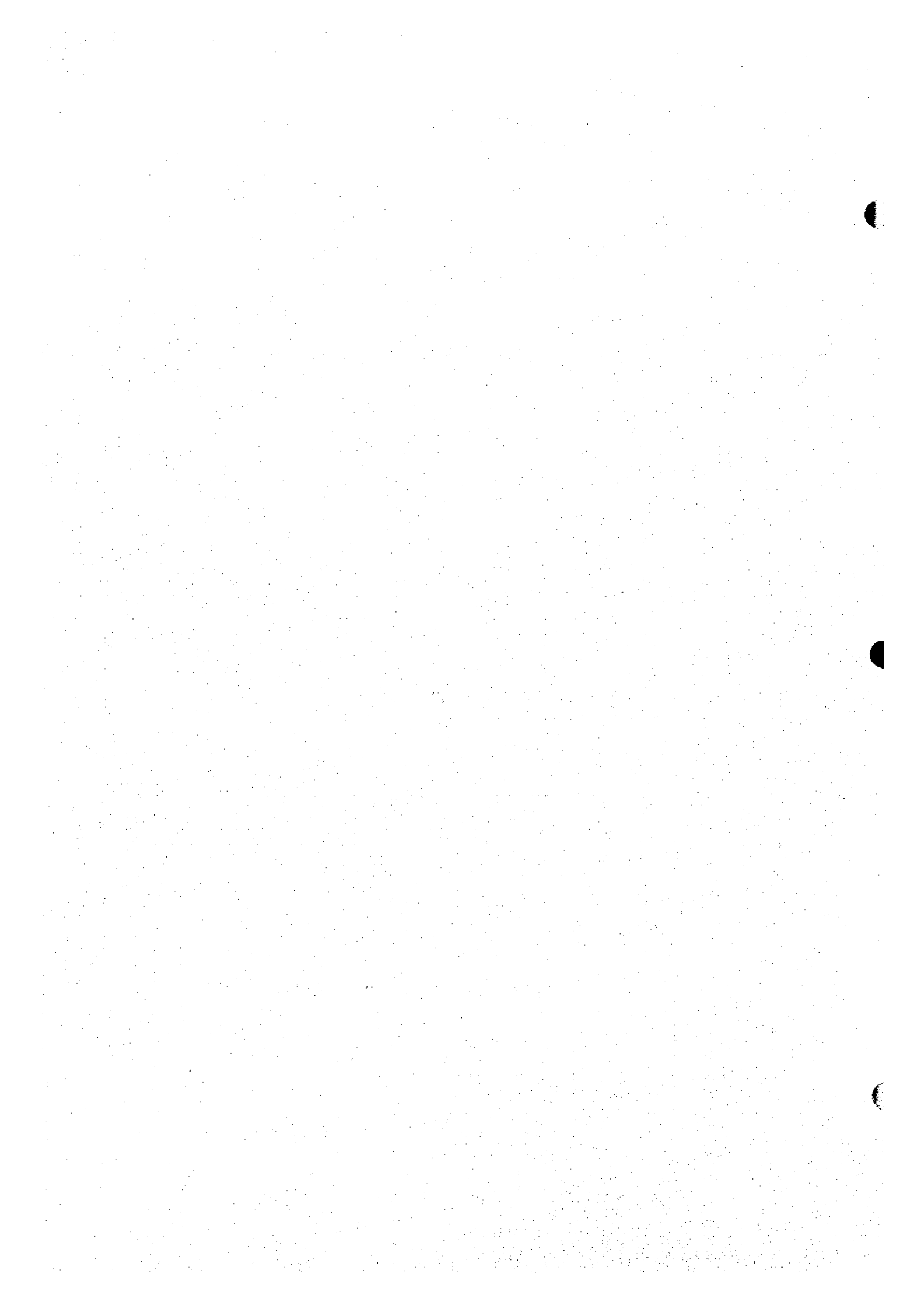
**PROVINCIAL WATER SUPPLY, SEWERAGE AND
SANITATION SECTOR PLAN**

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**BACKGROUND INFORMATION
AND EXISTING CONDITIONS**

A

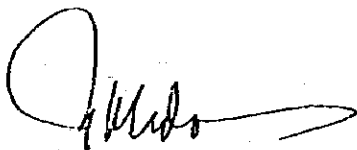


- 1. INTRODUCTION
- 1.3 The Provincial Plan for the Province of Samar
- 1.3.1 Preparation of the Plan

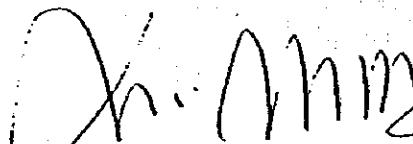
MINUTES OF DISCUSSIONS
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SANITATION SECTOR PLANS
FOR
VISAYAS AND MINDANAO
IN
THE REPUBLIC OF THE PHILIPPINES

AGREED UPON BETWEEN
THE DEPARTMENT OF THE INTERIOR AND
LOCAL GOVERNMENT
AND
THE STUDY TEAM OF
JAPAN INTERNATIONAL COOPERATION AGENCY

MANILA, JANUARY 26, 1998



MR. NORMANDO J. TOLEDO
Director
Office of the Project Development
Services
Dept. of the Interior and Local Government



MR. MASATOSHI MOMOSE
Team Leader, Study Team
Japan International Cooperation
Agency

Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, dispatched the Study Team to the Republic of the Philippines on January 13, 1998 to conduct "The Study on Provincial Water Supply, Sewerage and Sanitation Sector Plans for Visayas and Mindanao" (hereinafter referred to as "the Study") in accordance with the Implementing Arrangement for the Study executed between the JICA and the Department of the Interior and Local Government (hereinafter referred to as "DILG") on August 27, 1997.

A series of discussions were made on the Inception Report for the Study between the Study Team and the officials of DILG and other agencies concerned. In the course of the discussions, both parties have agreed with the general approach and methodology, and implementation arrangements detailed in the Inception Report. Also agreed upon were the changes made as to which provinces are to be covered in 1st batch and 2nd batch (refer to 1. Study Area). The list of attendees in the series of discussions is presented in Appendix A.

1. Study Area

The subject twenty-one (21) provinces were grouped into four batches in the "Implementing Arrangement on the Study". However, a delay in the organization of the Provincial Sector Planning Team (PSPT) in the 1st batch provinces of Misamis Oriental and Surigao del Sur prompted their transfer to the 2nd batch. Instead, Davao del Sur and Davao Oriental from the 2nd batch whose PSPTs were already formed were moved up in their place. In this connection, the DILG completed to exchange MOA with the provinces on the participation and full support by the provinces.

The present study area covers the following 21 provinces grouped into four batches.

1 st BATCH	2 nd BATCH	3 rd BATCH	4 th BATCH
1. Agusan del Norte	1. Davao	1. Biliran	1. Aklan
2. Agusan del Sur	2. Misamis Oriental	2. Eastern Samar	2. Antique
3. Davao del Sur	3. Sarangani	3. Leyte	3. Capiz
4. Davao Oriental	4. South Cotabato	4. Northern Samar	4. Iloilo
5. Surigao del Norte	5. Surigao del Sur	5. Southern Leyte	5. Negros
		6. Western Samar	Occidental

With regard to Davao province, the separation into two provinces is currently under legislative process. Upon the formalization of an additional province, the total number of the provinces in the study area would be 22. The DILG has requested that the forthcoming province be included in the study area. The JICA Study Team will relay the request to JICA headquarters for consideration. The DILG is expected to complete the execution of the MOAs of the 2nd batch provinces by early July to catch up with the planned schedule. The required arrangements in terms of subject provinces and study period will be discussed between the DILG and JICA.

2. General Approach and Methodology to the Study

The PW4SPs will be prepared with the full participation of the respective PSPTs together with DILG coordinators and the Study team in accordance with the approach and methodology outlined in the Inception Report. The following topics were confirmed during the discussions:

(1) Planning framework for future sector development

- a) Planning base year is 1997 for 1st and 2nd batches and 1998 for 3rd and 4th batches. Medium-term and long-term target years are 2005 (implementation program: year 2001 to year 2005) and 2010, respectively.
- b) Plan will be prepared in compliance with "Implementing Rules and Regulations of NEDA Board Resolution No. 4".

(2) Standard provision of school toilets

Discussions and confirmation on the provision of school toilets will be arranged with DECS.

(3) Options on the sludge removal from septic tank and its disposal will be shown in the plan.

(4) Model province for 1st batch is Agusan del Sur.

3. Sector Information Collection

The DILG and the JICA Study Team will continuously collect information on the projects/programs assisted by various financial sources. The information will be reflected in the plans.

4. Implementation Set-Up for the Study

In accordance with the Implementing Arrangements between the DILG and the JICA, the DILG shall:

- (1) Secure the safety of the JICA Study Team;
- (2) Assign DILG counterpart staff members who will coordinate and assist PSPTs at the provincial level;
- (3) Set-up PSPTs by respective provincial governments in the study area and secure budget to carry out the Study;
- (4) Through PSPT in each study area province; facilitate and coordinate in data gathering with municipal government and other agencies concerned, and participate in workshops and preparation of PW4SP;

- (5) Facilitate coordination with concerned agencies like DPWH, DOH, NEDA, LWUA and with appropriate bodies.

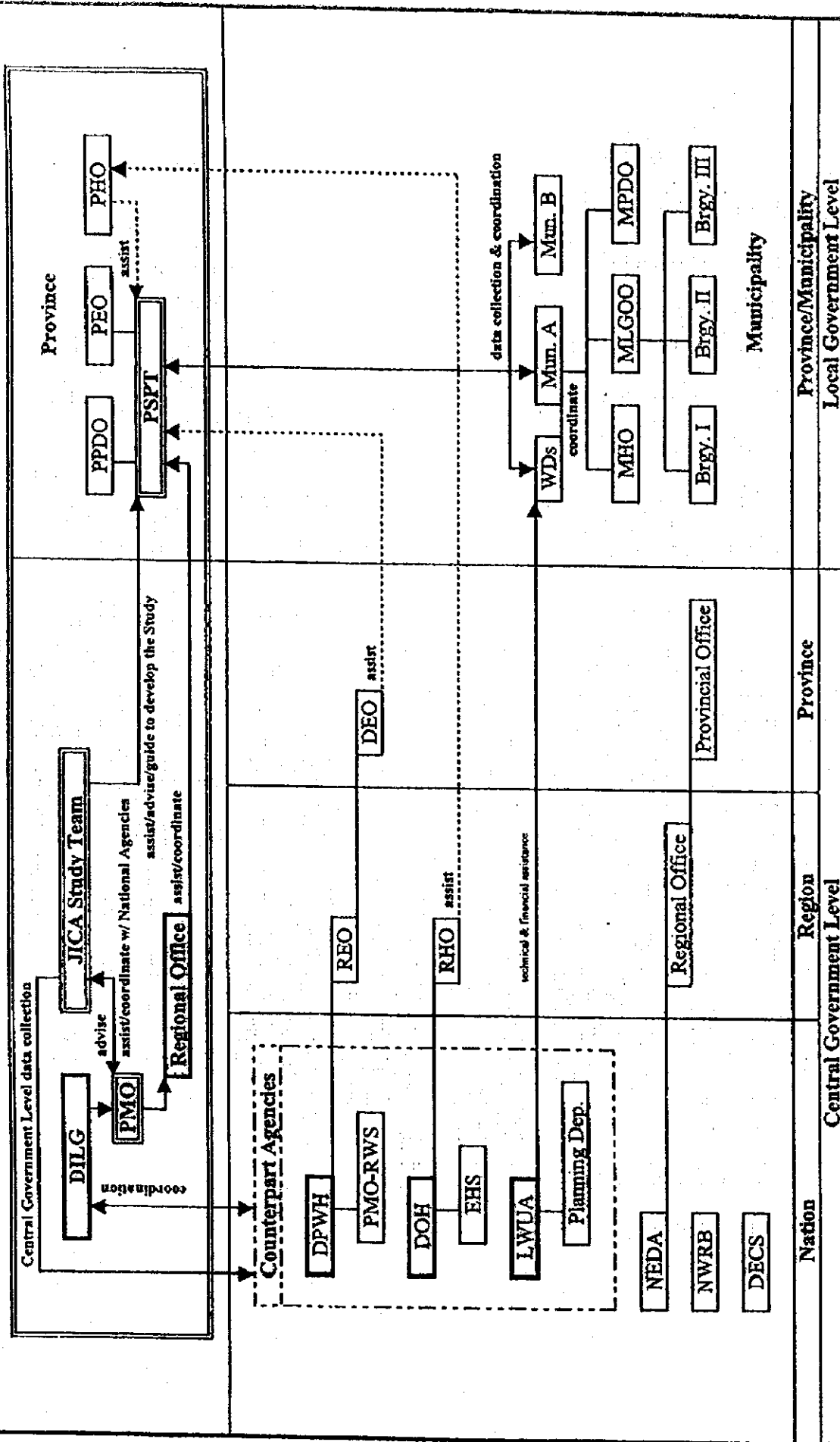
The JICA Study Team shall:

