

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 into 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 to 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	Disadvantage
1. Minimum programming skills	1. Repeated entry of same formula
2. Friendly environment to users	2. Sorting or indexing is done manually
3. Graphics presentation of data at user's option.	3. All data are loaded in memory, which require huge amount of memory.
4. Execution of data linkages at formula level entry	4. Limited to static data linkages
5. Guided formula creation using function wizard	

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	<i>Water Supply</i>			
		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		
		<i>Sanitation</i>			
		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	<i>Water Supply</i>		
			Urban Water Supply	% of Population	
			Rural Water Supply	% of Population	
			<i>Sanitation</i>		
			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	<i>Water Supply</i>		
			Urban Water Supply	% of Population	
			Rural Water Supply	% of Population	
			<i>Sanitation</i>		
			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		
6.	Recurrent Cost	Level I, II and Public Toilet	% of Construction 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		
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					
		Deep Well					
		Spring					
		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					
		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						
Sanitation	Detail Design						
	Construction & Supervision Community Development & Training						
	Urban Household Toilet						
	Rural Household Toilet						
	Public School Toilet						
	Public Toilet						
	Disinfection of Level I Wells						

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 Unserved Population in Base Year	Underserved and Unserved Population in Phase I	Population Unserved 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	Aklan				Region VI	
	Total Number of Families		Annual Income		Total Number of Families	Annual Income Average (Pesos)
	Number	Share	Total (P '000.00)	Average (Pesos)		
Under 15,000	5,113	6	78,017	15,260	38,620	12,865
15,000 - 19,999	7,332	9	176,810	24,117	50,543	19,828
20,000 - 29,999	19,809	24	596,504	30,113	209,138	27,662
30,000 - 39,999	14,899	18	646,302	43,379	224,397	37,336
40,000 - 59,999	12,469	15	763,185	61,207	280,436	51,099
60,000 - 99,999	12,924	16	1,351,640	104,581	199,449	86,842
100,000 - 249,999	6,471	8	1,126,774	174,140	112,990	161,051
250,000 and over	2,227	3	978,345	439,271	17,827	399,169

Source: 1994 Family Income and Expenditures Survey by NSO

Notes:

- (1) Derived from Region VI FIES
- (2) Based on NEDA and other agencies, poverty threshold in Region VI was estimated at ₱ 47,133 (₱ 8,197 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, 1994

Major Industry Group	Household Population 15 years and Over Who Worked	Class of Worker							Not Reported
		Worked for Private Household (Domestic Services)	Worked for Private Business/ Enterprise/ Farm	Worked for Government/ 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	
Agriculture, Hunting and Forestry	91,689	138	16,742	110	17,412	23,262	523	33,419	83
Fishing	12,093	21	1,611	9	5,976	618	30	3,813	15
Mining and Quarrying	175	2	127	0	24	5	0	15	2
Manufacturing	12,950	87	3,096	14	7,470	684	47	1,526	26
Electricity, Gas and Water	699	7	537	99	45	4	2	4	1
Construction	8,519	150	7,778	23	484	43	0	23	18
Trade	16,934	31	3,074	10	9,153	1,443	58	3,151	14
Services	41,896	9,668	13,606	12,295	4,370	1,027	84	800	46
Not Stated	214	5	103	4	22	9	1	29	41
Provincial Total	185,169	10,109	46,674	12,564	44,956	27,095	745	42,780	246

Source: 1995 NSO Socioeconomic and Demographic Characteristics

3.3.3 Education

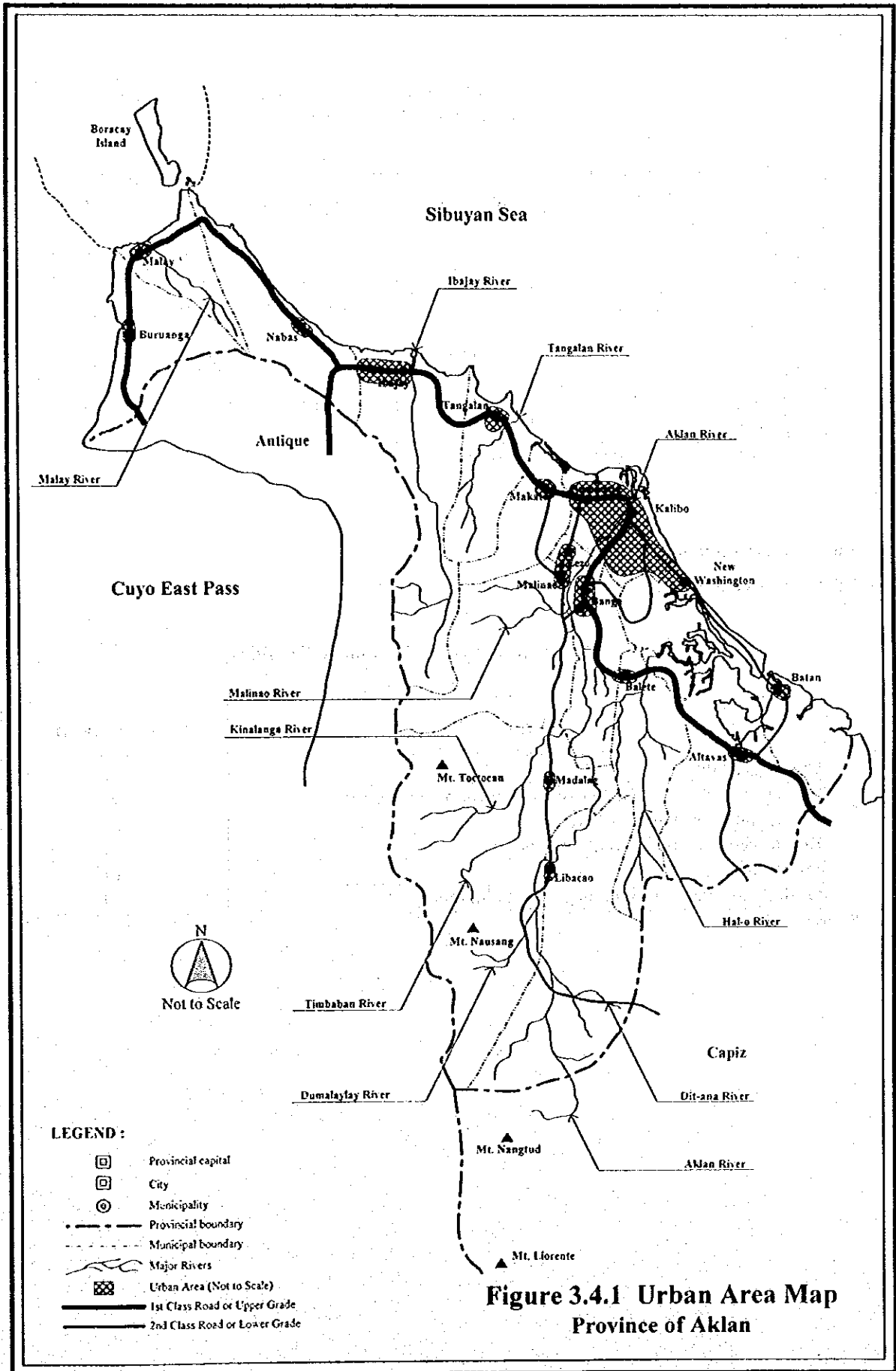
Table 3.3.3 Household Population by Highest Educational Attainment

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	24,406	15,622	657	637	554	6,936
Pre-school	13,555	12,952	33	39	43	488
Elementary						
1st - 4th Grade	88,609	50,073	2,720	2,676	2,729	30,411
5th - 7th Grade	73,457	23,117	4,319	4,914	4,995	36,112
High School						
Undergraduate	50,051	28,784	4,655	3,589	2,863	10,160
Graduate	41,761	7,697	7,434	6,836	5,467	14,327
Post Secondary						
Undergraduate	2,526	392	653	447	332	702
Graduate	10,613	675	2,915	2,394	1,659	2,970
College Undergraduate	17,966	5,584	4,298	2,169	1,806	4,109
Academic Degree Holder	26,908	275	4,356	4,798	4,564	12,915
Post-Baccalaureate	787	2	50	75	100	560
Not Stated	5,956	4,022	262	232	198	1,242
Total	356,595	149,195	32,352	28,806	25,310	120,932

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 Aklan**

3.5 Health Status

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

Health Facilities and Practitioners	Aklan		Philippines	
	Number	Ratio	Number	Ratio
Health Facilities				
Hospital	12	1/36,030	1,700	1/40,206
Rural Health Units	19	1/22,756	2,335	1/29,272
Barangay Health Station	108	1/4,003	11,646	1/5,869
Practitioners				
Doctors	114	1/3,793	6,913	1/9,887
Nurses	272	1/1,590	8,849	1/7,724
Midwives	226	1/1,913	10,831	1/6,311
Dentists	34	1/12,716	1,895	1/36,068

Source: PSPT and 1997 Philippine Statistical Yearbook.

3.6 Environmental Conditions

3.6.2 Water Pollution

Table 3.6.1 Types of Drainage Facilities

Type	Length (km)
Drainage Main	38
Open Channel (with Concrete & rubble masonry)	8
Open Ditches & Unlined Laterals	22
Reinforced Concrete Circular Pipes	24
Street Gutters	17
Outfalls to rivers from drainage mains (number)	14

Source: PSPT

Table 3.6.2 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
	mg/L	5.0	5.0	5.0	5.0	3.0
5-Day 20°C BOD	mg/L	1	5	5	7(10)	10(15)
Total Suspended Solids	mg/L	25	50			
Total Dissolved Solids	mg/L	500	1,000	--	--	1,000
Surfactants (MBAS)	mg/L	nil	0.2(0.5)	0.3(0.5)	0.5	--
Oil/Grease (Petroleum Ether Extract)	mg/L	nil	1	1	2	5
Nitrate as Nitrogen	mg/L	1	10	NR	10	--
Phosphate as Phosphorous	mg/L	nil	0.1	0.2	0.4	--
Phenolic Substances as Phenols	mg/L	nil	0.002	0.005	0.02	--
Total Coliforms	MPN/100mL	50	1,000	1,000	5,000	--
or Fecal Coliforms	MPN/100mL	20	100	200	--	--
Chloride as Cl	mg/l	250	250	--	350	--
Copper	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.

1. The first part of the document discusses the importance of maintaining accurate records.

2. It then outlines the various methods used to collect and analyze data.

3. The following section describes the results of the experiments conducted.

4. Finally, the document concludes with a summary of the findings and their implications.

5. The data shows a clear correlation between the variables studied.

6. These results are consistent with the theoretical model proposed.

7. The study also highlights the need for further research in this area.

8. The authors thank the funding agency for their support.

9. The work was carried out at the Department of Physics, University of X.

10. The authors are grateful to the anonymous reviewers for their comments.

11. The data is available upon request to interested parties.

12. The study was published in the Journal of Applied Physics.

13. The authors have no conflicts of interest to declare.

14. The work was supported by the National Science Foundation.

15. The authors would like to thank their colleagues for their assistance.

16. The data is presented in the following figures and tables.

17. The study was conducted over a period of six months.

18. The authors are confident in the accuracy of the results.

19. The work is a contribution to the field of physics.

20. The authors hope that their findings will be useful to others.

21. The data is available in the supplementary materials.

22. The study was approved by the ethics committee.

23. The authors are available for further inquiries.

24. The work was presented at the International Conference.

25. The authors are grateful to the organizers for their invitation.

26. The data is available in the public domain.

27. The study is a valuable resource for researchers.

28. The authors are proud of their work and its contribution.

29. The data is available in the open access repository.

30. The authors are looking forward to future collaborations.

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	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
Altavas	Altavas	1		1	35		35	200		200
Batan	Batan RWW	1	3	4	245	102	347	1,225	510	1,735
Ibajay	Ibajay WD		2	2		270	270		1,350	1,350
	MCRWSA		2	2		228	228		1,140	1,140
	Rizal WW		3	3		1,124	1,124		5,618	5,618
	Municipal Total		7	7		1,622	1,622		8,108	8,108
Kalibo (Capital)	Kalibo WD	30		30	5,865		5,865	30,205		30,205
Lezo	Numancia WD (a)	1	5	6	139	259	398	1,295	829	2,124
Libacao	Libacao WD		1	1		318	318		2,695	2,695
Madalag	Madalag WW Coop.	1		1	116		116	696		696
Makato	Numancia WD (b)	1	2	3	251	102	353	1,506	612	2,118
Malinao	Malinao WD	1	4	5	300	137	437	1,500	684	2,184
Numancia	CBCP		5	5		327	327		1,635	1,635
	Numancia WD (c)	1	10	11	130	791	921	780	4,746	5,526
	Municipal Total	1	15	16	130	1,118	1,248	780	6,381	7,161
Provincial Total		37	37	74	7,081	3,658	10,739	37,407	19,819	57,226

Table 4.1.1 Details on Existing Level III Systems

Sheet 2 of 4

Name of Municipality	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
Altavas	Altavas									
Batan	Batan RWW									
Ibajay	Ibajay WD									
	MCRWSA									
	Rizal WW		20	20		100	100		500	500
	Municipal Total		20	20		100	100		500	500
Kalibo (Capital)	Kalibo WD									
Lezo	Numancia WD (a)									
Libacao	Libacao WD									
Madalag	Madalag WW Coop.	4		4	20		20	100		100
Makato	Numancia WD (b)									
Malinao	Malinao WD									
Numancia	CBCP									
	Numancia WD (c)									
	Municipal Total									
Provincial Total		4	20	24	20	100	120	100	500	600

Table 4.1.1 Details on Existing Level III Systems

Sheet 3 of 4

Name of Municipality	Name of Operating Body	Water Sources			Consumption			
		Type ¹	Number	Production (cu.m/day)	Domestic	Institutional	Commercial	Industrial
					(cu.m/day)			
Altavas	Altavas	DW	1	n.a.				
Batan	Batan RWW	DW	1	48				
Ibajay	Ibajay WD	DW	1	216			2,322	
	MCRWSA	DW	1	72	60			
	Rizal WW	SP	1	960				
	Municipal Total	DW/SP	2/1	1,248	60		2,322	
Kalibo (Capital)	Kalibo WD	DW	3	7,670	4,196		750	
Lezo	Numancia WD (a)	DW	1	225	234	82	20	
Libacao	Libacao WD	DW	1	198	156			
Madalag	Madalag WW Coop.	DW/SP	1/2	518				
Makato	Numancia WD (b)	DW	1	720	170	7	1	
Malinao	Malinao WD	DW	1	216				
Numancia	CBCP	DW	1	463				
	Numancia WD (c)	DW	1	1,440	22	15	884	
	Municipal Total	DW	2	1,903	22	15	884	
Provincial Total			14	15,897	4,838	104	3,977	

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	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)		
Metered	Unme- tered		Metered	Unme- tered		Metered	Unme- tered		Metered	Unme- tered		Metered	Unme- tered		
Altavas	Altavas														
Batan	Batan RWW														
Ibajay	Ibajay WD	270							106		2,322.00				
	MCRWSA	210	14	60.00				1	3	0.43					
	Rizal WW		250			20			8						
	Municipal Total	480	264	60		20		1	11		106		2,322		
Kalibo	Kalibo WD	5,860		4,195.00	5		1	20		819		750.00			
Lezo	Numancia WD (a)	393		234.00			3		82.00	2		20.00			
Libacao	Libacao WD	318	2	156.40											
Madalag	Madalag WW	116			4										
Makato	Numancia WD (b)	340		170.00			8		6.50	5		1.20			
Malinao	Malinao WD	364													
Numancia	CBCP	327						3		1					
	Numancia WD (c)	921	1	22			14		15	28		884			
	Municipal Total	1,248	1	22.00			17		15.00	29		884.00			
Provincial Total		9,124	267	4,837	9	20	1	29	11	103.93	961		3,977.20		

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

Name of Municipality	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	
Altagas	Cabangila WS	SP	1	5.5	36	1	13.8	2,000	7
	Camon WS	SP	1	86.4	3,000	1	40.0	150	7
	Limayasan WW	SW	1	0.5	12	1	3.4	400	10
	Tibao WS	SP	1	388.8	3,000	2	23.0	2,785	20
	Tibiao SDA	SP	1	5.4	3,000	1	22.0	34	15
	Municipal Total	SP/SW	4/1	486.6	9,048	6	102.2	5,369	59
Balete	Aranas	DW	1	48.0		1	6.8	300	5
	Balete WD	SP	1	72.0	4,000	1	64.0	900	8
	Calizo	SP	1	54.0	1,200	2	40.0	100	5
	Municipal Total	DW/SP	1/2	174.0	5,200	4	110.8	1,300	18
Banga	Daguitan	SP	1	8.6	500	2		1,500	14
	Pagsanghan	DW	1		50	1	10.0	1,000	13
	Sibalew	SP	1	8.6	1,700	3	27.0	5,000	30
	Sigcay	SP	1	8.6	50	3	27.0	1,000	17
	Municipal Total	DW/SP	1/3	25.9	2,300	9	64.0	8,500	74
	Caiyang	SP	1	21.6	200	1	8.0	150	5
Batan	Magubabay	SP	1	43.2				1,500	4
	Municipal Total	SP	2	64.8	200	1	8.0	1,650	9
	Bagongbayan	SP	1	518.4	2,500	1	21.6		13
	Bel-is	SP	1	259.2	500	1	1.7		4
Buruanga	Habana	SP	1	518.4	3,500	1	8.6		15
	Lindero	SP	1	86.4	1,500	1	10.3		9
	Nazareth	SP	1	432.0	1,500	1	21.6		25
	Poblacion	SP	1	6,220.8	4,000	1	46.6		31
	Santander	SP	1	864.0	2,000	1	31.1		19
Municipal Total	SP	7	8,899.2	15,500	7	141.5		116	

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

Name of Municipality	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)		
Ibajay	Agbago SDS	SP	1	432.0	250	1	12.0	110	5
	Antipolo SDS	SP	1	345.6	1,500				11
	Mabusao SDS	SP	1	518.4	2,500	1	12.0	600	5
	Regador WWA	SP	1	302.4	354	1	12.0	15	7
	Municipal Total	SP	4	1,598.4	4,604	3	36.0	725	28
		SP	1	480.0	1,000	1	20.0		9
Libacao	Guadalupe BWSA	SP	1	489.6	3,000	1	14.0		25
	Libacao WD	DW	1	990.0	1,755	1	125.0	950	12
	Municipal Total	DW/SP	1/2	1,959.6	5,755	3	159.0	950	46
		SP	1	163.6		2	66.0	3,000	16
Madalag	Panigayan SDA	SP	1	163.6		1	13.8	790	8
	Municipal Total	SP	2	327.1		3	79.8	3,790	24
	Bag-ong Barrio	SP	1	1.4	150	1	3.0	25	13
	Castillo (DPWH)	SP	1	129.6	500	1	3.0	1,500	5
Makato	Castillo (JICA)	SP	1	216.0	400	1	16.0	4,500	51
	Castillo BWSA	SP	1	43.2	300	1	6.0	100	5
	Libang	SP	1	327.1	3,000	2	15.0	200	25
	Municipal Total	SP	5	717.4	4,350	6	43.0	6,325	99
	Argao WS	SP	1	432.0	2,000	2	80.0		25
	Cogon WS	SP	1	432.0	3,000	2	80.0		10
Malay	Dumlog and Naasog WS	SP	1	432.0	3,000	2	80.0		21
	Kabulihan WS	SP	1	648.0	1,000	2	60.0		10
	Nabaoy WS	SP	1	518.4	1,500	2	80.0		30
	Municipal Total	SP	5	2,462.4	10,500.0	10	380.0		96

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

Sheet 1 of 6

Name of Municipality	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)		
Malinao	SP	1	129.6	30	1	4.5	1,000	5		
	SP	1	129.6	108	1	4.5	441	8		
	SP	1	129.6	300	1	4.5	1,500	7		
	SP	1	51.8	50	1	4.5	1,500	9		
	SP	1	86.4	48	1	4.5	528	4		
	Municipal Total	5	527.0	536	5	22.5	4,969	33		
	SP	1		1,500	1	16.0	1,000	10		
	SP	1		2,000	2	15.0	2,000	20		
	SP	1		800	3	10.0	800	5		
	SP	1		1,500	1	16.0	2,000	10		
Nabas	SP	1		500	2	16.0	1,000	15		
	SP	1		500	2	16.0	2,000	9		
	SP	1		1,000	2	10.0	100	16		
	SP	1		1,500	1	8.0	1,500	10		
	DW	1		50	1	9.7	500	18		
	SP	1		1,500	1	8.0	2,000	5		
	SP	1		1,500	1	10.9	2,000	25		
	SP	1		2,000	1	15.0	1,500	20		
	Municipal Total	1/11		14,350	18	150.6	16,400	163		
	SP	1	216.0	100	2	8.0	1,000	25		
Tangalan	SP	1	216.0	100	2	20.0		4		
	SP	1	116.6	2,500	4	23.1	1,000	8		
	SP	1		350	1	4.0	700	12		
	Municipal Total	4	548.6	3,050	9	55.1	2,700	49		
Provincial Total			75,393	84	1,352.5	52,678	814			