- (1) Pursue technology transfer to the Philippine counterpart personnel in the course of the Study and;
- (2) Assist PSPTs in the preparation of the PW4SP.

LIST OF ATTENDEES IN THE SERIES OF DISCUSSIONS

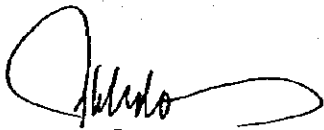
<u>ATTENDEES</u>	<u>DESIGNATION</u>
A. DILG	
1. Mr. Normando J. Toledo	Director, Office of Project Development Services
2. Mr. Orville M. Roque	Program Manager, WSS-PMO
3. Ms. Ellen I. Pascua	Asst. Program Manager, WSS-PMO
4. Mr. Rogelio B. Ocampo	Chief, Planning Division, WSS-PMO
5. Ms. Fe Crisilla M. Banluta	PW4SP Project Officer, WSS-PMO
B. Other Agencies	
1. Mr. Sam Siao	Officer, PMO-RWS, DPWH
2. Dr. Mario Villaverde	Director, EHS, DOH
C. JICA Advisory Committee	
1. Ms. Keiko Yamamoto	Chairman, Advisory Committee
2. Mr. Keiichi Kanaya	Member, Advisory Committee
D. JICA Headquarters	
1. Mr. Shigeyuki Matsumoto	Second Development Study Division, Social Development Study Dept.
E. JICA Study Team	
1. Mr. Masatoshi Momose	Team Leader/Water Supply Planning
2. Mr. Nobuki Abe	Water Supply/Sanitation Engineer
3. Ms. Consuelo B. Estepa	Community Dev't/WID Specialist
4. Ms. Elizabeth L. Verzola	Socio-Economic/Financial Specialist
5. Mr. Kenji Takayanagi	Water Source Development Specialist
6. Mr. Emmanuel L. Patingo	Data Management Specialist

Figure 1.3.1
Organization Chart for Study Implementation




MINUTES OF DISCUSSIONS
ON
THE PROGRESS REPORT
FOR
THE STUDY ON PROVINCIAL WATER SUPPLY, SEWERAGE AND
SANITATION SECTOR PLANS
FOR
VISAYAS AND MINDANAO
IN
THE REPUBLIC OF THE PHILIPPINES
AGREED UPON BETWEEN
THE DEPARTMENT OF THE INTERIOR AND
LOCAL GOVERNMENT
AND
THE STUDY TEAM OF
JAPAN INTERNATIONAL COOPERATION AGENCY

MANILA, MARCH 18, 1998



MR. NORMANDO J. TOLEDO
Director
Office of the Project Development
Service
Dept. of the Interior and Local Government



MR. MASATOSHI MOMOSE
Team Leader, Study Team
Japan International Cooperation
Agency

The Stage I fieldwork for "the Study on Provincial Water Supply, Sewerage and Sanitation Sector Plan" started on January 13, 1998 and completed on March 23, 1998.

A series of discussions were held throughout the course of the Study, between JICA Study Team and officials concerned including DILG, NEDA, DOH, DPWH and other central government agencies and provinces. The general approach and methodologies, as presented in the Inception Report, have been employed for the fieldwork.

A Progress Report, which covers all outputs during the work period, was prepared entailing part of PW4SP for the respective provinces. The contents of the report were basically agreed upon on March 18, 1998 between JICA Study Team and officials of the DILG. The list of attendees to the meeting is presented in Appendix A. The following issues/problems on the arrangements required for the implementation of the Study were discussed, and the Study Team will relay the modified arrangements required to JICA headquarters.

(1) Modified Arrangements Required for 1st batch Study

1) Due to the presidential election scheduled on May 11, 1998, the second workshop may be held from May 18 to May 22, 1998 after the election, and tentatively starting the 2nd field work on May 13, 1998.

2) The venue for the final workshop was requested by concerned PPDCs to be held in Mindanao rather than in Manila as originally planned. This is because of the financial constraint on the travel expenses required for 7 members of respective PSPTs under the current GOP instruction to LGUs to reduce its planned annual expenditures of up to 25%.

(2) Provinces to be Covered by the 2nd Batch

The total number of provinces for the 2nd batch (5 provinces) will be kept as previously agreed between the two parties. However, Surigao del Sur will be omitted from the Study, since timely establishment of the PSPT by the province seems to be difficult. Instead of the said province, either the newly created Compostela Valley or Bukidnon (Region X) would be included.

The DILG will inform the Study Team of the possibility in the setting up of PSPT by the administration of Compostela Valley by the middle of June 1998. If not, DILG will make an advanced arrangement with Bukidnon.

(3) Electric Resistivity Prospecting and Test Boring

Comparatively reliable data to evaluate the development potential of water source were collected for 1st batch provinces during the fieldwork. It is assumed that the conduct of the field test for groundwater analysis, given a limited period, cannot be able to contribute significantly to the level of accuracy in the preparation of M/P and F/S. The situation will remain the same for 2nd batch provinces. Accordingly, it is not recommended to conduct field test for this study.

The required areas and the scope of work/surveys, such as field tests, will be recommended in the PW4SP and will be considered during detailed design and construction stages.

(4) Time Constraint in Data Collection/Validation/Follow-up

It was found, both by the Study Team and the DILG through the fieldwork, the following problems on data collection/validation/follow-up:

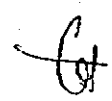
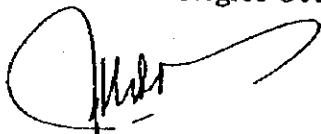
- 1) The summary reports on the sector status prepared by NEDA Regional Office through UNICEF fund were field confirmed as the materials to provide approximate sector situations in the fact of no existence of sector related information at present.
- 2) Data collection by PSPTs had sometimes to be done at the barangay level, due to limited data available in the municipal level. Thus, additional time was required for PSPTs to access to remote rural barangays.
- 3) Comprehensive planning work by the province in Mindanao area is still initial stage. It is necessary for the activities to ensure much more time through intensive technology transfer to DILG coordinators and PSPTs.

Based on the lessons learned, the Study Team and the DILG recognized the need of the review on the allotted period for the activities. The Study Team will relay this matter to JICA headquarters.

(5) Cities to be Covered in the Preparation of PW4SP

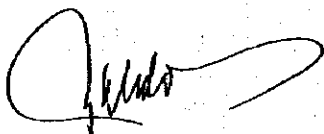
Of the three classes of cities in the Local Government Code, only component cities, which are under the jurisdiction of the provincial government will be considered. The subject cities are as follows:

<u>Province</u>	<u>Component City</u>
Surigao del Norte	Surigao City
Davao	Tagum City and Island Garden City
Leyte	Tacloban City
Western Samar	Calbayog City
Capiz	Roxas City
Iloilo	Passi City
Negros Occidental	Bago City, Cadiz City, La Carlota City, San Carlos City and Silay City



LIST OF ATTENDEES IN THE SERIES OF DISCUSSION


<u>ATTENDEES</u>	<u>DESIGNATION</u>
A. DILG	
1. Mr. Orville M. Roque	Program Manager, WSS-PMO
2. Ms. Ellen I. Pascua	Asst. Program Manager, WSS-PMO
3. Mr. Rogelio B. Ocampo	Chief, Planning Division, WSS-PMO
4. Ms. Fe Crisilla M. Banluta	PW4SP Project Officer, WSS-PMO
5. Ms. Charito Araza	Area Coordinator, WSS-PMO
6. Ms. Maria Contessa Navarro	Area Coordinator, WSS-PMO
7. Ms. Josephine Ramos	Area Coordinator, WSS-PMO
8. Ms. Susan Mangoda	Area Coordinator, WSS-PMO
9. Ms. Crisanta Rapirap	Area Coordinator, WSS-PMO
B. JICA Study Team	
1. Mr. Masatoshi Momose	Team Leader/Water Supply Planning
2. Mr. Nobuki Abe	Water Supply/Sanitation Engineer
3. Mr. Kenji Takayanagi	Water Source Development Specialist
4. Ms. Consuelo B. Estepa	Community Dev't./WID Specialist
5. Ms. Elizabeth L. Verzola	Socio-economic/Financial Specialist



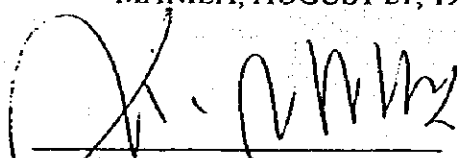
MINUTES OF DISCUSSIONS
ON
THE DRAFT FINAL REPORT
FOR
THE STUDY ON PROVINCIAL WATER SUPPLY, SEWERAGE AND
SANITATION SECTOR PLANS
FOR
VISAYAS AND MINDANAO
IN
THE REPUBLIC OF THE PHILIPPINES

AGREED UPON BETWEEN
THE DEPARTMENT OF THE INTERIOR AND
LOCAL GOVERNMENT
AND
THE STUDY TEAM OF
JAPAN INTERNATIONAL COOPERATION AGENCY

MANILA, AUGUST 27, 1998



MR. BENITO R. CATINDIG
Assistant Secretary for Support
Services and Regional Offices
Dept. of the Interior and Local Government



MR. MASATOSHI MOMOSE
Team Leader, Study Team
Japan International Cooperation
Agency

The Stage II fieldwork for "the Study on Provincial Water Supply, Sewerage and Sanitation Sector Plan" (hereinafter referred to as "the Study") resumed on May 20, 1998 and will be completed on March 30, 1999. Upon completion of the 1st batch study, the study for the 2nd batch will start on August 30 with an "Orientation Workshop". It is further scheduled that the 2nd batch study will be finalized by February 1999 and 3rd batch work will be commenced before the completion of this fieldwork.