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	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
Altavas	Cabangila WS		1	1		35	35		175	175
	Catmon WS		1	1		35	35		175	175
	Linayasan WW		1	1		50	50		250	250
	Tibao WS	1	3	4	5	15	20	25	75	100
	Tibiao SDA		1	1		15	15		75	75
	Municipal Total	1	7	8	5	150	155	25	750	775
Balete	Aranas		1	1		25	25		125	125
	Balete WD	1	2	3	15	25	40	75	125	200
	Calizo		1	1		25	25		125	125
	Municipal Total	1	4	5	15	75	90	75	375	450
Banga	Daguitan		1	1		70	70		350	350
	Pagsanghan		1	1		65	65		325	325
	Sibalew		1	1		150	150		750	750
	Sigay		1	1		85	85		425	425
		Municipal Total		4	4		370	370		1,850
Batan	Caiyang		1	1		25	25		125	125
	Magubahay		1	1		20	20		100	100
		Municipal Total		2	2		45	45		225
Buruanga	Bagongbayan		1	1		65	65		325	325
	Bel-is		1	1		20	20		100	100
	Habana		1	1		75	75		375	375
	Lindero		1	1		45	45		225	225
	Nazareth		1	1		140	140		700	700
	Poblacion	1	2	3	50	105	155	250	525	775
	Santander		1	1		95	95		475	475
	Municipal Total	1	8	9	50	545	595	250	2,725	2,975

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

Name of Municipality	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
Ibajay	Agbago SDS		1	1		25	25		125	125
	Antipolo SDS		1	1		55	55		275	275
	Mabusao SDS		1	1		25	25		125	125
	Regador WWA		1	1		35	35		175	175
	Municipal Total		4	4		140	140		700	700
Libacao	Agmailig		1	1		45	45		225	225
	Guadalupe BWSA		1	1		125	125		625	625
	Libacao WD		1	1		60	60		300	300
	Municipal Total		3	3		230	230		1,150	1,150
Madalag	Napnot SDA		1	1		80	80		400	400
	Panangayan SDA		1	1		40	40		200	200
	Municipal Total		2	2		120	120		600	600
Makato	Bag-ong Barrio		1	1		65	65		325	325
	Castillo (DPWH)		1	1		25	25		125	125
	Castillo (JICA)		1	1		255	255		1,275	1,275
	Castillo BWSA		1	1		25	25		125	125
	Libang		1	1		125	125		625	625
	Municipal Total		5	5		495	495		2,475	2,475
Malay	Argao WS		1	1		125	125		625	625
	Cogon WS		1	1		50	50		250	250
	Dumlog and Naasog		2	2		105	105		525	525
	Kabulihan WS		1	1		50	50		250	250
	Nabaoy WS		1	1		150	150		750	750
	Municipal Total		6	6		480	480		2,400	2,400

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

Name of Municipality	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	
Malinao	Bulabud		1	1		25	25		125	125	
	Cabayugan		1	1		40	40		200	200	
	San Dimas		1	1		35	35		175	175	
	Tambu-an		1	1		45	45		225	225	
	Tigpalas		1	1		20	20		100	100	
	Municipal Total		5	5		165	165		825	825	
	Nabas	Buenafortuna CWS		1	1		50	50		250	250
		Gibon CWS	1		1		100	100		500	500
		Habana CWS		1	1		20	20		100	100
		Laserna CWS		1	1		50	50		250	250
Liberty SCWS			1	1		75	75		375	375	
Magallanes CWS			1	1		45	45		225	225	
Matabana CWS			1	1		80	80		400	400	
Pinatad CWS			1	1		50	50		250	250	
Solido WS			1	1		60	60		300	300	
Tagororoc (PCHO)			1	1		25	25		125	125	
Tangalan	Tagororoc CWS		1	1		125	125		625	625	
	Unidos CWS		1	1		100	100		500	500	
	Municipal Total	1	11	12		780	780		3,900	3,900	
	Jawili		1	1		125	125		625	625	
	Lanipga SWA		1	1		20	20		100	100	
	Pudiot BWSA		3	3		40	40		200	200	
	Tagas		1	1		60	60		300	300	
	Municipal Total		6	6		245	245		1,225	1,225	
	Provincial Total		4	67	71	70	3,840	3,910	350	19,200	19,550

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

Name of Municipality	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	
Altavas	Cabangila WS	24									
	Catmon WS	24									
	Linayasan WW	1									
	Tibao WS	24									
Balete	Tibiao SDA	3									
	Aranas	8									
	Balete WD	4									
	Calizo	3									
Banga	Daguitan	12									
	Pagsanghan										
	Sibalew	12									
	Sigcay	24									
Batan	Caiyang	24									
	Magubahay	24									
Buruanga	Bagongbayan	24									
	Bel-is	24									
	Habana	24									
	Lindero	24									
	Nazareth	24									
	Poblacion	24									
	Santander	24									
Ibajay	Agbago SDS	24									
	Antipolo SDS	24									
	Mabusao SDS	24									
	Regador WWA	24									

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

Name of Municipality	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)				Adequate	Inadequate
					Power Failure	Pump Breakdown	Pipe Burst	Others		
Libacao	Agmailig	24								
	Guadalupe BWSA	8								
	Libacao WD	5								
Madalag	Napnot SDA	24								
	Panungayan SDA	24								
Makato	Bag-ong Barrio	24								
	Castillo (DPWH)	24								
	Castillo (JICA)	24								
	Castillo BWSA	24								
	Libang	24								
Malay	Argao WS	24								
	Cogon WS	24								
	Dumlog and Naasog WS	24								
	Kabulihan WS	24								
	Nabaoy WS	24								
Malinao	Bulabud	24								
	Cabayugan	24								
	San Dimas	24								
	Tambu-an	24								
	Tigpalas	24								
Nabas	Buenafortuna CWS	24								
	Gibon CWS	12								
	Habana CWS	12								
	Laserna CWS	12								
	Liberry SCWS	12								

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

Name of Municipality	Name of Operating Body	Supply (Hrs/day)	Dirty Water ¹	Taste or Smell ²	Service Conditions During Dry Season						Supply Water		
					Power Failure	Pump Breakdown	Pipe Burst	Others	Adequate	Inadequate			
Nabas	Magallanes CWS	24											
	Matabana CWS	24											
	Pinatuaad CWS	12											
	Solido WS	12											
	Tagororoc (PCHO)	24											
	Tagororoc CWS	24											
	Unidos CWS	12											
	Jawli	24											
Tangalan	Lanipga SWA												
	Pudiot BWSA	6											
	Tagas	24											

Table 4.1.2 Details on Existing Level II Systems
Sheet 4 of 6

Name of Municipality	Name of Operating Body	Technical Staff	Administrative Staff	Collector	Total Number of Staff	Number of Staff				
						Local Tradesman	MEO/CEO	DEO	Others	
Altavas	Cabangila WS									Brgy. Off.
	Camon WS									
	Linayasan WW			1	1					
	Tibao WS									
	Tibiao SDA									
Balete	Aranas	1	8	2	11	✓				
	Balete WD	2	4	2	8	✓				LGU
	Calizo	1	2	1	4	✓				LGU
	Daguitan			2	2	✓				
Banga	Pagsanghan			1	1	✓				
	Sibalew	1		1	2	✓				
	Sigcay			1	1	✓				
	Caiyang	1	1		2	✓				
Batan	Magubahay	1	1		2	✓				
	Bagongbayan									
Buruanga	Bel-is									
	Habana									
	Lindero									
	Nazareth									
	Poblacion									
	Santander									
	Agbago SDS									
	Antipolo SDS									
Ibajay	Mabusao SDS		7	1	8	✓				
	Regador WWA					✓				BWSA

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

Sheet 4 of 6

Name of Municipality	Name of Operating Body	Number of Staff					Repair Work		
		Technical Staff	Administrative Staff	Collector	Total Number of Staff	Local Trademan	MEO/CEO	DEO	Others
Libacao	Agmaliig					✓			
	Guadalupe BWSA								
	Libacao WD								
Madalag	Napnot SDA	2	15	1	18				BWSA
	Pangayyan SDA	2	15	1	18				BWSA
Makato	Bag-ong Barrio								
	Castillo (DPWH)								
	Castillo (JICA)								
	Castillo BWSA								
	Libang								
Malay	Argao WS								
	Cogon WS								
	Dumlog and Naasog WS								
Malinao	Kabulihan WS								BWSA
	Nabaoy WS								BWSA
	Bulabud							✓	BWSA
	Cabayugan							✓	BWSA
	San Dimas								BWSA
	Tambu-an								BWSA
	Tigpalas								BWSA
Nabas	Buenafortuna CWS							✓	BWSA
	Gibon CWS							✓	BWSA
	Habana CWS								BWSA
	Laserna CWS							✓	BWSA
	Liberty SCWS							✓	BWSA
	Magallanes CWS							✓	BWSA

Table 4.1.2 Details on Existing Level II Systems (Cont'd)
Sheet 4 of 6

Name of Municipality	Name of Operating Body	Number of Staff						
		Technical Staff	Administrative Staff	Collector	Total Number of Staff	Local Tradesman	Repair Work MEO/CEO DEO	Others
Nabas	Matabana CWS					✓		BWSA
	Pinatuaad CWS					✓		BWSA
	Solido WS	Brgy. Off.	Brgy. Off.					Brgy. Off.
	Tagororoc (PCHO)					✓	✓	PHCB
	Tagororoc CWS	Brgy. Off.	Brgy. Off.				✓	BWSA
	Unidos CWS					✓		BWSA
Tangalan	Jawili							
	Lanipga SWA							
	Pudiot BWSA	7	4	3	14			BWSA
	Tagas							

Table 4.1.2 Details on Existing Level II Systems
Sheet 5 of 6

Name of Municipality	Name of Operating Body	Expenditures (P.000.00 / year)						Loan Repayment	Other	Consumer Payment (Year)	Tariff (Pesos)			Average Collection Efficiency (%)
		Annual	Wages	Fuel, Chem.	Transport	Repairs	Cost per Pail				Cost per Cu.	Cost per HH	Other	
Altuvas	Cabangla WS													
	Camon WS													
	Linayasan WW													
	Tibao WS													
	Tibiao SDA													
Balete	Aranas													
	Balate WD													
Banga	Calizo													
	Daguitan					5						10		
	Pagsanghan					10						10		
	Sibalew					10								
Batan	Siggay					10								
	Caiyang													
Buruanga	Magubahay													
	Bagongbayan											2		
	Belis											10		
	Habana											2		
	Lindero													
	Nazareth													
	Poblacion											30		
Ibajay	Sanrander													
	Agbago SDS													
	Anipolo SDS													
	Mabusao SDS											10		
	Regador WWA											20		
	Agrmailig												1.00/day	
Libacao	Guadalupe BWSA											10.5		
	Libacao WD	539	270	104			72							
Madalag	Napnot SDA												10	
	Panangayan SDA												20	
Makato	Bag-ong Barrio													
	Castillo (DPWH)													
	Castillo (JICA)													
	Castillo BWSA													
Libang														

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

Name of Municipality	Name of Operating Body	Expenditures						Tariff			Average Collection Efficiency (%)		
		Annual	Wages	Fuel, Chem. Mat'l.	Transport	Repairs	Loan Repayment	Other	Consumer Payment	Cost per Pail		Cost per Cu. Meter	Cost per HH
		(P '000.00 / year)						(Pesos)					
Malay	Argao WS												
	Cogon WS												
	Dumlog and Naasog WS												
	Kabulihan WS												
	Nabaoy WS												
	Bulabud												
	Cabayugan												
	San Dimas												
	Tambu-an												
	Tigpalas												
Nabas	Buenaforma CWS												
	Gibon CWS												
	Habana CWS												
	Lasema CWS												
	Liberty SCWS												
	Magallanes CWS												
	Matabana CWS												
	Pinatad CWS												
	Solido WS												
	Tagororoc (PCHO)												
Tangalan	Tagororoc CWS												
	Unidos CWS												
	Jawili												
	Lanipga SWA												
	Pudiot BWSA												
	Tagas												

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

Name of Municipality	Name of Operating Body	Billings				Revenues				
		Annual Billing (Number)	Public Faucet Consumers	House Connection Consumers	Expected Subsidies	Others	Annual Income (P '000.00 / year)	Payment by Public Faucet Consumers	Payment by House Connection	Other
Altagas	Cabangila WS									
	Camon WS									
	Limayasan WW									
	Tibao WS									
	Tibiao SDA									
Balete	Aranas									
	Balete WD									
Banga	Calizo									
	Daguitan		0.06	0.12			6.3	0.3	6	
	Pagsanghan		0.06	0.12			2.1	0.3	1.8	
	Sibalew		0.06	0.12			7.8	1.8	6	
	Sigay		0.06	0.12			2.52	2.28	0.24	
Batan	Catayang									
	Magubahay									
Buruanga	Bagongbayan									
	Bel-is									
	Habana									
	Lindero									
	Nazareth									
	Poblacion									
	Santander									
	Agbago SDS									
	Antipolo SDS									
	Mabusao SDS						12.36			
Libacao	Regador WWA									
	Agmaling						2.16			
	Guadalupe BWSA									
Madalag	Libacao WD			639.8			(66.34)		1.26	
	Napnot SDA									
	Paningsayan SDA									

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

Name of Municipality	Name of Operating Body	Billings				Revenues					
		Annual Billing (Number)	Public Faucet Consumers	House Connection Consumers	Expected Subsidies	Others	Annual Income (P '000.00 / year)	Payment by Public Faucet Consumers	Payment by House Connection Consumer	Subsidies	Other
Makato	Bag-ong Barrio										
	Castillo (DPWH)										
	Castillo (JICA)										
	Castillo BWSA										
	Libang										
Malay	Argao WS										
	Cogon WS										
	Dumlog and Naasog WS										
Malinao	Kabulihan WS										
	Nabaoy WS										
	Bulabud										
	Cabayugan										
	San Dimas										
	Tambu-an										
	Tigpalas										
	Buenafortuna CWS										
	Gibon CWS										
	Habana CWS										
Nabas	Laserna CWS										
	Liberty SCWS										
	Magallanes CWS										
	Matabana CWS										
	Pinatwad CWS										
	Solido WS										
	Tagororoc (PCHO)										
	Tagororoc CWS										
	Unidos CWS										
	Jawili										
Tangalan	Lanipga SWA										
	Pudiot BWSA										
	Tagas										

4.1.5 Level I Facilities

Safe and Unsafe Classification of Level I Facilities

According to the definition of DOH, protected deep well, protected shallow well, covered/improved dug well and developed spring are classified as safe sources, while unprotected shallow well, open dug well, undeveloped spring and rain water collector are classified as unsafe sources.

In the 1990 population census data, "Households by Main Source of Drinking Water and City/Municipality", it was shown that 56 % of households depended on shallow well, dug well, undeveloped spring, lake, river and rain water collector, etc. This figure was arrived as the percentage of underserved/unserved sources, if all shallow wells were regarded as doubtful.

Meanwhile, the PHO has been conducting water quality analysis of samples collected at public and private Level I wells. However, the results of water quality analysis on existing shallow wells are not available at this study time.

As a reference information, on the other hand, the experiences in 1st to 3rd batch provinces (16 provinces) in Mindanao and Visayas area in the preparation of PW4SP show the unsafe percentage of 20-60% as summarized below.

Surigao del Norte	Agusan del Norte	Agusan del Sur	Bukidnon	Misamis Oriental	Davao Oriental	Davao del Norte	Davao del Sur
20%	50%	23%	50%	50%	40%	20%	46%
Sarangani	South Cotabato	Northern Samar	Eastern Samar	Samar	Biliran	Leyte	Southern Leyte
30%	50%	40%	40%	50%	30%	40%	60%

Based on the above study, the average percentage of 40 (%) may be adopted as the unsafe percentage to all municipalities both in urban and rural area in the classification of unsafe shallow wells. While, those sources other than shallow wells are processed as classified in the questionnaire. Table 4.1.4 (a) presents the numbers of Level I facilities by safe and unsafe classification.

Public and Private Level I Facilities for Rural Water Supply

Table 4.1.4 (b) presents the number and proportion of Level I facilities by public and private sources for rural water supply in the province. Public and private facilities share 15% and 85% of the total number of Level I facility, respectively. Developed springs occupy 7% of the total number of public facilities.

Table 4.1.4 (a) Number of Level I Facilities by Safe and Unsafe Classification

Name of Municipality	Area	Safe Sources										Unsafe Source						Grand Total							
		Public					Private					Public			Private										
		Deep Well	Shallow Well	Covered/Improved Dug Well	Developed Spring	Sub-total	Deep Well	Shallow Well	Covered/Improved Dug Well	Sub-total	Total	Shallow Well	Open Dug Well	Undeveloped Spring	Rain Water Collection	Sub-total	Shallow Well		Open Dug Well	Rain Water Collector	Sub-total	Total			
Alvarez	Urban	10	46			56															26		76		
	Rural	62	37	1	3	103																32		451	
	Total	72	77	1	3	153																58		527	
Balete	Urban	3	1			4																0		15	
	Rural	4	7		2	13																4		839	
	Total	7	7		2	16																4		854	
Banga	Urban																					5		854	
	Rural		108			108																20		200	
	Total		108			108																20		200	
Bataan	Urban	2				2																2		2	
	Rural	28	135	20	2	185	4	37	25	66	251	90									23	113	25	2,687	
	Total	30	155	20	2	187	4	40	25	69	256	90									23	113	26	1,272	
Bunauanga	Urban	9				9																4		4	
	Rural																					4		4	
	Total	9				9																8		8	
	Urban	9	18	2	69	91																44		44	
	Rural	29	21	50	155	24																46		46	
	Total	38	39	50	179	229	14															90		90	
	Urban	61	144	8	62	275	56	1,234	108	1,623	96											14		16	
	Rural	90	165	8	62	325	211	1,258	108	1,577	1,902	110										97		30	
	Total	151	309	16	124	600	267	2,492	216	3,199	2,524	220										111		111	
	Urban	6				6																			
	Rural	6				6																			
	Total	12				12																			
	Urban	6				6																			
	Rural	6				6																			
	Total	12				12																			
	Urban	3				3																			
	Rural	23	22			45	2	191	191	237	14											15		15	
	Total	26	22			48	2	224	224	275	16											18		18	
	Urban	1				1																			
	Rural	167	127	272	52	538	124	100	148	372	929	84										91		91	
	Total	168	128	272	52	560	508	100	150	380	1,000	86										92		92	
	Urban	3				3																			
	Rural	23	50	10	83	166	4	56	1	61	144	33										46		46	
	Total	26	53	10	93	179	8	61	1	62	144	33										48		48	
	Urban	1				1																			
	Rural	25	53	10	93	179	8	61	1	62	144	33										48		48	
	Total	26	53	10	93	179	8	61	1	62	144	33										48		48	
	Urban	9				9																			
	Rural	17	77	31	4	109	24	332	25	381	521	51										55		55	
	Total	26	77	31	4	138	24	357	25	392	572	51										60		60	
	Urban	1				1																			
	Rural	25	77	31	4	137	24	357	25	391	571	51										59		59	
	Total	26	77	31	4	138	24	357	25	392	572	51										60		60	
	Urban	7	26	5	6	44																			
	Rural	8	32	7	7	54																			
	Total	15	58	12	13	98																			
	Urban	3				3																			
	Rural	12	58	12	13	95																			
	Total	15	58	12	13	98																			
	Urban	54	9			63																			
	Rural	37	9			46																			
	Total	91	18			109																			
	Urban	50				50																			
	Rural	10				10																			
	Total	60				60																			
	Urban	87				87																			
	Rural	10				10																			
	Total	97				97																			
	Urban	133				133																			
	Rural	191				191																			
	Total	324				324																			
	Urban	149				149																			
	Rural	175				175																			
	Total	324				324																			

Table 4.1.4 (a) Number of Level I Facilities by Safe and Unsafe Classification (Cont'd)

Name of Municipality	Area	Safe Sources										Unsafe Source						Grand Total				
		Public					Private					Public			Private							
		Deep Well	Shallow Well	Covered/Improved Dug Well	Developed Spring	Sub-total	Deep Well	Shallow Well	Covered/Improved Dug Well	Sub-total	Total	Shallow Well	Open Dug Well	Undeveloped Spring	Rain Water Collection	Sub-total	Shallow Well		Open Dug Well	Rain Water Collector	Sub-total	Total
Numbancia	Urban	6	2			8		164		173					2	110	11		4	125	126	299
	Rural	7	28			35		1,316	3	1,319	19				20	878	60		11	949	968	2,323
	Total	13	31			44		1,481	3	1,484	20				21	987	71		15	1,073	1,095	2,652
Togalan	Urban	2	7			9		58	68					5	39					39	44	112
	Rural	29	50		11	90	1	245	336	34				34	163					163	197	353
	Total	31	58		11	100	2	303	405	405	38			38	202					202	240	645
Provincial Total	Urban	70	106	4	8	188	759	1,987	199	2,443	71			110	748	3,695	3,371	586	7,446	8,194	17,651	
	Rural	502	956	277	183	1,918	1,300	5,243	996	7,539	638			113	821	4,870	3,642	677	8,790	9,560	21,463	
	Total	572	1,063	281	191	2,107	2,059	6,630	1,135	9,794	1,101			113	821	4,870	3,642	677	8,790	9,560	21,463	