Major conditions and assumptions for the development of Medium-Term and Long-Term sector plans for the subject provinces under the 1st batch were discussed and finalized between respective PSPTs and the JICA Study Team (hereinafter referred to as "the Team") through Workshop No. 2 (held between May 26 and 28, 1998) and during planning work thereafter. In this connection, the target year for the Medium-Term development plan was revised from 2005 to 2003 in order to realize the plan earlier.

The Draft Final Reports for the five (5) provinces of the 1st batch were prepared and the final workshop was conducted between August 24 and 26, 1998 to present and discuss the contents of the reports. The contents of the reports were basically agreed upon on August 27, 1998 by the Team and officials concerned on the Philippine side. The list of attendees to the meeting is presented in Appendix A. The following were confirmed and agreed upon by both parties.

1. Correction of typographical errors of the Draft Final Report will be undertaken by the Team prior to printing of the Final Report. The Final Report will be submitted by October 1998.
2. Adoption of the Plans by the Provincial Council (Sangguniang Panlalawigan) shall be facilitated by the DILG.
3. Inclusion of the Message of the Governor in the Main Report of respective PW4SPs.

With regard to the 2nd batch study, both parties have agreed on the general approach and methodology, and implementation arrangements adopted for the 1st batch study. Among them, the following are the basic conditions to be applied for the planning.

(1) Study Area

The DILG completed the exchange of MOA with the 2nd batch provinces on the participation and full support by the concerned provinces. The subject provinces are Misamis Oriental, Bukidnon, Davao del Norte, South Cotabato and Sarangani. The province of Bukidnon was selected for model province study.

(2) Planning Framework for Future Sector Development

- a) Planning base year is 1997 and Medium-Term and Long-Term target years are 2003 (implementation program: year 1999 to year 2003) and 2010, respectively.
- b) Plans will be prepared in compliance with the "Implementing Rules and Regulations of NEDA Board Resolution No. 4".

(3) Implementation Set-Up/Arrangements for the Study

The study will be conducted in accordance with the Implementing Arrangements between the DILG and the JICA, as done with the 1st batch study.

Both parties will make timely and effective arrangements through the study period to achieve the purpose of the Study within the set time-table based on the lessons learned from the 1st batch study. In this regard, the following are put into practice.

- a) Data collection by the PSPTs will be commenced in advance (overlapped activity with the preceding batch study) to ensure longer period for this activity as compared with the original time allotted.
- b) Planning period by the PSPTs will be extended by adjusting the timing for the conduct of 2nd workshop for data encoding and discussions to set-up planning fundamentals.
- c) Practical arrangements will be made to increase the opportunities for further collaboration in the planning work among PSPTs, DILG coordinators and the Team.

For the arrangement of the 3rd batch study, the DILG will confirm the subject provinces including the model province through the MOA by December 1998.


LIST OF ATTENDEES IN THE SERIES OF DISCUSSIONS

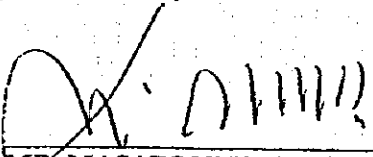
<u>ATTENDEES</u>	<u>DESIGNATION</u>
<i>A. DILG</i>	
1. Mr. Normando J. Toledo	Director, Office of Project Development Services
2. Ms. Ellen I. Pascua	Acting Program Manager, WSS-PMO
3. Mr. Rogelio B. Ocampo	Chief, Planning Division, WSS-PMO
4. Ms. Fe Crisilla M. Banluta	PW4SP Project Officer, WSS-PMO
<i>B. Other Agencies</i>	
1. Ms. Cristina Santiago	PIS, NEDA
<i>C. JICA Advisory Committee</i>	
1. Ms. Keiko Yamamoto	Chairman, Advisory Committee
2. Mr. Keiichi Kanaya	Member, Advisory Committee
<i>D. JICA Headquarters</i>	
1. Ms. Akiko Hayashi	Second Development Study Division, Social Development Study Depart.
<i>E. JICA Study Team</i>	
1. Mr. Masatoshi Momose	Team Leader/Water Supply Planning
2. Mr. Nobuki Abe	Water Supply/Sanitation Engineer
3. Mr. Kenji Hiramatsu	Institutional Specialist
4. Ms. Consuelo B. Estepa	Community Dev't./Gender Specialist
5. Ms. Elizabeth L. Versola	Socio-Economic/Financial Specialist
6. Mr. Emmanuel L. Patingo	Data Management Specialist

MINUTES OF DISCUSSIONS
ON
THE DRAFT FINAL REPORT (2nd BATCH)
FOR
THE STUDY ON PROVINCIAL WATER SUPPLY, SEWERAGE AND
SANITATION SECTOR PLANS
FOR
VISAYAS AND MINDANAO
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AGREED UPON BETWEEN
THE DEPARTMENT OF THE INTERIOR AND
LOCAL GOVERNMENT
AND
THE STUDY TEAM OF
JAPAN INTERNATIONAL COOPERATION AGENCY

QUEZON CITY, FEBRUARY 22, 1999


MR. BENITO R. CATINDIG
Assistant Secretary
Dept. of the Interior and Local Government


MR. MASATOSHI MOMOSE
Team Leader, Study Team
Japan International Cooperation Agency

The Stage II fieldwork for "the Study on Provincial Water Supply, Sewerage and Sanitation Sector Plan" (hereinafter referred to as "the Study") resumed on May 20, 1998 and will be completed on March 30, 1999.

The study for the 2nd batch started on August 30, 1998 and will be completed with the final workshop scheduled between February 24 and 26, 1999. During the finalization stage of the 2nd batch study, the study for the 3rd batch was started with an "Orientation Workshop" on February 8 to 10, 1999. It is further scheduled that the 3rd batch study will be finalized by the end of this year.

With regard to the 2nd batch study, major conditions and assumptions for the development of Medium-Term and Long-Term sector plans for the subject provinces were discussed and finalized between the respective PSPTs and the JICA Study Team (hereinafter referred to as "the Team") during Workshop No. 2 between November 4 to 6, 1998 and also at the time of the planning work thereafter. For the entire duration of the planning work, the Team stayed intermittently in Davao City, Cagayan de Oro City and Malaybalay City for better collaboration with the PSPTs.

The Draft Final Reports for the five (5) provinces of the 2nd batch were prepared and discussed on the contents of the reports between the respective PSPTs and the Team during February 15 and 19, 1999. The contents of the reports were basically agreed upon on February 22, 1999 by the Team and the officials concerned in the Philippine side in consideration of the discussion results with PSPTs.

The list of attendees to the meeting on February 22, 1999 is presented in Appendix A. The followings were confirmed and agreed upon by both parties.

1. Further modification/correction on the Draft Final Report will be undertaken by the Team prior to printing of the Final Report based on the discussions with PSPTs. The Final Report will be sent by May, 1999.
2. Adoption of the Plans by the Provincial Council (Sanggunian Panlalawigan) will be pursued and facilitated by the DILG.
3. Inclusion of the Message of the Governor in the Main Report of respective PW4SPs.

Concerning the 3rd batch study, both parties have agreed on the general approach and methodology, and implementation arrangements adopted for the previous batch studies. Among others, the followings are the basic conditions to be applied for the planning.

(1) Study Area

The DILG completed the exchange of MOAs with the 3rd batch provinces regarding the participation and full support by the concerned provinces. The subject provinces are Northern Samar, Eastern Samar, Samar, Biliran, Leyte and Southern Leyte. The province of Leyte was selected for model province study.

(2) Planning Framework for Future Sector Development

- a) Planning base year is 1998 and Medium-Term and Long-Term target years are 2004 (implementation program: year 2000 to year 2004) and 2010, respectively.
- b) Plans will be prepared in compliance with the "Implementing Rules and Regulations of NEDA Board Resolution No. 4", Series of 1994.

(3) Implementation Set-Up/Arrangements for the Study

The study will be conducted in accordance with the Implementing Arrangements between the DILG and the JICA, as done with the 1st and 2nd batch studies.

Both parties will make timely and effective arrangements throughout the study period to achieve the purpose of the Study within the set time-table based on the lessons learned from previous batch studies. In this regard, the following will be put into practice.

- a) Data collection by the PSPTs will start in advance (overlapped activity with the preceding batch study) to ensure longer period for this activity as compared with the original time allotted.
- b) Planning period by the PSPTs will be extended by adjusting the timing for the conduct of the 2nd workshop for data encoding and discussions to set-up planning fundamentals.
- c) Practical arrangements will be made to increase the opportunities for further collaboration in the planning work among PSPTs, DILG coordinators and the Team.

For the arrangement of the 4th batch study, the DILG will confirm the subject provinces including the model province through a MOA by May, 1999.

LIST OF ATTENDEES IN THE SERIES OF DISCUSSIONS

	<u>ATTENDEES</u>	<u>DESIGNATION</u>
<i>A.</i>	<i>DIIG</i>	
1.	Mr. Benito R. Catindig	Assistant Secretary
2.	Ms. Ellen I. Pascua	Program Manager, WSS-PMO
3.	Mr. Rogelio B. Ocampo	Chief, Planning Division, WSS-PMO
4.	Ms. Fe Crisilla M. Banluta	PW4SP Project Officer, WSS-PMO
<i>B.</i>	<i>Other Agencies</i>	
1.	Ms. Christina Santiago	PIS, NEDA
<i>C.</i>	<i>JICA Advisory Committee</i>	
1.	Ms. Keiko Yamamoto	Chairman, Advisory Committee
2.	Mr. Keiichi Kanaya	Member, Advisory Committee
<i>D.</i>	<i>JICA Study Team</i>	
1.	Mr. Masatoshi Momose	Team Leader/Water Supply Planning
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3.	Mr. Kenji Hiramatsu	Institutional Specialist
4.	Mr. Nobukatu Sakiyama	Water Source Specialist
5.	Ms. Consuelo B. Estepa	Community Dev't./Gender Specialist
6.	Ms. Elizabeth L. Versola	Socio-Economic/financial Specialist
7.	Mr. Emmanuel Patingo	Data Management Specialist

2. PLANNING APPROACH FOR FUTURE SECTOR DEVELOPMENT

2.6 Planning Principles and Data Management

2.6.2 Data Management

(1) Computer-based System

The data management system was established to support the Provincial Sector Planning Team (PSPT) in the preparation of the Provincial Water Supply, Sewerage and Sanitation Sector Plan (PW4SP). An essential task of data management is to organize various kind of data an effective and efficient information base.

A computer-based system was applied as a viable solution to process large amount of data and to minimize the human-error in calculation. For this particular project, a dynamic system is designed to allow the planner to adjust planning factors and update the information when further data becomes available.

It is viable and economical t choose the microcomputer with software suitable for the average skills of the common user. In this connection, of the two types of software package available, database and spreadsheet, the latter method was selected. Among the available spreadsheet-type software, EXCEL was used. Excel support file conversion (opening and saving), multiple file opening, graphic presentation of data, What-You-See-Is-What-You-Get (WYSIWYG) formatting, scaleable font and view, etc. The following are the advantage and disadvantages of the spreadsheet method with reference to database method.