Table 4.1.4 (b) Public and Private Level I Facilities for Rural Water Supply

Facility	Public Source		Private Source		Total
	Number	%	Number	%	
Deep Well	502	28%	1,300	72%	1,802
Shallow Well	1,594	15%	8,738	85%	10,332
Spring Development	183	100%			
Others	387	7%	4,947	93%	5,334
Total	2,666	15%	14,985	85%	17,651

4.1.6 Water Supply Service Coverage

Estimation of Service Coverage in Terms of Safe, Unsafe and Unserved Classification

Through review of the number of water supply systems/facilities and the number of households that were derived from the questionnaire, it was found out that a great number of unserved population would be accounted as a balance between the total population and the population with any levels of services (including unsafe facilities) in application of the service level standard for Level I and II. To come up with more realistic service coverage, the unserved population in 1998 was referred to using the profile in the 1990 population census data, "Households by Main Source of Drinking Water and City/Municipality" prepared by NSO. The rest of the population, those who are not served by Level III and/or II systems, were considered to be covered by shared or own use of Level I facilities. The calculation procedure is as follows:

- Service percentage/population of Level III and Level II systems was estimated based on the questionnaire survey results.
- Percentage of unserved population (using undeveloped spring, lake water, river water, peddler, etc.) of respective municipality by urban and rural area, which were studied in the 1990 population census and modified at maximum 20% for some municipalities in consideration of current situation.
- Population covered by Level I facilities was calculated as the balance between the total population and the population served by Level III & II systems and the unserved population.
- Level I population coverage was estimated with the assumption that 50% of the private facilities were shared by neighbors.

Unserved population and the population covered by Level I facilities are presented in Table 4.1.5. Table 4.1.6 (a) and (b) presents the overall population covered by Level I facilities and the number of households.

Table 4.1.5 Estimation of Unserved Population by Municipality

Name of Municipality	Area	Population and Household (1998)		Served Population			Unserved Population (1995)				Population Covered by Level I Facilities
		Number	HH Size	Level III	Level II	Total	Total No. of HHs	Unserved Percentage (1995)		Unserved Population 1998	
								No. of Unserved	%		
Altavas	Urban	2,829	5.43	200	25	225	505	60	12	336	2,268
	Rural	19,311	5.22		750	750	3,588	456	13	2,454	16,107
	Total	22,140	5.25	200	775	975	4,093	516	13	2,790	18,375
Balete	Urban	1,727	5.03		75	75	341	68	20	344	1,308
	Rural	18,392	5.05		375	375	3,613	522	14	2,657	15,360
	Total	20,119	5.05		450	450	3,954	590	15	3,002	16,667
Banga	Urban	2,155	5.11				408	21	5	111	2,044
	Rural	28,914	5.11		1,850	1,850	5,480	160	3	844	26,220
	Total	31,069	5.11		1,850	1,850	5,888	181	3	955	28,264
Batan	Urban	1,569	4.54	1,225		1,225	339	14	4	65	279
	Rural	25,377	4.97	510	225	735	5,006	104	2	527	24,115
	Total	26,946	4.94	1,735	225	1,960	5,345	118	2	592	24,394
Buruanga	Urban	1,181	5.27		250	250	223	45	20	238	693
	Rural	11,535	4.97		2,725	2,725	2,311	462	20	2,306	6,504
	Total	12,716	5.00		2,975	2,975	2,534	507	20	2,544	7,197
Ibajay	Urban	2,738	5.17				523	105	20	550	2,188
	Rural	33,926	4.88	8,108	1,200	9,308	6,856	1,058	15	5,235	19,383
	Total	36,664	4.90	8,108	1,200	9,308	7,379	1,163	16	5,785	21,571
Kalibo (Capital)	Urban	62,774	5.15	30,205		30,205	11,281	916	8	5,097	27,472
	Rural										
	Total	62,774	5.15	30,205		30,205	11,281	916	8	5,097	27,472
Lezo	Urban	1,969	4.73	1,295		1,295	388	4	1	20	654
	Rural	10,393	4.99	829		829	1,944	30	2	160	9,404
	Total	12,362	4.95	2,124		2,124	2,332	34	1	181	10,057
Libacao	Urban	2,808	5.31				503	102	20	564	2,244
	Rural	20,959	5.54	2,695	1,150	3,845	3,634	727	20	4,193	12,921
	Total	23,767	5.51	2,695	1,150	3,845	4,142	829	20	4,757	15,165
MadaIag	Urban	1,657	5.80	696	100	796	269	54	20	333	528
	Rural	16,032	5.81	600	600	600	2,598	520	20	3,209	12,223
	Total	17,689	5.81	696	700	1,396	2,867	574	20	3,542	12,751

Table 4.1.5 Estimation of Unserved Population by Municipality (Cont'd)

Name of Municipality	Area	Population and Household (1998)		Served Population			Unserved Population			Population Covered by Level I Facilities	
		Number	HH Size	Level III	Level II	Total	Total No. of HHs	Unserved Percentage (1995)			Unserved Population 1998
								No. of Unserved	%		
Makato	Urban	2,928	5.24	1,506		1,506	514	70	14	399	1,023
	Rural	20,926	5.45	612	2,475	3,087	3,536	533	15	3,154	14,685
	Total	23,854	5.42	2,118	2,475	4,593	4,050	603	15	3,553	15,708
Malay	Urban	6,484	5.46				982	68	7	449	6,035
	Rural	17,000	5.25		2,400	2,400	2,676	518	19	3,291	11,309
	Total	23,484	5.31		2,400	2,400	3,658	586	16	3,740	17,344
Malinao	Urban	1,544	4.88	1,500		1,500	303	61	20		44
	Rural	20,893	5.28	684	825	1,509	3,791	604	16	3,329	16,055
	Total	22,437	5.25	2,184	825	3,009	4,094	665	16	3,329	16,099
Nabas	Urban	3,899	5.01				757	151	20	778	3,121
	Rural	18,098	5.11		3,900	3,900	3,441	668	19	3,513	10,685
	Total	21,997	5.10		3,900	3,900	4,198	819	20	4,291	13,806
New Washington	Urban	5,139	5.31				931	12	1	66	5,073
	Rural	28,002	5.22				5,167	90	2	488	27,514
	Total	33,141	5.23				6,098	102	2	554	32,587
Numancia	Urban	3,154	5.44	780		780	539	3	1	18	2,356
	Rural	20,910	5.22	6,381		6,381	3,725	24	1	135	14,394
	Total	24,064	5.24	7,161		7,161	4,264	27	1	152	16,751
Tangalan	Urban	2,834	5.43				493	70	14	402	2,432
	Rural	14,301	5.49		1,225	1,225	2,458	492	20	2,863	10,213
	Total	17,135	5.48		1,225	1,225	2,951	562	19	3,265	12,645
Provincial Total	Urban	107,389	5.18	37,407	450	37,857	19,304	1,824	9	9,770	59,762
	Rural	324,969	5.19	19,819	19,700	39,519	59,824	6,968	12	38,359	247,091
	Total	432,358	5.19	57,226	20,150	77,376	79,128	8,792	11	48,128	306,854

Table 4.1.6 (a) Estimation of Population Covered by Safe and Unsafe Source by Municipality

Name of Municipality	Area	Pop. Covered by Level I Facilities	Number of Facilities						Coverage of Own Use											
			Public Facilities			Private Facilities			Number of Private Facilities			(1) Population Covered								
			Safe	Unsafe	Total	Safe	Unsafe	Total	Safe	Unsafe	Total	Safe	Unsafe	Total						
Alitavas	Urban	2,268	50	26	76															
	Rural	16,107	103	32	135	92	224	316	46	112	158	251	607	859						
	Total	18,375	153	58	211	92	224	316	46	112	158	251	607	859						
Baleric	Urban	1,308	4	0	4	5	6	11	3	3	6	13	15	28						
	Rural	15,360	13	4	17	30	792	822	15	396	411	75	1,990	2,066						
	Total	16,667	16	5	21	35	798	833	18	399	417	88	2,006	2,093						
Banga	Urban	2,044	2		2															
	Rural	26,220	108	92	200															
	Total	28,264	110	92	202															
Batan	Urban	279	2		2	2	236	238	1	118	119	5	279	285						
	Rural	24,115	185	113	298	66	668	734	33	334	367	150	1,515	1,665						
	Total	24,394	187	113	300	69	903	972	34	452	486	156	1,794	1,950						
Buruanga	Urban	693	2		2	4	2	6	2	1	3	9	6	16						
	Rural	6,504	18		18	67	44	111	34	22	56	178	115	293						
	Total	7,197	20		20	71	46	117	36	23	59	187	121	309						
Ibajay	Urban	2,188	50	14	64	179	16	195	90	8	98	462	41	504						
	Rural	19,383	275	97	372	1,398	917	2,315	699	458	1,158	3,612	2,368	5,980						
	Total	21,571	325	111	436	1,577	933	2,510	799	466	1,255	4,074	2,410	6,484						
Kalibo (Capital)	Urban	27,472	6		6	746	489	1,235	373	245	618	1,919	1,259	3,178						
	Rural																			
	Total	27,472	6		6	746	489	1,235	373	245	618	1,919	1,259	3,178						
Lezo	Urban	654	5	2	7	33	55	88	17	28	44	78	130	208						
	Rural	9,404	45	15	60	193	205	398	96	103	199	456	486	942						
	Total	10,057	49	18	67	226	260	486	113	130	243	535	616	1,150						
Libacao	Urban	2,244	3	1	4	386	5	391	193	3	196	1,024	13	1,037						
	Rural	12,921	558	91	649	372	412	784	186	206	392	986	1,094	2,080						
	Total	15,165	560	93	653	758	417	1,175	379	209	588	2,010	1,107	3,117						
Madailag	Urban	528	12	4	16	8	40	48	4	20	24	23	117	139						
	Rural	12,223	83	79	162	61	662	723	31	331	362	178	1,920	2,098						
	Total	12,751	94	84	178	69	702	771	35	351	386	201	2,036	2,237						
Makato	Urban	1,023	10	6	16	120	85	205	60	43	103	315	223	537						
	Rural	14,685	140	55	195	381	290	671	190	145	336	998	761	1,759						
	Total	15,708	150	61	211	501	375	876	250	188	438	1,313	984	2,297						