Advantage

1. Minimum programming skills
2. Friendly environment to users
3. Graphics presentation of data at user's option.
4. Execution of data linkages at formula level entry
5. Guided formula creation using function wizard

Disadvantage

1. Repeated entry of same formula
2. Sorting or indexing is done manually
3. All data are loaded in memory, which require huge amount of memory.
4. Limited to static data linkages

Data management task starts from the collection of data using the questionnaire forms. The existence and accuracy of data are major concern at this stage to prepare main information bases. Using the microcomputer provided with EXCEL spreadsheet, data in the questionnaire forms are transferred into the forms constructed in EXCEL. Applicable policy, criteria and assumption are entered into key parameter tables. These data are then processed and finally consolidated into target forms. These final provide a map of provincial profile, service coverage, future requirements, cost estimates for future sector development, and funding requirements.

Table 2.6.1 Key Parameter

No.	Description of Key Parameter		Unit	Values	
1.	Service Level	Water Supply			
		Number of household to be served by Level I Facility	HH/Source		
		Number of household to be served by Level II System	HH/Public Faucet		
		Water Consumption Rate for Level III System	Liter/capita/day		
		Sanitation			
		Std. number of student to be served by a unit of Sanitary toilet	Student/Toilet		
		Standard number of toilets for a public utility	Toilet/Public Facility		
2.	Provincial Sector Target	Medium Term Plan	Water Supply		
			Urban Water Supply	% of Population	
			Rural Water Supply	% of Population	
			Sanitation		
			Household Toilet		
			Urban Household Toilet	% of Household	
			Flush	% of Household	
			Pour Flush	% of Household	
			VIP Latrine	% of Household	
			Rural Household Toilet	% of Household	
			Flush	% of Household	
			Pour Flush	% of Household	
		VIP Latrine	% of Household		
		School Toilet	% of Public Student		
		Public Toilet	% of Public Utility		
		Solid Waste	% of Population		
		Long Term Plan	Water Supply		
			Urban Water Supply	% of Population	
			Rural Water Supply	% of Population	
			Sanitation		
			Household Toilet		
			Urban Household Toilet	% of Household	
			Flush	% of Household	
			Pour Flush	% of Household	
			VIP Latrine	% of Household	
			Rural Household Toilet	% of Household	
			Flush	% of Household	
Pour Flush	% of Household				
VIP Latrine	% of Household				
School Toilet	% of Public Student				
Public Toilet	% of Public Utility				
Urban Sewerage	% of Urban Population				
3.	Percentage of Level I Deep Wells to be Rehabilitated		%		
4.	Percentage of Sector Management Cost to Construction Cost				
	Feasibility and Detail Design		% of Construction Cost		
	Construction Supervision		% of Construction Cost		
5.	Community Development and Training Cost				
	Level III		% of Construction Cost		
	Level I, II and Public Toilet		% of Construction Cost		
6.	Recurrent Cost	Level III System (Operating Cost)	Pesos/HH/year		
		Level III System (Spare Parts/Equipment)	% of Construction Cost		
		Level II System (Spare Parts/Equipment)	Pesos/HH/year		
		Level I System (Spare Parts/Equipment)	Pesos/HH/year		
		Public School Toilet Maintenance Cost	Pesos/Toilet/year		
		Public Utility Toilet Maintenance Cost	Pesos/Toilet/year		
7.	Allocation factors/Percentages of IRA				
	From Provincial		%		
	From Municipality and Brgy.		%		
8.	Funding Levels/Percentages for Different Financing Scenarios				
	1st Scenario		% Funding Available		
	2nd Scenario		% Funding Available		
	3rd Scenario		% Funding Available		
	4th Scenario		% Funding Available		
	5th Scenario		% Funding Available		

Table 2.6.2 Composition of Well Sources and Specific Capacity

Name of Municipality	Type	Type Water Source	Proportion (%)	Standard Specification		
				Depth (m)	SWL (m)	Specific Capacity (liter/sec/m)
	Urban	Shallow Well				
		Deep Well				
		Spring				
	Rural	Shallow Well				
		Deep Well				
		Spring				
	Urban	Shallow Well				
		Deep Well				
		Spring				
	Rural	Shallow Well				
		Deep Well				
		Spring				
	Urban	Shallow Well				
		Deep Well				
		Spring				
	Rural	Shallow Well				
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	Urban	Shallow Well				
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		Spring				
	Rural	Shallow Well				
		Deep Well				
		Spring				
	Urban	Shallow Well				
		Deep Well				
		Spring				
	Rural	Shallow Well				
		Deep Well				
		Spring				

Sub-Sector	Component	1999	2000	2001	2002	2003	Total
Urban Water Supply	Level III System						
	Feasibility Study and Detail Design						
	Construction & Supervision Community Development & Training						
Rural Water Supply	Level I Facility						
	Detail Design						
	Construction & Supervision						
	Community Development & Training						
	Level II System						
	Detail Design Construction & Supervision Community Development & Training						
Sanitation	Urban Household Toilet						
	Rural Household Toilet						
	Public School Toilet						
	Public Toilet						
	Disinfection of Level I Wells						
	Detail Design Construction & Supervision Community Development & Training						

Table 2.6.4 Level I Safe & Unsafe Percentage

Name of Municipality	Safe (%)	Unsafe (%)
Provincial Total		

Table 2.6.5 Unit Construction Cost of Different Facilities

Description	Unit Construction Cost (Pesos)	Service Coverage		Unit Cost	
		Served Population	Served Household	Pesos/ Person	Pesos/ Household
Water Supply					
<i>Level III - New System</i>					
For 5000 Population					
For 10000 Population					
For 15000 Population					
<i>Level III - Expansion</i>					
For 5000 Population					
For 10000 Population					
For 15000 Population					
<i>Level II</i>					
<i>Level I</i>					
Deep Well - 40 meter depth					
Deep Well - 80 meter depth					
Deep Well - 120 meter depth					
Shallow Well - 18 meter depth					
Spring Development					
<i>Rehabilitation Cost for Level I Deep Well</i>					
<i>Disinfection of Level I Wells</i>					
Sanitation					
Flush					
Pour Flush					
VIP / Dry					
School Toilet					
Public Toilet					
Urban Sewerage					

Table 2.6.6 Scoring Factor for Municipal Investment Ranking for Urban Water Supply

Score	Underserved and Underserved Population in Base Year	Underserved and Underserved Population in Phase I	Population Underserved by Level III Systems in Base Year
1.0	< %	< %	< %
0.8	< % < 40	< % <	< % <
0.6	< % < 30	< % <	< % <
0.4	< % < 20	< % <	< % <
0.2	% < 10	% <	% <
Weight Allocation Score (%)			

Table 2.6.7 Scoring Factor for Municipal Comprehensive Investment Ranking

Score	Urban Water Supply	Rural Water Supply	Urban Sanitation	Rural Sanitation
1.0	N.A.	< %	< %	< %
0.8	N.A.	< % <	< % <	< % <
0.6	N.A.	< % <	< % <	< % <
0.4	N.A.	< % <	< % <	< % <
0.2	N.A.	% <	% <	% <
Weight Allocation Score (%)				

3. PROVINCIAL PROFILE

3.3 Socio-economic Conditions

3.3.1 Economic Activities and Family Income

Table 3.3.1 Distribution of Families by Income Class

Income Class	Samar				Region VIII	
	Total Families		Annual Income		Total Number of Families	Annual Income Average (Pesos)
	Number	Share	Total (P '000.00)	Average (Pesos)		
Under 15,000	12,719	12	184,338	14,493	87,207	13,748
15,000 - 19,999	12,924	12	293,475	22,708	85,948	22,862
20,000 - 29,999	27,645	26	879,161	31,801	180,372	30,065
30,000 - 39,999	22,402	21	960,559	42,878	137,133	42,930
40,000 - 59,999	18,140	17	1,113,203	61,366	120,101	62,345
60,000 - 99,999	10,677	10	1,184,265	110,913	58,068	112,836
100,000 - 249,999	1,410	1	242,865	172,294	23,431	232,048
250,000 and over		0			1,418	473,960

Source: 1994 Family Income and Expenditures Survey by NSO

Notes:

- (1) Derived from Region VIII FIES.
- (2) Based on NEDA and other agencies, poverty threshold in Region VIII was estimated at P-37,053 (P 6,444 annual per capita poverty threshold).
- (3) For purposes of the survey, a family is defined as a group of persons usually living together and composed of the head and other persons related by blood, marriage and adoption. A single person living alone is considered as a separate family. A household is composed of 1 or more families in the same housing unit and has a common arrangement of food preparation and consumption.

Table 3.3.2 Employment by Major Industry Group and Class of Worker, 1995

Major Industry Group	Household Population 15 years and Over Who Worked	Class of Worker							
		Worked for Private Household (Domestic Services)	Worked for Private Business/ Enterprise/ Farm	Worked for Government/ Corporation	Self-employed Without Any Paid Employee	Employer In Own Farm or Business	Work With Pay In Own Family Operated Farm or Business	Work Without Pay in Own Family Operated Farm or Business	Not Reported
Agriculture, Hunting and Forestry	121,683	122	9,297	97	59,198	2,142	389	50,292	146
Fishing	31,895	57	4,647	13	20,843	313	96	5,891	35
Mining and Quarrying	173	1	107	2	47	0	0	14	2
Manufacturing	6,656	60	1,395	23	4,122	138	13	889	16
Electricity, Gas and Water	355	8	247	30	66	1	0	2	1
Construction	4,866	113	3,959	77	660	23	3	26	5
Trade	18,788	55	1,762	17	12,381	500	73	3,951	49
Services	36,671	6,388	6,484	18,317	4,767	242	26	381	66
Not Stated	267	7	88	11	41	1	0	37	82
Provincial Total	221,354	6,811	27,986	18,587	102,125	3,360	600	61,483	402