Table 4.1.6 (a) Estimation of Population Covered by Safe and Unsafe Source by Municipality (Cont'd)

Name of Municipality	Area	Pop. Covered by Level I	Number of Facilities						Coverage of Own Use					
			Public Facilities			Private Facilities			Number of Private Facilities			(1) Population Covered		
			Safe	Unsafe	Total	Safe	Unsafe	Total	Safe	Unsafe	Total	Safe	Unsafe	Total
Malay	Urban	6,035	11	4	15	37	57	94	19	29	47	101	156	256
	Rural	11,309	44	17	61	134	191	325	67	96	163	365	522	887
	Total	17,344	54	22	76	171	248	419	85	124	210	466	677	1,143
Malinao	Urban	44	3		3	175			88		88	44		44
	Rural	16,055	70	6	76	1,257	1,098	2,355	629	549	1,178	3,070	2,682	5,751
	Total	16,099	73	6	79	1,432	1,098	2,530	716	549	1,265	3,114	2,682	5,795
Nabas	Urban	3,121	3	2	5	183	122	305	92	61	153	458	306	764
	Rural	10,685	65	34	99	1,048	699	1,747	524	349	874	2,625	1,750	4,376
	Total	13,806	68	36	104	1,231	821	2,052	616	410	1,026	3,084	2,056	5,139
New Washington	Urban	5,073	10	6	16	154	16	170	77	8	85	409	43	452
	Rural	27,514	87	58	145	874	133	1,007	437	67	504	2,321	354	2,675
	Total	32,587	97	64	161	1,028	149	1,177	514	75	589	2,730	396	3,126
Numancia	Urban	2,356	8	2	10	164	125	289	82	62	145	447	339	786
	Rural	14,394	35	20	55	1,319	949	2,268	660	474	1,134	3,586	2,578	6,164
	Total	16,751	44	21	65	1,484	1,073	2,557	742	537	1,279	4,033	2,917	6,950
Tangalan	Urban	2,432	9	5	14	59	39	98	30	19	49	161	105	266
	Rural	10,213	90	34	124	246	163	409	123	82	205	667	443	1,110
	Total	12,645	100	38	138	305	202	507	153	101	254	827	548	1,375
Provincial Total	Urban	59,762	188	74	262	2,255	1,293	3,548	1,128	646	1,774	5,468	3,031	8,500
	Rural	247,091	1,918	748	2,666	7,539	7,446	14,985	3,769	3,723	7,493	19,519	19,184	38,703
	Total	306,854	2,107	821	2,928	9,794	8,739	18,533	4,897	4,370	9,267	24,987	22,216	47,203

Table 4.1.6 (b) Estimation of Population Covered by Safe and Unsafe Source by Municipality

Name of Municipality	Area	Coverage of Shared Well						Level I Coverage (1) + (2)							
		(2) Population Covered by Private and Public			Number of Households			No. of HHs per Shared Facility		Safe		Unsafe		Total	
		Safe	Unsafe	Total	Safe	Unsafe	Total	Facility	%	Pop.	%	Pop.	%	Pop.	%
Altavas	Urban	1,480	788	2,268	272	145	417	5	52	1,480	28	788	28	2,268	80
	Rural	8,213	7,035	15,248	1,573	1,348	2,921	10	44	8,464	40	7,643	40	16,107	83
	Total	9,693	7,823	17,516	1,846	1,493	3,338	9	45	9,944	38	8,431	38	18,375	83
Balenc	Urban	840	440	1,280	167	88	255	27	49	852	26	455	26	1,308	76
	Rural	990	12,303	13,294	196	2,435	2,631	6	6	1,066	78	14,294	78	15,360	84
	Total	1,830	12,744	14,574	363	2,522	2,885	7	10	1,918	73	14,749	73	16,667	83
Banga	Urban	2,044		2,044	400		400	200	95	2,044				2,044	95
	Rural	14,159	12,061	26,220	2,773	2,362	5,134	26	49	14,159	42	12,061	42	26,220	91
	Total	16,203	12,061	28,264	3,172	2,362	5,534	27	52	16,203	39	12,061	39	28,264	91
Batan	Urban								0	5				279	18
	Rural	7,909	14,541	22,450	1,592	2,926	4,518	7	32	8,059	63	16,056	63	24,115	95
	Total	7,909	14,541	22,450	1,592	2,926	4,518	6	30	8,065	61	16,335	61	24,399	91
Buruanga	Urban	526	150	677	100	29	128	26	45	536	13	157	13	693	59
	Rural	4,575	1,636	6,211	920	329	1,249	17	41	4,753	15	1,751	15	6,504	56
	Total	5,101	1,787	6,888	1,020	358	1,378	18	42	5,289	15	1,908	15	7,197	57
Ibajay	Urban	1,685		1,685	326		326	2	78	2,147		41		2,188	80
	Rural	12,344	1,058	13,403	2,528	217	2,744	2	47	15,956	10	3,427	10	19,383	57
	Total	14,029	1,058	15,087	2,854	217	3,070	2	49	18,103	9	3,468	9	21,571	59
Kalibo (Capital)	Urban	16,695	7,599	24,293	3,243	1,476	4,720	8	30	18,614		8,858		27,472	44
	Rural														
	Total	16,695	7,599	24,293	3,243	1,476	4,720	8	30	18,614	14	8,858	14	27,472	44
Lezo	Urban	273	172	445	58	36	94	2	18	351		303		654	33
	Rural	5,119	3,342	8,461	1,026	670	1,696	7	54	5,576	37	3,828	37	9,404	90
	Total	5,392	3,514	8,907	1,084	706	1,790	6	48	5,927	33	4,130	33	10,057	81
Libacao	Urban	1,207		1,207	228		228	1	79	2,231		13		2,244	80
	Rural	9,227	1,614	10,841	1,667	292	1,958	2	49	10,213	13	2,708	13	12,921	62
	Total	10,434	1,614	12,048	1,894	292	2,186	2	52	12,444	11	2,721	11	15,165	64
Madalag	Urban	205	184	389	35	32	67	2	14	227		301		528	32
	Rural	2,650	7,475	10,125	456	1,286	1,742	3	18	2,828	59	9,395	59	12,223	76
	Total	2,855	7,660	10,514	491	1,318	1,809	3	17	3,056	55	9,696	55	12,751	72

Table 4.1.6 (b) Estimation of Population Covered by Safe and Unsafe Source by Municipality (Cont'd)

Name of Municipality	Area	Coverage of Shared Well						Level I Coverage (1) + (2)						
		(2) Population Covered by Private and Public			Number of Households			No. of HHs per Shared Facility	Safe		Unsafe		Total	
		Safe	Unsafe	Total	Safe	Unsafe	Total		Pop.	%	Pop.	%	Pop.	%
Makato	Urban	486		486	93		93	1	800	27	223	8	1,023	35
	Rural	9,140	3,785	12,926	1,678	695	2,373	4	10,139	48	4,546	22	14,685	70
	Total	9,626	3,785	13,411	1,771	695	2,466	4	10,939	46	4,769	20	15,708	66
Malay	Urban	2,833	2,946	5,779	519	540	1,059	17	2,933	45	3,102	48	6,035	93
	Rural	5,602	4,821	10,423	1,067	918	1,985	9	5,967	35	5,343	31	11,309	67
	Total	8,434	7,767	16,201	1,586	1,458	3,044	11	8,900	38	8,444	36	17,344	74
Malinao	Urban								44	3			44	3
	Rural	8,947	1,357	10,304	1,693	257	1,950	2	12,017	58	4,039	19	16,055	77
	Total	8,947	1,357	10,304	1,693	257	1,950	1	12,061	54	4,039	18	16,099	72
Nabas	Urban	1,873	485	2,357	374	97	471	3	2,331	60	790	20	3,121	80
	Rural	6,309		6,309	1,234		1,234	1	8,934	49	1,750	10	10,685	59
	Total	8,182	485	8,666	1,607	97	1,704	2	11,266	51	2,540	12	13,806	63
New Washington	Urban	4,350	272	4,621	819	51	870	9	4,759	93	314	6	5,073	99
	Rural	22,228	2,612	24,839	4,262	501	4,762	7	24,549	88	2,965	11	27,514	98
	Total	26,577	2,883	29,461	5,080	552	5,632	8	29,307	88	3,280	10	32,587	98
Numancia	Urban	1,382	189	1,571	254	35	289	2	1,829	58	528	17	2,356	75
	Rural	8,230		8,230	1,578		1,578	1	11,816	57	2,578	12	14,394	69
	Total	9,612	189	9,801	1,832	35	1,867	1	13,645	57	3,106	13	16,751	70
Tangalan	Urban	1,498	668	2,166	276	123	399	6	1,658	59	773	27	2,432	86
	Rural	6,632	2,472	9,104	1,208	450	1,658	5	7,299	51	2,915	20	10,213	71
	Total	8,129	3,140	11,270	1,484	573	2,057	5	8,957	52	3,688	22	12,645	74
Provincial Total	Urban	37,374	13,894	51,268	7,164	2,651	9,815	5	42,843	40	16,925	16	59,768	56
	Rural	132,274	76,114	208,388	25,450	14,685	40,135	4	151,793	47	95,299	29	247,091	76
	Total	169,648	90,008	259,656	32,613	17,336	49,950	4	194,635	45	112,224	26	306,859	71

The number of households per shared public/private facility is estimated at 5 households in urban area and 4 in rural area as provincial averages, which are considered within reasonable level compared with the service level standard of Level I public facility (15 households/facility). However, the figure in the urban area of Banga is considered quite large. This reason seems to arise from a large number of non-reported/unidentified private wells.

Percentage of Population Covered by Level I Public Facility for Rural Water Supply

Grasping the current percentage of population covered by public facilities would be a useful information in considering to what extent the additional population to be covered by public facilities in the future plan. This takes into account that the major facilities would be Level I especially for rural water supply in the future.

Population served by public facilities is calculated using Tables 4.1.6 (a) and 4.1.6 (b) as a balance between total population served by Level I facilities and population covered by private facilities. Thus, it is estimated that 73,600 persons or 48% of the population served by Level I facilities is covered by public facilities.

4.2 Sanitation and Sewerage

4.2.2 Types of Facilities and Definition of Service Level Standard

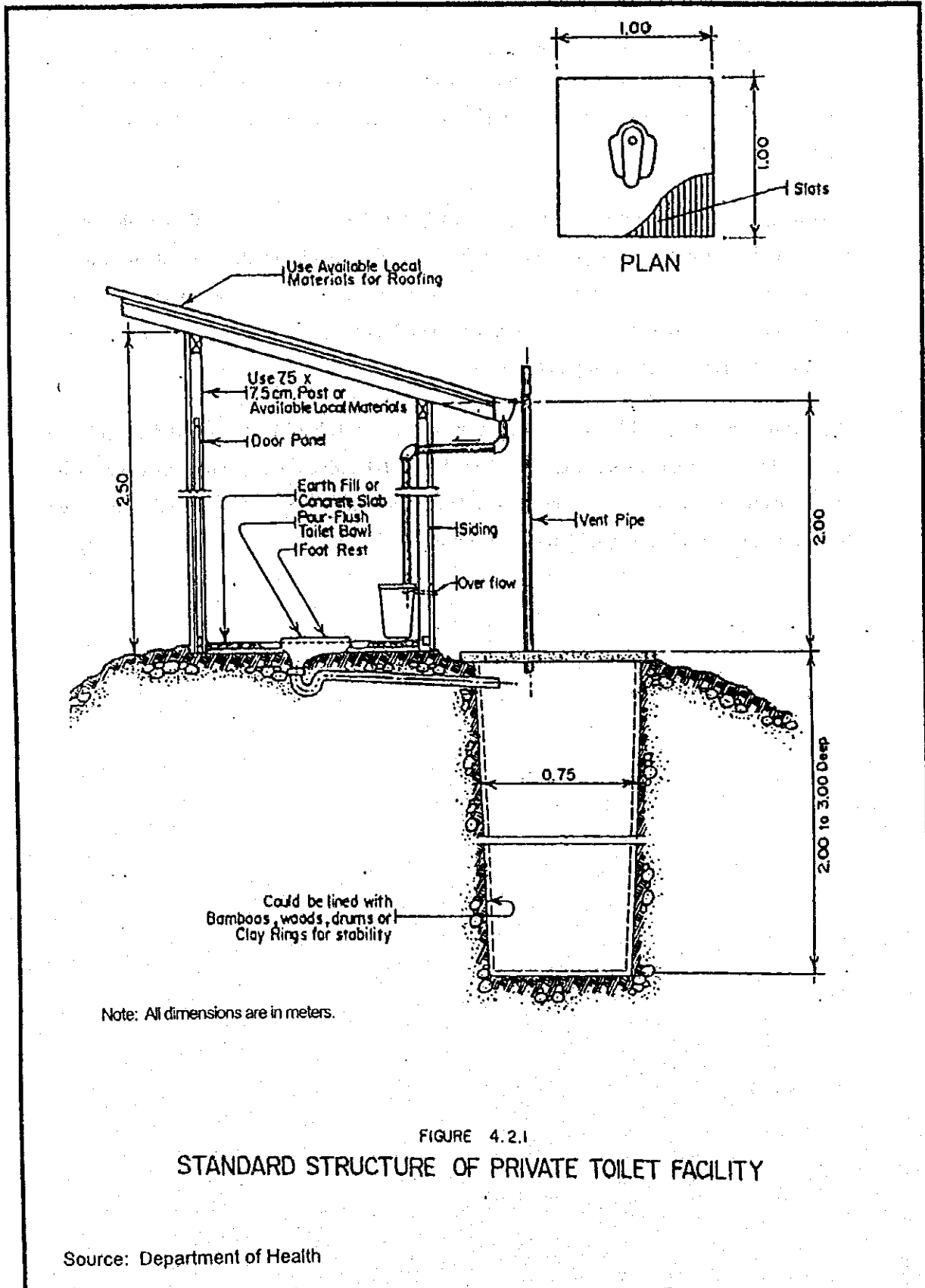
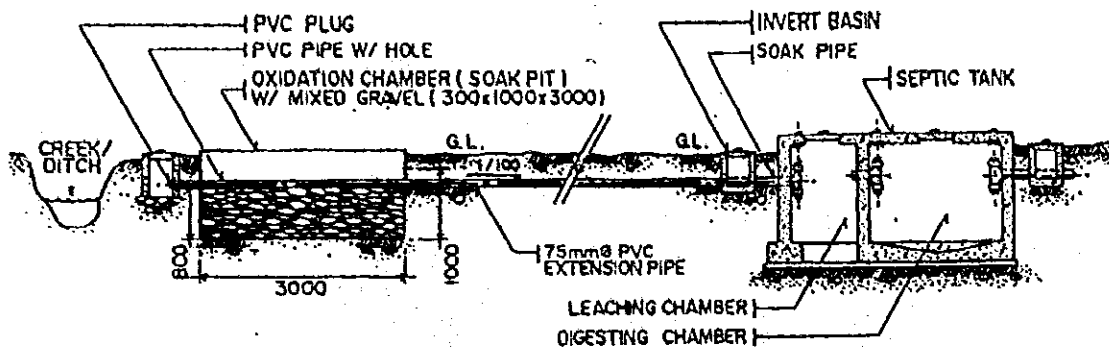
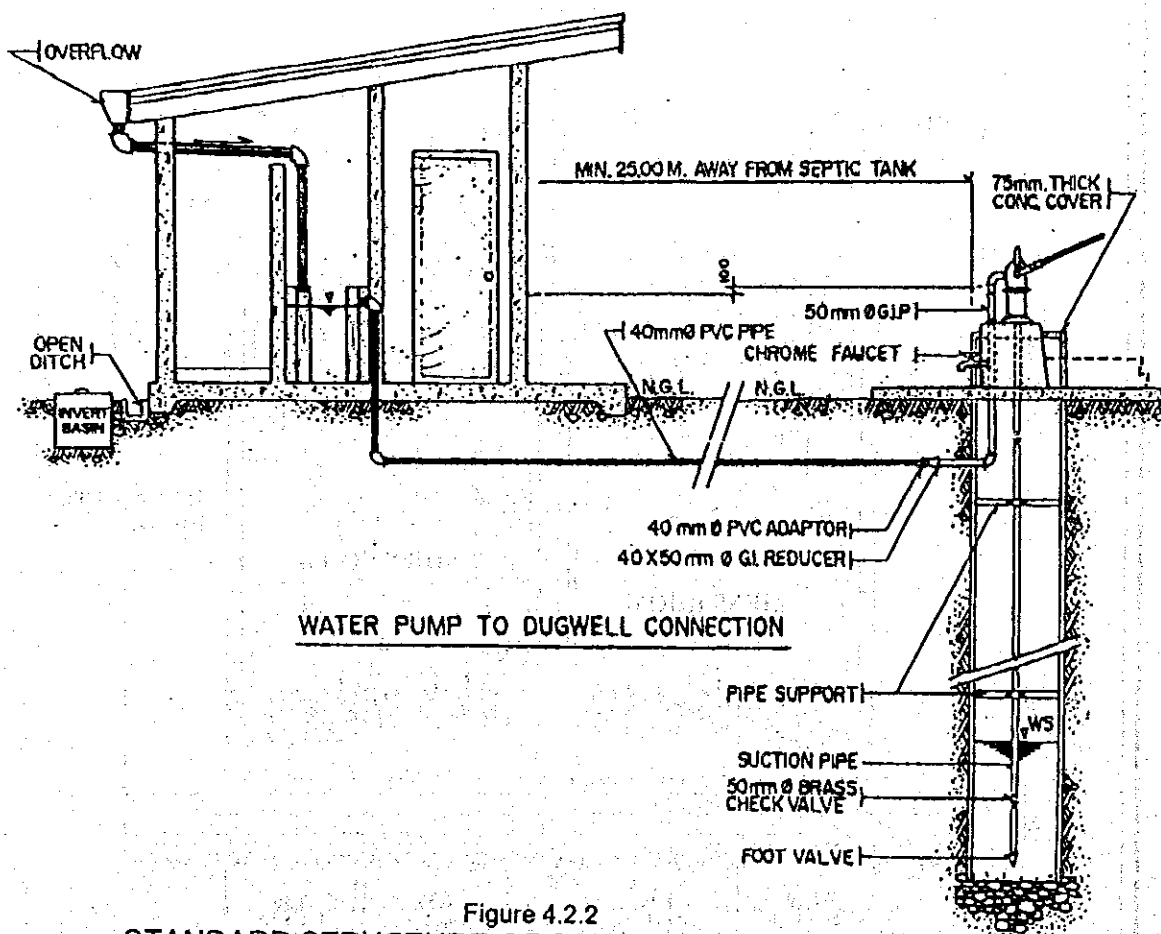