Source: 1995 NSO Socioeconomic and Demographic Characteristics

3.3.3 Education

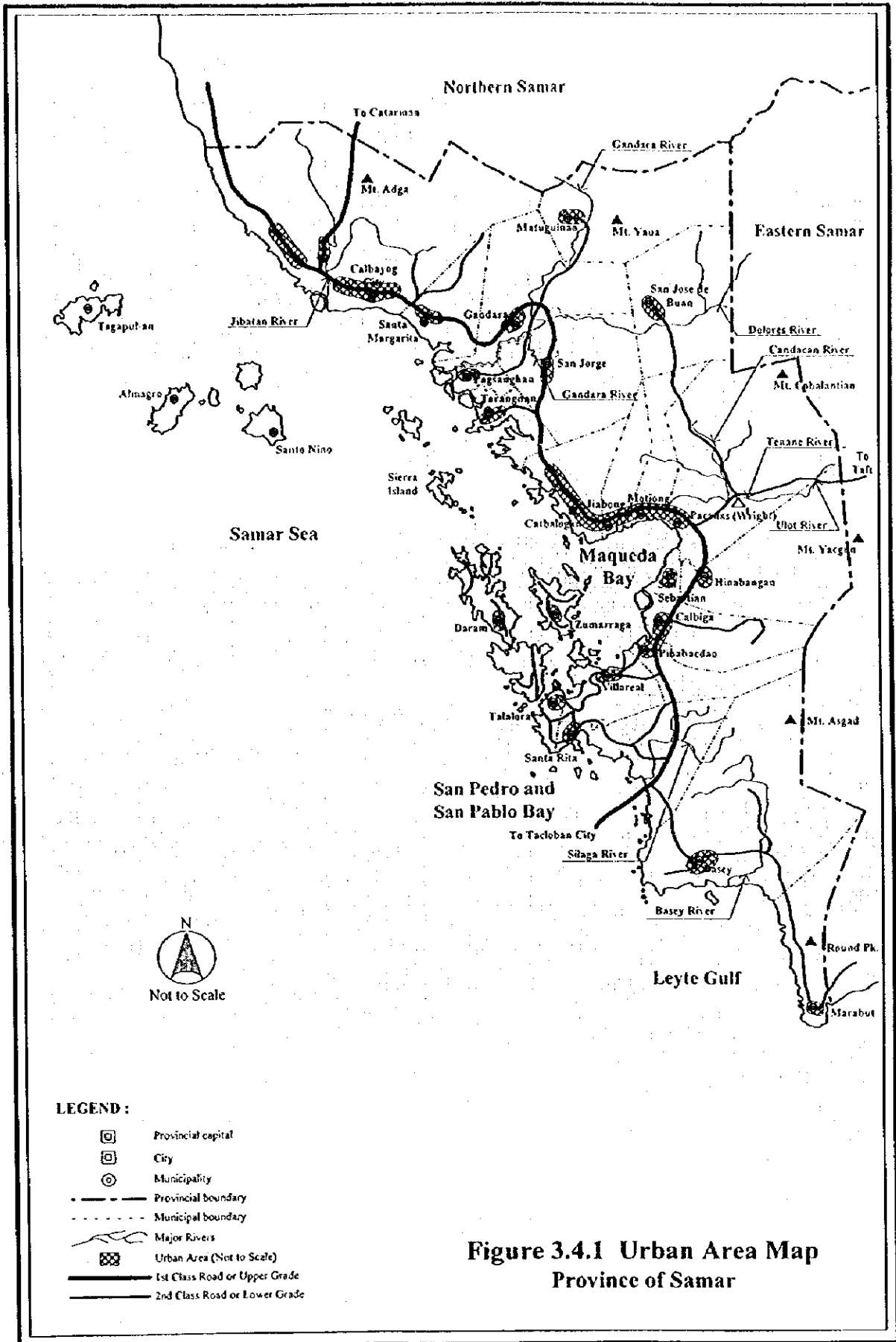
Table 3.3.3 Household Population by Highest Educational Attainment

Highest Educational Attainment	Household Population 5 years Old and Over	Age Group				
		Below 20	20 - 24	25 - 29	30 - 34	35 and Over
No Grade Completed	51,950	33,606	1,668	1,746	1,288	13,642
Pre-school	18,374	17,087	140	154	118	875
Elementary						
1st - 4th Grade	168,554	84,143	10,804	13,046	8,714	51,847
5th - 7th Grade	121,385	40,992	12,175	7,295	10,609	50,314
High School						
Undergraduate	59,415	28,738	7,730	6,025	4,272	12,650
Graduate	24,401	4,338	4,834	4,121	3,280	7,828
Post Secondary						
Undergraduate	486	121	142	70	54	99
Graduate	1,912	161	554	401	314	482
College Undergraduate	20,789	4,825	5,576	3,041	2,351	4,996
Academic Degree Holder	19,556	144	2,845	3,686	3,332	9,549
Post-Baccalaureate	993		39	89	122	743
Not Stated	5,267	3,752	297	207	178	833
Total	493,082	217,907	46,804	39,881	34,632	153,858

Source: 1995 NSO Socioeconomic and Demographic Characteristics

3.4 Population

3.4.1 Classification of Urban and Rural Area



**Figure 3.4.1 Urban Area Map
Province of Samar**

3.5 Health Status

Table 3.5.1 Number and Ratio of Population to Health Facilities and/or Medical Practitioners

Health Facilities and Practitioners	Samar		Philippines	
	Number	Ratio	Number	Ratio
Health Facilities				
Hospital	9	1/67,509	1,700	1/40,206
Rural Health Units	26	1/23,369	2,335	1/29,272
Barangay Health Station	116	1/5,238	11,646	1/5,869
Practitioners				
Doctors	19	1/31,978	6,913	1/9,887
Nurses	39	1/15,579	8,849	1/7,724
Midwives	119	1/5,106	10,831	1/6,311
Dentists	15	1/40,506	1,895	1/36,068
Others Medical Practitioner				

Source: PSPT and 1997 Philippine Statistical Yearbook.

3.6 Environmental Conditions

3.6.2 Water Pollution

Table 3.6.1 DENR Water Quality Criteria/Water Usage and Classification for Fresh Water

Parameter	Unit	Class AA	Class A	Class B	Class C	Class D
Color	PCU	15	50	(C)	(C)	(C)
Temperature (max. rise in deg. Celsius)	°C rise	--	3	3	3	3
pH (range)		6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.0-9.0
Dissolve Oxygen (Minimum)	%satn	70	70	70	60	40
5-Day 20°C BOD	mg/L	5.0	5.0	5.0	5.0	3.0
Total Suspended Solids	mg/L	1	5	5	7(10)	10(15)
Total Dissolved Solids	mg/L	25	50	--	--	1,000
Surfactants (MBAS)	mg/L	500	1,000	--	--	1,000
Oil/Grease	mg/L	nil	0.2(0.5)	0.3(0.5)	0.5	--
Nitrate as Nitrogen	mg/L	nil	1	1	2	5
Phosphate as Phosphorous	mg/L	1	10	NR	10	--
Phenolic Substances	mg/L	nil	0.1	0.2	0.4	--
Total Coliforms or Fecal Coliforms	MPN/100mL	nil	0.002	0.005	0.02	--
Chloride as Cl	MPN/100mL	50	1,000	1,000	5,000	--
Copper	mg/l	20	100	200	--	--
	mg/L	250	250	--	350	--
	mg/L	1	1	--	0.05	--

Notes:

Class AA - Public Water Supply Class I. Intended for waters having watersheds that are uninhabited and otherwise protected and which require only approved disinfection in order to meet the national standards for drinking water.

Class A - Public Water Supply Class II. Sources of water supply that will require complete treatment (coagulation, sedimentation, filtration and disinfection) in order to meet drinking water standards.

Class B - Recreational Water Class I. For primary contact recreation such as bathing, swimming skin diving, etc. (particularly for tourism purposes).

Class C - Fishery Water for the propagation and growth of fish and other aquatic resources; recreational (for boating, etc.); industrial water supply class I for manufacturing processes after treatment.

Class D - For agriculture, irrigation, livestock watering, etc.; for industrial water supply class II (cooling, etc.); other inland waters by their quality, belong to this specification.

4. EXISTING FACILITIES AND SERVICE COVERAGE

4.1 Water Supply

4.1.3 Level III Systems

Table 4.1.1 Details on Existing Level III Systems

Sheet 1 of 4

Name of Municipality/City	Name of Operating Body	Level III Service								
		Number of Barangays Served			Number of Households Served			Number of Population Served		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Basey	Basey WD	6	8	14	1,391	873	2,264	3,957	6,767	10,724
Calbayog City	Calbayog City WD	15	15	30	7,512	2,476	9,988	39,358	12,588	51,946
Calbiga	Calbiga WD	8	6	14	692	1,077	1,769	3,567	5,384	8,951
Catbalogan	Catbalogan WD	16	1	17	6,294	484	6,778	32,979	2,588	35,567
Hinabangan	Hinabangan WWS	5		5	931		931	4,799		4,799
Jiabong	Jiabaong	8		8	644		644	3,634		3,634
Paranas (Wright)	Paranas WWS	6	3	9	508	70	578	2,540	370	2,910
Provincial Total		64	33	97	17,972	4,980	22,952	90,834	27,697	118,531

Table 4.1.1 Details on Existing Level III Systems

Sheet 2 of 4

Name of Municipality/City	Name of Operating Body	Level II Service								
		Number of Public Faucets			Number of Households Served			Number of Population Served		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Basey	Basey WD									
Calbayog City	Calbayog City WD									
Calbiga	Calbiga WD									
Catbalogan	Catbalogan WD									
Hinabangan	Hinabangan WWS									
Jiabong	Jiabaong									
Paranas (Wright)	Paranas WWS	41	80	121	204	402	606	1,067	1,931	2,998
Provincial Total		41	80	121	204	402	606	1,067	1,931	2,998

Table 4.1.1 Details on Existing Level III Systems

Sheet 3 of 4

Name of Municipality/City	Name of Operating Body	Water Sources			Consumption			
		Type ¹	Number	Production (cu.m/day)	Domestic	Institutional	Commercial	Industrial
		(cu.m/day)						
Basey	Basey WD	Surf	1	41				
Calbayog City	Calbayog City WD	Surf	3	3,230				
Calbiga	Calbiga WD	SP	1	1,505				
Catbalogan	Catbalogan WD	SP	1	864				
Hinabangan	Hinabangan WWS							
Jiabong	Jiabaong	SP	1	432				
Paranas (Wright)	Paranas WWS	SP	1	2,354				
Provincial Total			8	8,426				

Note: 1. Type of Water Source; DW - Deep Well, DgW - Dug Well, Surf - Surface Water (River), SP - Spring, and IG - Infiltration Gallery

Table 4.1.1 Details on Existing Level III Systems
Sheet 4 of 4

Name of Municipality/ City	Name of Operating Body	Consumers														
		Domestic House Connections			Domestic Public Faucets			Institutional Consumers			Commercial Consumers			Industrial Consumers		
		Connection		Con- sumption (m ³ /day)	Connection		Con- sumption (m ³ /day)	Connection		Con- sumption (m ³ /day)	Connection		Con- sumption (m ³ /day)	Connection		Con- sumption (m ³ /day)
Metered	Unme- tered		Metered	Unme- tered		Metered	Unme- tered		Metered	Unme- tered		Metered	Unme- tered			
Bacay	Bacay WD															
Calbayog City	Calbayog City	3,966														
Calbiga	Calbiga WD	587					3			14						
Catbalogan	Catbalogan WD	4,898														
Hinabagan	Hinabagan	931														
Jiabong	Jiabong															
Paranas	Paranas WWS															
Provincial Total		3,966														

4.1.4 Level II Systems

Table 4.1.2 Details on Existing Level II Systems
Sheet 1 of 6

Name of Municipality/City	Name of Operating Body	Water Source			Existing Facilities					
		Type	Number	Discharge (m ³ /day)	Length of Transmission Line (meter)	Reservoir		Length of Distribution Line (meter)	Number of Public Faucets	
						Number	Volume (m ³)			
Almagro	Costa Rica I and II	DW	1		20	1	20.0	1,000	5	
	Guin-ansan	SP	1	1,728.0	150	2	364.8	1,000	16	
	Imelda	SP	1	3,456.0	1,000	1	86.4	60	3	
	Lunang I	SP	1	1,728.0	800	1	153.6	1,000	11	
	Lunang II	SP	1	1,425.6	852	1	14.6	287	10	
	Mabuhay WS	SP	1	172.8	480	1	218.7	180	9	
	Pob. & Veloso	SP	1	86.4	250	2	44.0	1,138	17	
	San Jose	DW	1	174.0	60	2	1,228.8	192	11	
	Tonga-tonga	SP	1	172.8	1,752	1	76.8	85	3	
	Municipal Total	DW/SP	2/7	8,943.6	5,364	12	2,207.7	4,942	85	
	Basey	Amandaychan	SP							7
		Anglit	SP							5
		Burgos WS	SP							2
		Cambayan	SP							6
Can-abay		SP							4	
Loog		SP							2	
Mabini		SP							7	
Magallanes		SP							2	
May-it		SP							10	
Pelit		SP							2	
Calbayog City	San Antonio	SP							15	
	Serum	SP							2	
	Tnaogan	SP							6	
	Municipal Total	SP							70	
	Banti-an	SP							19	
	Baray	SP							8	
Calbayog City	Bayo	SP							9	
	Bugtong	SP							9	
	Cabaungan	SP							6	

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 1 of 6

Name of Municipality/City	Name of Operating Body	Water Source			Length of Transmission Line (meter)	Existing Facilities			
		Type	Number	Discharge (m ³ /day)		Reservoir Number	Volume (m ³)	Length of Distribution Line (meter)	Number of Public Faucets
Calbayog City	Cabatuan	SP						9	
	Cabugawan WS	SP						5	
	Caganahaw	SP						5	
	Cag-anubong	SP						4	
	Cagbayang	SP						3	
	Cagbilwang	SP						10	
	Caglanpao Sur	SP						10	
	Cagmanipis Norte	SP						20	
	Cagmanipis Sur	SP						4	
	Cagnipa	SP						10	
	Cag-olongo	SP						6	
	Cangomaod	SP						3	
	Carabunan	SP						8	
	Caybago	SP						3	
	Danao II	SP						6	
	Dawo	SP						9	
	Dinabongan	SP						2	
	Dinagan	SP						3	
	Hibabangan	SP					1	5.0	2
	Jose Roño	SP					1	1.0	2
	Liberrad	SP					1	8.0	4
	Longsob	SP							2
	Mabini II	SP							2
Malaga	SP							16	
Manquno-o	SP							8	
Mantaong	SP					2	12.0	2	
Manuel Barral	SP					1	8.0	6	
Mawacat	SP					1	6.0	14	

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 1 of 6

Name of Municipality/City	Name of Operating Body	Water Source			Existing Facilities				
		Type	Number	Discharge (m ³ /day)	Length of Transmission Line (meter)	Number	Reservoir Volume (m ³)	Length of Distribution Line (meter)	Number of Public Faucets
Calbayog City	Panloyahan	SP							4
	Panoytoy	SP							8
	Peña	SP							26
	Pilar	SP							22
	Quezon	SP							6
	Rizal II	SP				1	8.0		4
	Roxas II	SP				1	8.0		6
	San Joaquin	SP							30
	San Rufino	SP							3
	Sigo	SP							16
	Simidman Occidental	SP							4
	Simidman Oriental	SP				1	10.0		7
	Tarabucan	SP				1	5.0		5
	Tinambacan WS	SP							20
	Municipal Total	SP				11	71.0		390
Carbalogon (Capital)	Bangon	SP							2
	Buluan	SP							2
	Bunuanay	SP							3
	Cabugawan	SP							5
	Cagusipan	SP	1		66.5			1,000	1,500
	Cagutian	SP							2
	Cawayan	SP							3
	Cinco	SP							9
	Lobo	SP							2
	Poblacion 10	SP							2
	Poblacion 11	SP							4
	Poblacion 12	SP							2
	Poblacion 13	SP							3

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 1 of 6

Name of Municipality/City	Name of Operating Body	Water Source			Existing Facilities					
		Type	Number	Discharge (m ³ /day)	Length of Transmission Line (meter)	Reservoir		Length of Distribution Line (meter)	Number of Public Faucets	
						Volume (m ³)	Number			
Catalogan (Capital)	Socorro	SP							3	
	Totongon	SP							2	
	Municipal Total	SP	1	66.5	1,000	1	3.0	1,500	54	
	Daram	Baclayan	SP							10
		Bagacay	SP							10
		Betaug	SP							7
		Birawan	SP							8
		Buenavista	SP							9
		Burgos	SP							8
		Cabac	SP							7
Campelipa		SP							8	
Candugue		SP							4	
Mabini		SP							6	
Gandara	Macalpe	SP							6	
	Mayabay	SP							3	
	Poblacion 1	SP							10	
	Poblacion 2	SP							10	
	Poblacion 3	SP							5	
	Real	SP							7	
	San Vicente	SP							8	
	Saugan	SP							5	
	Ubo	SP							8	
	Municipal Total	SP							144	
Jiabong	Dumale-Ong	DW	1	12.0		1	3.0		8	
	Camarubo-an	SP	1	432.0	2,500	1	8.0	360	6	
	Cantongtong	SP	1	259.2	500	1	8.0	230	4	
	Casapa	SP	1	432.0	3,000	1	8.0	300	3	
	Catalina	SP	1	432.0	1,308			180	3	

Table 4.1.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 1 of 6

Name of Municipality/City	Name of Operating Body	Water Source			Existing Facilities					
		Type	Number	Discharge (m ³ /day)	Length of Transmission Line (meter)	Reservoir		Length of Distribution Line (meter)	Number of Public Faucets	
						Volume (m ³)	Number			
Jiabong	Hinaga	SP	1	432	500	1	8	25	2	
	Jia-An	SP	1	259.2	580	1	8.0	270	6	
	Jidapao	SP	1	259.2	15	1	8.0	300	3	
	Lulugayan	SP	1	259.2	500	1	8.0	270	4	
	Malino	SP	1	172.8	500	1	8.0	75	4	
	Nagbac	SP	1	259.2	720	1	8.0	20	2	
	Parina	SP	1	259.2	600	1	8.0	100	4	
	San Andres	SP	1	259.2	1,000			120	3	
	San Fernando	SP	1	432.0	1,250	1	8.0	240	5	
	Victory	SP	1	259.2	780				2	
	Municipal Total			4,418.4	13,753	12	91.0	2,490	59	
	Marabut	Bimukyahan	SP							4
		Canyoyo	SP							2
		Catato Poblacion	SP							2
		Ferreras WS	SP							3
Legaspi WS		SP							3	
Logero WS		SP							3	
Mabuhay WS		SP							4	
Malobago		SP							5	
Odoc		SP							2	
Osmena		SP							4	
Panan-awan		SP							4	
Pinalanga		SP							2	
Pinamintuan		SP							3	
Roño		SP							3	
Santa Rita		SP							2	
Sto. Niño	SP							2		

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 1 of 6

Name of Municipality/City	Name of Operating Body	Water Source			Existing Facilities					
		Type	Number	Discharge (m ³ /day)	Length of Transmission Line (meter)	Reservoir			Length of Distribution Line (meter)	Number of Public Faucets
						Number	Volume (m ³)			
Marabut	Tagalog	SP								3
	Tinabanan	SP								2
	Veloso	SP								3
Mataguinao	Municipal Total	SP								65
	Barruz	SP	1	305.3	2,200	1	24.0	550	7	
	Mabuligon	SP			1,500	2	82.0	800	15	
	Municipal Total	SP	1	305.3	3,700	3	106.0	1,150	22	
	Calapi	SP	1	39.0	3,500	1	50.0		36	
Motonog	Poblacion 1 & 1-A	SP			2,000	1	15.0	2,000	16	
	Municipal Total	SP	1	39.0	5,500	2	65.0	2,000	52	
	Apolonia	SP	1	864.0	300	1	45.0	200	5	
Paranas (Wright)	Bato	SP	1	2,354.0	4,000			200	7	
	Buray	SP	1	2,354.0	6,000			400	31	
	Jose Rono	SP			8,000	1	4.1	150	2	
	Lipata	SP			400	1	4.5	150	4	
	Lokilokon	SP	1	1,728.0	3,154			120	4	
	Maylobe	SP							2	
	Pabanog	SP						150	8	
	Paco	SP						200	2	
	Pagsa-ogan	SP						4.0	2	
	San Isidro	SP						4.5	3	
	Tenani	SP						100	2	
	Tigbawon	SP						200	4	
San Jorge	Tula	SP			3,500			200	4	
	Municipal Total	SP	4	7,300.0	1,000				2	
	San Jorge (Coop.)	SP	1	1,300.0	34,854	5	62.1	1,920	80	
	Poblacion 1-4	SP	1	144.3	13,368	1	294.0	4,357	61	
		SP	1		2,100	1	20.0	2,430	20	

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 1 of 6

Name of Municipality/City	Name of Operating Body	Water Source			Existing Facilities					
		Type	Number	Discharge (m ³ /day)	Length of Transmission Line (meter)	Reservoir		Length of Distribution Line (meter)	Number of Public Faucets	
						Number	Volume (m ³)			
Santa Rita	Aslum BWS	SP	1	86.4	50	1	8.0	2,150	2	
	Cabunga-an BWS	SP	1	86.4	750	1	4.5	150	3	
	Caticugan BWS	SP	1	86.4	250	1	8.0	300	2	
	Igang-igang BWS	SP	1	172.8	850	1	8.0	250	5	
	Lupig BWS	SP	1	86.4	800	1	8.0		2	
	Maligaya BWS	SP	1	129.6	500	1	12.5	150	2	
	Mun. Water Sys.	DW	1		100			1,500	28	
	Old Manunca BWS	SP	1	129.6	1,100	1	8.0	300	4	
	San Pascual BWS	SP	1	129.6	750	1	8.0	2,150	2	
	San Pedro BWS	SP	1	86.4	750	1	8.0	100	3	
	Santan BWS	SP	1	86.4	10	1	8.0	1,000	5	
	Tagacay BWS	SP	1	172.8	1,500	1	8.0	500	3	
	Tominamos BWS	SP	1	86.4	650	1	4.5		2	
	Municipal Total	DW/SP	1/12	1,339.2	8,060	12	93.5	8,550	63	
	Santo Niño	Balatguth WSA	SP	1	286.8	1,380			430	3
		Basud WSA	SP	1	1,753.3	1,500			750	7
		Buena Vista WSA	SP	1	622.1	2,100			850	6
Cabunga-an WSA		SP	1	362.9	2,950			900	4	
Corocawayan WSA		SP	1	1,400.0	1,530			610	3	
Ilijan WSA		SP	1	1,413.1	2,100			600	4	
Ilo WSA		SP	1	1,786.0	2,500			1,500	7	
Pinanangan WSA		SW/SP	2	110.6	1,800			450	2	
Sevilla WSA		SP	1	248.0	1,500			581	2	
Takut WSA		SP	1	387.1	1,800			500	8	
Villahermosa WSA		SP	1	25.8	1,950			670	5	
Municipal Total	DW/SP/SW	2/1/12	8,395.7	21,110			7,841	51		
Taalora	Independencia BWS	SP				1	8.0		3	
	Malaguining BWSA	SP				1	2.0		2	