FIGURE 4.2.1
STANDARD STRUCTURE OF PRIVATE TOILET FACILITY

Source: Department of Health



LAYOUT PLAN OF HIGH GROUND WATER SITE



WATER PUMP TO DUGWELL CONNECTION

Figure 4.2.2
STANDARD STRUCTURE OF SCHOOL TOILET FACILITY

SOURCE: JICA - DPWH RURAL ENVIRONMENTAL SANITATION PROJECT

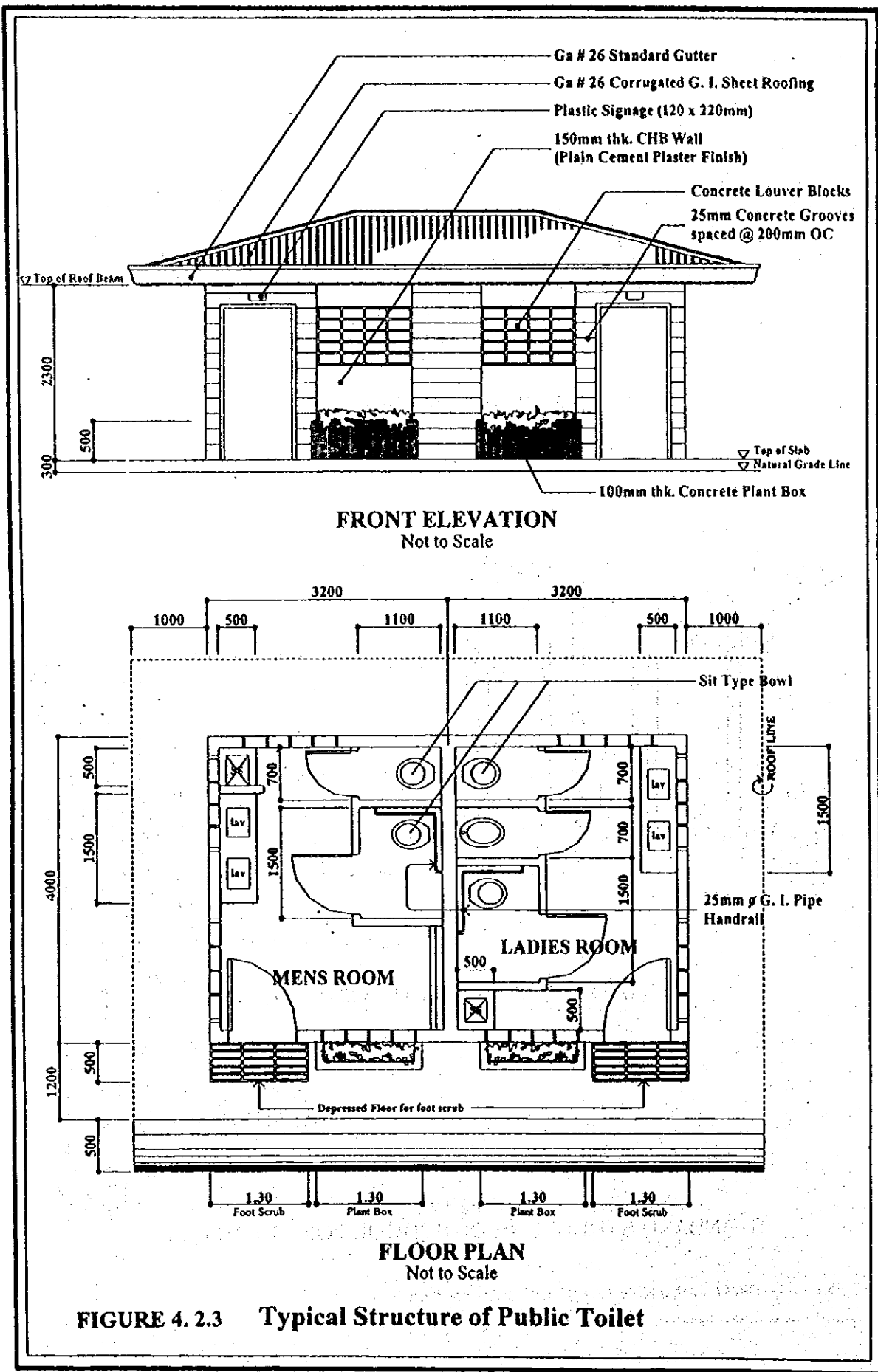


FIGURE 4. 2.3 Typical Structure of Public Toilet

4.2.3 Sanitation Facilities and Service Coverage

Table 4.2.1 Sanitation Facilities and Service Coverage of Household Toilets by Type, by Municipality, Urban and Rural 1998

Name of Municipalities	Area	No. of Households (1998)	Households Served by Sanitary Toilets								Underserved/Unserved HHs			
			Flush Toilet		Pour Flush		VIP		Total		Unsanitary		No Facility	
			Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
Altavas	Urban	521	41	8	255	49	100	19	396	76	95	18	30	6
	Rural	3,699	9	0	2,136	58			2,145	58	868	23	686	19
	Total	4,220	50	1	2,391	57	100	2	2,541	60	963	23	716	17
Balete	Urban	344			33	10	311	91	344	100				
	Rural	3,640					1,433	39	1,433	39	1,438	40	769	21
	Total	3,983			33	1	1,744	44	1,777	45	1,438	36	769	19
Banga	Urban	421	295	70	94	22	11	3	400	95	21	5		
	Rural	5,662	197	3	2,899	51	983	17	4,084	72	1,435	25	143	3
	Total	6,083	492	8	2,993	49	999	16	4,484	74	1,456	24	143	2
Batan	Urban	346	23	7	303	88	3	1	329	95	7	2	10	3
	Rural	5,107	10	0	2,886	57	14	0	2,910	57	1,431	28	766	15
	Total	5,452	33	1	3,189	58	17	0	3,239	59	1,438	26	776	14
Buruanga	Urban	224	125	56	62	28	17	8	204	91	10	4	10	4
	Rural	2,320	16	1	850	37			866	37	852	37	602	26
	Total	2,544	141	6	912	36	17	1	1,070	42	862	34	612	24
Ibajay	Urban	530	109	21	251	47			360	68	27	5	143	27
	Rural	6,947	89	1	4,311	62			4,400	63	504	7	2,043	29
	Total	7,477	198	3	4,562	61			4,760	64	531	7	2,186	29
Kalibo (Capital)	Urban	12,196	7,073	58	2,813	23	609	5	10,495	86	1,106	9	595	5
	Rural													
	Total	12,196	7,073	58	2,813	23	609	5	10,495	86	1,106	9	595	5
Lezo	Urban	416	43	10	241	58	107	26	391	94	6	1	19	5
	Rural	2,083	146	7	1,018	49	536	26	1,700	82	332	16	51	2
	Total	2,499	189	8	1,259	50	643	26	2,091	84	338	14	70	3
Libacao	Urban	529	205	39	153	29	65	12	423	80	106	20		
	Rural	3,786	87	2	1,076	28	1,033	27	2,196	58	1,195	32	395	10
	Total	4,315	292	7	1,229	28	1,098	25	2,619	61	1,301	30	395	9
Madalag	Urban	286	9	3	153	54	56	20	218	76	11	4	57	20
	Rural	2,759	7	0	852	31	498	18	1,357	49	943	34	459	17
	Total	3,044	16	1	1,005	33	554	18	1,575	52	954	31	516	17
Makato	Urban	558	20	4	436	78	93	17	549	98	7	1	2	0
	Rural	3,842	26	1	2,300	60	905	24	3,231	84	486	13	125	3
	Total	4,400	46	1	2,736	62	998	23	3,780	86	493	11	127	3
Malay	Urban	1,188	824	69	264	22			1,088	92	100	8		
	Rural	3,238	159	5	2,085	64			2,244	69	173	5	821	25
	Total	4,427	983	22	2,349	53			3,332	75	273	6	821	19
Malinao	Urban	316	25	8	235	74	18	6	278	88	16	5	22	7
	Rural	3,955	17	0	1,784	45	1,167	30	2,968	75	621	16	366	9
	Total	4,271	42	1	2,019	47	1,185	28	3,246	76	637	15	388	9
Nabas	Urban	778	340	44	356	46	42	5	738	95	11	1	29	4
	Rural	3,539	250	7	2,493	70	154	4	2,897	82	41	1	601	17
	Total	4,317	590	14	2,849	66	196	5	3,635	84	52	1	630	15
New Washington	Urban	967	16	2	742	77	57	6	815	84	91	9	61	6
	Rural	5,369	34	1	3,292	61	603	11	3,929	73	844	16	596	11
	Total	6,336	50	1	4,034	64	660	10	4,744	75	935	15	657	10
Numancia	Urban	580	236	41	265	46			501	86	48	8	31	5
	Rural	4,010	354	9	1,990	50	382	10	2,726	68	813	20	471	12
	Total	4,590	590	13	2,255	49	382	8	3,227	70	861	19	502	11
Tangalan	Urban	522	23	4	347	66	26	5	396	76	88	17	38	7
	Rural	2,604	47	2	983	38	665	26	1,695	65	527	20	382	15
	Total	3,127	70	2	1,330	43	691	22	2,091	67	615	20	420	13
Provincial Total	Urban	20,723	9,407	45	7,003	34	1,515	7	17,925	86	1,750	8	1,047	5
	Rural	62,558	1,448	2	30,955	49	8,378	13	40,781	65	12,503	20	9,276	15
	Total	83,281	10,855	13	37,958	46	9,893	12	58,706	70	14,253	17	10,323	12

Table 4.2.2 Number of Student and School Toilet Facilities by Municipality

Name of Municipality		Number of School	Number of Student	Number of Toilets		
				Sanitary	Unsanitary	Total
Altavas	Public	20	6,636	74		74
	Private	4	177			
	Total	24	6,813	74		74
Balete	Public	17	5,012	81		81
	Private	1	485	3		3
	Total	18	5,497	84		84
Banga	Public	31	4,373	117		117
	Private	3	354			
	Total	34	4,727	117		117
Batan	Public	20	7,278	46		46
	Private	1	215			
	Total	21	7,493	46		46
Buruanga	Public	15	3,545	21		21
	Private	1	123	2		2
	Total	16	3,668	23		23
Ibajay	Public	16	3,929	55	6	61
	Private	2	1,112	8		8
	Total	18	5,041	63	6	69
Kalibo (Capital)	Public	19	13,792	287		287
	Private	12	7,279	88		88
	Total	31	21,071	375		375
Lezo	Public	12	3,110	58	4	62
	Private	1	256			
	Total	13	3,366	58	4	62
Libacao	Public	21	5,705	83	5	88
	Private					
	Total	21	5,705	83	5	88
Madalag	Public	22	5,861	58	8	66
	Private	1	456			
	Total	23	6,317	58	8	66
Makato	Public	18	5,362	66		66
	Private	1	403	4		4
	Total	19	5,765	70		70
Malay	Public	14	4,989	68	8	76
	Private	2	67	4		4
	Total	16	5,056	72	8	80
Malinao	Public	26	5,700	96		96
	Private	1	329	3		3
	Total	27	6,029	99		99
Nabas	Public	23	6,655	80		80
	Private	1	552			
	Total	24	7,207	80		80
New Washington	Public	19	6,444	70		70
	Private					
	Total	19	6,444	70		70
Numancia	Public	12	4,402	26		26
	Private	1	472	45		45
	Total	13	4,874	71		71
Tangalan	Public	15	4,402	109		109
	Private			2		2
	Total	15	4,402	111		111
Provincial Total	Public	320	97,195	1,395	31	1,426
	Private	32	12,280	159		159
	Total	352	109,475	1,554	31	1,585

Table 4.2.3 Number of Public Toilets Facilities in 1998

Name of Municipality	Public Markets			Bus/Jeepney Terminals			Parks/Playground			Total Number of Toilets
	No. of Sanitary Toilets	No. of Unsanitary Toilets	Sub-total	No. of Sanitary Toilets	No. of Unsanitary Toilets	Sub-total	No. of Sanitary Toilets	No. of Unsanitary Toilets	Sub-total	
Altavas	4		4							4
Balete	2		2							2
Banga	4		4							4
Batan	2		2	2		2	2		2	6
Buruanga	2		2							2
Ibajay	2		2	2		2	2			4
Kalibo (Capital)	9		9	6		6	5		5	20
Lezo	2		2	2		2				4
Libacao	2		2							2
Madalag	2		2	2		2				4
Makaro	2		2							2
Malay	2	2	4				2		2	6
Malimao	2		2							2
Nabas	8		8							8
New Washington	4		4	2		2			2	6
Numancia	2		2	4		4			4	6
Tangalan	4		4							4
Provincial Total	55	2	57	20		20	9		9	86