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 1 of 6

Name of Municipality/City	Name of Operating Body	Water Source			Existing Facilities					
		Type	Number	Discharge (m ³ /day)	Length of Transmission Line (meter)	Reservoir		Length of Distribution Line (meter)	Number of Public Faucets	
						Number	Volume (m ³)			
Taalora	Mallorga BWSA	SP							2	
	Placer BWSA	SP							2	
	Poblacion 1 BWSA	SP							3	
	Tatabunan BWSA	SP							4	
	Municipal Total	SP							16	
	Balocawe WS	SP	1	146.9	300			27.0	50	2
	Baguiv WS	SP	1	172.8	400			27.0	210	6
Tagapul-an	Luna WS	SP	1	129.6	60			27.0	120	6
	Mataluto WS	SP	1	129.6	350			27.0	130	6
	Nipa WS	SP	1	103.7	210			27.0	160	3
	Municipal Total	SP	5	682.6	1,320			135.0	670	23
	Baras BWSA	SP	1	1.0	560			8.0	755	5
	Bisitahan BWSA	SP	1	2.0	576			7.0		2
	Cabunga-an BWSA	SP	1	2.4	950			8.0	250	2
Tarangnan	Libucan Dacu BWS	SP	1	2.9	1,895			24.0		3
	Majacob BWSA	SP	1	2.5	1,250			16.0	900	2
	San Vicente BWSA	SP	1	1.9	900			8.0		2
	Sugod BWSA	SP	1	4.8	798			5.0		2
	Municipal Total	SP	7	17.5	6,929			76.0	1,905	18
	Banquil	SP	1	5.8	400			6.0	100	2
	Cambaguio	SP	1	1.4	600			4.0	100	2
Villareal	Malonoy	SP	1	28.5	1,500			3.0	200	3
	San Roque	SP	1	57.9	1,200			4.5	150	2
	Tayud/Central/Villa	DW	1	189.0	120				500	4
	Villarosa	SP	1	34.7	1,800				100	2
	Municipal Total	DW/SP	1/5	317.3	5,620			17.5	1,150	15
	Provincial Total		76	33,269.4	122,678			3,259.8	40,905	1,288

Note: 1. Type of Water Source: DW - Deep Well, DgW - Dug Well, Surf - Surface Water (River), SP - Spring, and IG - Infiltration Gallery

Table 4.1.2 Details on Existing Level II Systems
Sheet 2 of 6

Name of Municipality/City	Name of Operating Body	Number of Barangay Served			Number of Households Served			Number of Population Served			
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	
Almagro	Costa Rica I and II		2	2		25	25		126	126	
	Guin-ansan		1	1		80	80		402	402	
	Imelda		1	1		15	15		75	75	
	Lunang I		1	1		55	55		276	276	
	Lunang II		1	1		50	50		251	251	
	Mabuhay WS		1	1		45	45		226	226	
	Pop. & Veloso	1	1	2	45	40	85	222	201	423	
	San Jose		1	1		55	55		276	276	
	Tonga-tonga		1	1		15	15		75	75	
	Municipal Total	1	10	11	45	380	425	222	1,908	2,130	
	Basey	Amandayehan	1		1	35		172		118	118
		Anglit		1	1		25	25		47	47
		Burgos WS		1	1		10	10		141	141
Cambayan			1	1		30	30		94	94	
Can-abay			1	1		20	20		49	49	
Loog		1		1	10		10	49		165	
Mabini			1	1		35	35		47	47	
Magallanes			1	1		10	10		236	236	
May-it			1	1		50	50		47	47	
Pelit			1	1		10	10		368	368	
San Antonio		1		1	75		75	368		47	
Serum			1	1		10	10		141	141	
Tinaogan			1	1		30	30		589	1,672	
Municipal Total	3	10	13	120	230	350	589	1,083	1,672		

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 2 of 6

Name of Municipality/City	Name of Operating Body	Number of Barangay Served			Number of Households Served			Number of Population Served		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Calbayog City	Banti-an		1	1		95	95		467	467
	Baray		2	2		40	40		197	197
	Bayo		1	1		45	45		221	221
	Bugtong		1	1		45	45		221	221
	Cabacungan		1	1		30	30		148	148
	Cabatuan		1	1		45	45		221	221
	Cabugawan WS		1	1		25	25		123	123
	Caganahaw		1	1		25	25		123	123
	Cag-ambong		1	1		20	20		98	98
	Cagbayang		1	1		15	15		74	74
	Cagbilwang		1	1		50	50		246	246
	Caglanipao Sur		1	1		50	50		246	246
	Cagmanipis Norte		1	1		100	100		492	492
	Cagmanipis Sur		1	1		20	20		98	98
	Cagnipa		1	1		50	50		246	246
	Cag-olongo		1	1		30	30		148	148
	Cangomaod		1	1		15	15		74	74
	Catabunan		1	1		40	40		197	197
	Caybago		1	1		15	15		74	74
	Danao II		1	1		30	30		148	148
	Dawo		1	1		45	45		221	221
	Dimabongan		1	1		10	10		49	49
	Dinagan		1	1		15	15		74	74
Hibangan		1	1		10	10		49	49	
Jose Roño		1	1		10	10		49	49	

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 2 of 6

Municipality/City	Name of Operating Body	Number of Barangay Served			Number of Households Served			Number of Population Served		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Calbayog City	Libertad		1	1		10	10		49	49
	Longsob		1	1		20	20		98	98
	Mabini II		1	1		10	10		49	49
	Malaga	1		1	80		80	413		413
	Manquino-o		1	1		40	40		197	197
	Mantaong		1	1		10	10		49	49
	Manuel Barral		1	1		30	30		148	148
	Mawatat		1	1		70	70		344	344
	Panloyahan		1	1		20	20		98	98
	Panoypoy		1	1		40	40		197	197
	Pefia	1		1	130		130	671		671
	Pilar		1	1		110	110		541	541
	Quezon		1	1		30	30		148	148
	Rizal II		1	1		20	20		98	98
	Roxas II		1	1		30	30		148	148
	San Joaquin	1	1	2		75	150	387	369	756
	San Rufino		1	1		15	15		74	74
	Sigo		1	1		80	80		394	394
	Simidman Occidental		1	1		20	20		98	98
	Simidman Oriental		1	1		35	35		172	172
Tarabucan		1	1		25	25		123	123	
Tinambacan WS	2	4	6		50	100	258	246	504	
Municipal Total	5	49	54	335	1,615	1,950	1,729	7,944	9,673	
Catbalogan (Capital)	Bangon		1	1		10	10		52	52
	Buluan		1	1		10	10		52	52

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 2 of 6

Name of Municipality/City	Name of Operating Body	Number of Barangay Served			Number of Households Served			Number of Population Served			
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	
Cabalogan (Capital)	Bunuanay		1	1		15	15		77	77	
	Cabugawan		1	1		25	25		129	129	
	Cagusipan		1	1		50	50		258	258	
	Cagutian		1	1		10	10		52	52	
	Cawayan		1	1		15	15		77	77	
	Cinco		1	1		45	45		232	232	
	Lobo		1	1		10	10		52	52	
	Poblacion 10	1		1		10	10		52	52	
	Poblacion 11	1		1		20	20		105	105	
	Poblacion 12	1		1		10	10		52	52	
	Poblacion 13	1		1		15	15		78	78	
	Socorro	1		1		15	15		78	78	
	Totoringon		1	1			10	10		52	52
	Municipal Total	5	10	15	15	70	200	270	365	1,033	1,398
Daram	Bacjayan		1	1		50	50		263	263	
	Bagacay	1		1		50	50		281	281	
	Betaug		1	1		35	35		184	184	
	Birawan	1		1		40	40		225	225	
	Buenavista		1	1		45	45		237	237	
	Burgos		1	1		40	40		210	210	
	Cabac		1	1		35	35		184	184	
	Campelipa		1	1		40	40		210	210	
	Candugue		1	1		20	20		105	105	
	Mabini		1	1		30	30		158	158	
Macalpe		1	1		30	30		158	158		

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)

Sheet 2 of 6

Municipality/City	Name of Operating Body	Number of Barangay Served			Number of Households Served			Number of Population Served		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Daram	Mayabay		1	1		40	40		210	210
	Poblacion 1	1		1	50		50	281		281
	Poblacion 2	1		1	50		50	281		281
	Poblacion 3	1		1	25		25	141		141
	Real		1	1		35	35		184	184
	San Vicente		1	1		40	40		210	210
	Saugan		1	1		25	25		132	132
	Ubo	1		1	40		40	225		225
	Municipal Total	6	13	19	255	465	720	1,434	2,445	3,879
	Dumalo-Ong	4		4	40		40	210		210
Gandara Jiabong	Camarubo-an		1	1		40	40		214	214
	Cantongtong		1	1		30	30		161	161
	Casapa		1	1		20	20		107	107
	Catalina		1	1		15	15		80	80
	Hinaga		1	1		15	15		80	80
	Jia-An		1	1		10	10		54	54
	Jidanao		1	1		30	30		161	161
	Lulugayan		1	1		15	15		80	80
	Malino		1	1		20	20		107	107
	Nagbac		1	1		20	20		107	107
	Parina		1	1		10	10		54	54
	San Andres		1	1		20	20		107	107
	San Fernando		1	1		15	15		80	80
	Victory		1	1		25	25		134	134
Municipal Total		14	14		285	285		1,526	1,526	

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)

Sheet 2 of 6

Name of Municipality/City	Name of Operating Body	Number of Barangay Served			Number of Households Served			Number of Population Served		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Marabut	Binukyahan		1	1		20	20		102	102
	Canyoyo		1	1		10	10		51	51
	Catato Poblacion	1		1	10		10	49		49
	Ferreras WS		1	1		15	15		77	77
	Legaspi WS		1	1		25	25		128	128
	Logero WS		1	1		25	25		128	128
	Mabuhay WS		1	1		20	20		102	102
	Malobago		1	1		25	25		128	128
	Odoc		1	1		10	10		51	51
	Osmeña		1	1		20	20		102	102
	Panar-awan		1	1		20	20		102	102
	Pinalanga		1	1		10	10		51	51
	Pinamintinan	1		1	15		15	73		73
	Roño		1	1		15	15		77	77
	Santa Rita		1	1		10	10		51	51
	Sto. Niño	1		1	10		10	49		49
	Tagalag		1	1		40	40		204	204
Tnabanan		1	1		10	10		51	51	
Veloso		1	1		15	15		77	77	
Municipal Total		3	16	19	35	290	325	171	1,482	1,653
Matuguinao	Barruz	1		1	35		35	194		194
	Mabuligon	2		2	75		75	416		416
	Municipal Total	3		3	110		110	610		610
Motiong	Calapi	2		2	180		180	972		972
	Poblacion 1 & 1-A	1		1	80		80	432		432
	Municipal Total	3		3	260		260	1,404		1,404

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)

Sheet 2 of 6

Name of Municipality/City	Name of Operating Body	Number of Barangay Served			Number of Households Served			Number of Population Served			
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	
Paranas (Wright)	Apolonia		1	1		25	25		25	25	
	Bato		1	1		35	35		35	35	
	Buray	1		1	155		155		155	155	
	Jose Roño		1	1		10	10		10	10	
	Lipata	1		1	20		20		20	20	
	Lolokon		1	1		20	20		20	20	
	Mayjobe		1	1		10	10		10	10	
	Pabanog	1		1	40		40		40	40	
	Paco		1	1		10	10		10	10	
	Pagsa-ogan		1	1		15	15		15	15	
	San Isidro		1	1		10	10		10	10	
	Tenani		1	1		20	20		20	20	
	Tigbawon		1	1		20	20		20	20	
	Tula		1	1		10	10		10	10	
	Municipal Total		3	11	14	215	185	400	215	185	400
	San Jorge (Coop.)		3	16	19	75	230	305	422	1,145	1,567
	San Jose de Buan		4		4	100		100	479		479
Santa Rita	Aslum BWS		1	1		10	10		51	51	
	Cabanga-an BWS		1	1		15	15		77	77	
	Caticugan BWS		1	1		10	10		51	51	
	Igang-igang BWS		1	1		25	25		129	129	
	Lupig BWS		1	1		10	10		51	51	
	Maligaya BWS	1		1	10		10	50		50	
	Mun. Water Sys.	5		5	140		140	696		696	
	Old Manunca BWS		1	1		20	20		105	105	
	San Pascual BWS		1	1		10	10		51	51	

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)

Sheet 2 of 6

Name of Municipality/City	Name of Operating Body	Number of Barangay Served			Number of Households Served			Number of Population Served		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Santa Rita	San Pedro BWS		1	1		15	15		77	77
	Santan BWS	1		1	25		25	124		124
	Tagacay BWS		1	1		15	15		77	77
	Tominamos BWS	1		1	10		10	50		50
	Municipal Total	8	9	17	185	130	315	920	667	1,587
	Balatguti WSA		1	1		15	15		74	74
	Basud WSA	2		2	35		35	166		166
	Buenvista WSA		1	1		30	30		149	149
	Cabunga-an WSA		1	1		20	20		99	99
	Corocawayan WSA		1	1		15	15		74	74
Santo Niño	Ilijan WSA		1	1		20	20		99	99
	Ilo WSA	1		1	35		35	166		166
	Pinanangan WSA		1	1		10	10		50	50
	Sevilla WSA		1	1		10	10		50	50
	Takut WSA		1	1		40	40		198	198
	Villahermosa WSA		1	1		25	25		124	124
	Municipal Total	3	9	12	70	185	255	332	917	1,249
	Independencia BWSA		1	1		15	15		81	81
	Malaguining BWSA		1	1		10	10		54	54
	Mallorga BWSA		1	1		10	10		54	54
Placer BWSA		1	1		10	10		54	54	
Taalora	Poblacion I BWSA	1		1	15		15	75		75
	Tatabunan BWSA		1	1		20	20		108	108
	Municipal Total	1	5	6	15	65	80	75	351	426

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 2 of 6

Name of Municipality/City	Name of Operating Body	Number of Barangay Served			Number of Households Served			Number of Population Served		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Tagapul-an	Balocawe WS		3	3		10	10		51	51
	Baquiw WS		2	2		30	30		153	153
	Luna WS		2	2		30	30		153	153
	Maraluto WS		2	2		30	30		153	153
	Nipa WS		1	1		15	15		77	77
	Municipal Total		10	10	10	115	115		587	587
Tarangnan	Baras BWSA		1	1		25	25		127	127
	Bisitahan BWSA		1	1		10	10		51	51
	Cabunga-an BWSA		1	1		10	10		51	51
	Libucan Dacu BWSA		1	1		15	15		76	76
	Majacob BWSA		1	1		10	10		51	51
	San Vicente BWSA		1	1		10	10		51	51
Villareal	Sugod BWSA		1	1		10	10		51	51
	Municipal Total		7	7		90	90		458	458
	Banquil		1	1		10	10		53	53
	Cambaguio		1	1		10	10		53	53
	Malonoy		1	1		15	15		79	79
	San Roque		1	1		10	10		53	53
Provincial Total	Tayud/Central/Villar	3		3	20		20	107		107
	Villarsa	1		1	10		10	53		53
	Municipal Total	4	4	8	30	45	75	160	238	398
Provincial Total		59	193	252	1,960	4,510	6,470	9,337	21,969	31,306

Table 4.1.2 Details on Existing Level II Systems
Sheet 3 of 6

Name of Municipality/City	Name of Operating Body	Supply (Hrs/day)	Dirty Water ¹	Taste or Smell ²	Service Conditions During Dry Season				Supply Water Pressure (% of total)		
					Power Failure	Pump Breakdown	Pipe Burst	Others	Adequate	Inadequate	
Almagro	Costa Rica I and II	1									
	Guin-ansan	24									
	Imelda	24									
	Lunang I	14									
	Lunang II	14									
	Mabuhay WS	15									
	Pob. & Veloso	1 hr/week									
	San Jose	1									
	Tonga-tonga	0.5									
	Amandayehan										
	Anglit										
	Burgos WS										
	Basey	Cambayan									
Can-abay											
Loog											
Mabini											
Magallanes											
May-it											
Pelit											
San Antonio											
Serum											
Tinaogan											
Calbayog City	Bani-an										
	Baray										
	Bayo										
	Bugtong										
	Cabacungan										

Table 4.1.2 Details on Existing Level II Systems (Cont'd).
Sheet 5 of 6

Name of Municipality/City	Name of Operating Body	Service Conditions During Dry Season							Supply Water Pressure (% of total)		
		Supply (Hrs/day)	Dirty Water ¹	Taste or Smell ²	Power Failure	Pump Breakdown	Pipe Burst	Others	Adequate	Inadequate	
Calbayog City	Cabatuan										
	Cabugawan WS										
	Caganahaw										
	Cag-anibong										
	Cagbayang										
	Cagbiwang										
	Caglanipao Sur										
	Cagmanipis Norte										
	Cagmanipis Sur										
	Cagnipa										
	Cag-olongo										
	Cangomaod										
	Catabunan										
	Caybago										
	Danao II										
	Dawo										
	Dinabongan										
	Dinagan										
	Hibabagan										
	Jose Roño										
	Libertad										
	Longsob										
	Mabini II										
	Malaga										
	Manquno-o										
	Mantamong										
	Manuel Barral										

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 3 of 6

Name of Municipality/City	Name of Operating Body	Supply (Hrs/day)	Dirty Water	Taste or Smell	Service Conditions During Dry Season				Supply Water Pressure (% of total)		
					Power Failure	Pump Breakdown	Pipe Burst	Others	Adequate	Inadequate	
Calbayog City	Mawacat										
	Parloyahan										
	Panoypoy										
	Pella										
	Pilar										
	Quezon										
	Rizal II										
	Roxas II										
	San Joaquin										
	San Rufino										
	Sigo										
	Sinidman Occidental										
	Sinidman Oriental										
	Tarabucan										
	Tinambacan WS										
	Catbalogan (Capital)	Bangon									
Buluan											
Bunuanay											
Cabugawan											
Cagusipan											
Cagutian											
Cawayan											
Cinco											
Lobo											
Poblacion 10											
Poblacion 11											
Poblacion 12											

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 3 of 6

Name of Municipality/City	Name of Operating Body	Supply (Hrs/day)	Dirty Water ¹	Taste or Smell ²	Service Conditions During Dry Season				Supply Water Pressure (% of total)		
					Power Failure	Pump Breakdown	Pipe Burst	Others	Adequate	Inadequate	
Catbalogan (Capital)	Poblacion 13										
	Socorro										
	Totoingon										
	Baclayan										
	Bagacay										
	Betaug										
	Birawan										
	Buнавista										
	Burgos										
	Cabac										
	Campelipa										
	Candugue										
	Mabini										
Macalpe											
Mayabay											
Poblacion 1											
Poblacion 2											
Poblacion 3											
Real											
San Vicente											
Saugan											
Ubo											
Gandara Jiabong	Dumalo-Ong	4									
	Camarubo-an	24									
	Cantongtong	24									
	Casapa	24									
	Catalina	24									

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 3 of 6

Name of Municipality/City	Name of Operating Body	Supply (Hrs/day)	Dirty Water ¹	Taste or Smell ²	Service Conditions During Dry Season				Supply Water Pressure (% of total)			
					Power Failure	Pump Breakdown	Pipe Burst	Others	Adequate	Inadequate		
Jiabong	Hinaga	24										
	Jia-An	24										
	Jidanao	24										
	Lulugayan	24										
	Malino	24										
	Nagbac	24										
	Parina	24										
	San Andres	24										
	San Fernando	24										
	Victory	24										
	Marabut	Binukyahan										
		Canyoyo										
		Catato Poblacion										
		Ferreras WS										
Legaspi WS												
Logero WS												
Mabuhay WS												
Malobago												
Odoc												
Osmenia												
Panan-awan												
Pinalanga												
Pinarmitinan												
Roño												
Santa Rita												
Sto. Niño												
Tagalag												

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 3 of 6

Name of Municipality/City	Name of Operating Body	Supply (Hrs/day)	Dirty Water ¹	Taste or Smell ²	Service Conditions During Dry Season				Supply Water Pressure (% of total)		
					Power Failure	Pump Breakdown	Pipe Burst	Others	Adequate	Inadequate	
Marabut	Tinabanan										
	Veloso										
Mataguinao	Barruz	24									
	Mabuligon	24									
Motiong	Calapi	4									
	Poblacion 1 & 1-A	24									
Paranas (Wright)	Apolonia	24									
	Bato	24									
	Buray	24									
	Jose Roño	24									
	Lipata	24									
	Lokilokon	24									
	Maylobe	24									
	Pabanog	24									
	Paco	24									
	Pagsa-ogan	24									
	San Isidro	24									
	Tenani	24									
Tigbawon	Tigbawon	24									
	Tula	24									
San Jorge	San Jorge (Coop.)	24									
San Jose de Buan	Poblacion 1-4	24									
	Aslum BWS	24									
Santa Rita	Cabunga-an BWS	24									
	Caucagan BWS	24									
	Igang-igang BWS	24									
	Lupig BWS	24									

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 3 of 6

Name of Municipality/City	Name of Operating Body	Supply (Hrs/day)	Dirty Water	Taste or Smell	Service Interruption (number/month)				Supply Water Pressure (% of total)		
					Power Failure	Pump Breakdown	Pipe Burst	Others	Adequate	Inadequate	
Santa Rita	Malgaya BWS	24									
	Mun. Water Sys.	1									
	Old Manunca BWS	24									
	San Pascual BWS	24									
	San Pedro BWS	24									
	Santian BWS	24									
	Tagacay BWS	24									
	Tomimanos BWS	24									
	Balaguti WSA	24									
	Basud WSA	24									
	Buonavista WSA										
	Cabunga-an WSA										
	Corocawayan WSA										
	Ilijan WSA										
Taalora	Ilo WSA	24									
	Pinanangan WSA	24									
	Sevilla WSA										
	Takut WSA	24									
	Villahermosa WSA										
	Independencia BWSA	24									
	Malaguning BWSA	24									
	Mallorga BWSA	24									
	Placer BWSA	24									
	Poblacion I BWSA	24									
Tagapul-an	Tarabunan BWSA	24									
	Balocawe WS	24									
	Baqiw WS	24									

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 3 of 6

Name of Municipality/City	Name of Operating Body	Supply (Hrs/day)	Dirty Water ¹	Taste or Smell ²	Service Conditions During Dry Season						Supply Water Pressure (% of total)		
					Supply Interruption (number/month)				Pipe Burst	Others	Adequate	Inadequate	
					Power Failure	Pump Breakdown							
Tagapul-an	Luna WS	24											
	Mataluto WS	24											
	Nipa WS	24											
	Baras BWSA	24											
	Bisitaban BWSA	16											
Tarangnan	Cabunga-an BWSA	15											
	Libucan Dacu BWSA	24											
	Majacob BWSA	16											
	San Vicente BWSA	24											
	Sugod BWSA	24											
Villareal	Banquil	8											
	Cambaguio	6											
	Malonoy	8											
	San Roque	24											
	Tayud/Central/Villarosa	8											
	Villarosa	12											

Note: 1. Dirty Water: E - Everyday, OW - Once a week, OM - Once a month, O - Occasional.
2. Taste or Smell: G - Good taste, S - Salty, W - Wood taste, M - Metallic taste, O - Others.