

The water quality analysis considered twelve (12) parameters and was performed in accordance with the Philippine Standard Method for Analysis of Air and Water.

(3) Results of Water Quality Analysis

Table 7.5.2 summarizes the results of analysis (refer to MWSS Central Laboratory Examination Results, 7.5 Data Report). Flow rates of Abra and Santa Maria rivers at the time of sampling were about 102 and 44m³/sec, respectively. The measured flow of Sta. Maria river was close to the its maximum recorded flow rate, while Abra river was flowing between its minimum and average discharges.

Table 7.5.2 Water Quality Analysis Results

Indices	Unit	Class "A" Water Quality Criteria for Fresh Surface Water	River		Remarks
			Abra	Sta. Maria	
Color	units	50	10.00	5.00	within standard
Turbidity	units	-	33.00	29.00	
Conductivity	us/cm	-	220.00	590.00	
pH		6.5-8.5	8.05	8.00	within standard
Alkalinity	mg/L	-	82.00	232.00	
Total Hardness as CaCO ₃	mg/L	400	90.00	208.00	within standard
Sulfate (SO ₄)	mg/L	200	27.00	79.00	within standard
Chloride (Cl)	mg/L	200	4.40	8.70	within standard
Iron (Fe)	mg/L	1.0	0.60	1.00	within standard
Manganese (Mn)	mg/L	0.5	0.04	0.03	within standard
Ammonia-Nitrogen	mg/L	-	0.88	0.95	
BOD	mg/L	5	74.08	111.10	excessive

The river water from the Abra and Santa Maria rivers basically meet the parameters for Class "A" fresh surface water. However, the computed Biochemical Oxygen Demand (BOD: assumed conversion rate is BOD/COD = 1/2) of the rivers exceeds the criteria for the same surface water classification. High BOD is assumed to be caused by presence of organic suspended solids, such as plants, trees and eroded surface soil.

7.6 Future Development Potential of Water Sources

The questionnaires collected from each municipalities show that there are 31,056 wells existing in the province, while 668 wells are recorded in the inventory made by NWRB (See Tables 7.11 and 7.3.1, Data Report). Despite the smaller number of wells included in NWRB data, they were used in the analysis since technical information are provided. Of the total 668 wells, 419 have complete information; depth, static water level and specific capacity; and are summarized in Table 7.6.1.

Table 7.6.1 Well Sources Information*

Municipality	Type	Number	Depth (m)			SWL (m)			Sp. Cap. (l/sec/m)		
			Ave.	Range		Ave.	Range		Ave.	Range	
Aldem	SW	2	16.70	15.20 - 18.20	11.45	10.70 - 12.20	1.00	0.97 - 1.03			
	DW	**	41.00	35.00 - 45.00	12.00	11.00 - 13.00	0.20	0.20 - 0.20			
Bantay	SW	1	16.77	16.77 - 16.77	1.52	1.52 - 1.52	1.03	1.03 - 1.03			
	DW	2	21.30	20.10 - 22.50	10.68	9.76 - 11.60	0.18	0.15 - 0.21			
Bantay	SW	20	13.43	8.50 - 19.80	4.80	2.74 - 9.76	0.85	0.39 - 2.10			
	DW	6	40.39	21.95 - 100.00	6.60	2.74 - 13.70	0.73	0.08 - 2.10			
Bugos	SW	2	15.25	13.72 - 16.77	5.64	4.57 - 6.71	1.55	1.03 - 2.07			
	DW	3	24.58	21.34 - 30.49	7.63	3.05 - 10.70	0.21	0.21 - 0.21			
Cabugao	SW	1	12.20	12.20 - 12.20	2.41	2.41 - 2.41	0.69	0.69 - 0.69			
	DW	8	31.27	21.34 - 46.00	7.78	4.27 - 12.80	0.37	0.01 - 2.37			
Candon	SW	14	11.12	3.05 - 16.77	2.42	0.00 - 4.57	0.99	0.21 - 2.97			
	DW	3	27.81	25.00 - 31.60	8.14	6.10 - 10.70	0.16	0.03 - 0.30			
Caoyan	SW	19	9.30	5.50 - 18.30	2.70	1.22 - 4.30	1.06	0.29 - 2.60			
	DW	2	38.40	22.00 - 54.80	3.79	3.00 - 4.57	0.66	0.63 - 0.69			
Cervantes	SW	***									
	DW	***									
Galmuyod	SW	2	14.63	14.02 - 15.24	6.10	4.83 - 7.32	0.51	0.20 - 0.82			
	DW	**	41.00	35.00 - 45.00	12.00	11.00 - 13.00	0.20	0.20 - 0.20			
Gregorio del Pilar	SW	**	17.00	15.00 - 18.00	11.00	10.00 - 12.00	1.00	1.00 - 1.00			
	DW	**	41.00	35.00 - 45.00	12.00	11.00 - 13.00	0.20	0.20 - 0.20			
Lalidda	SW	2	15.86	11.89 - 19.82	5.95	5.79 - 6.10	0.66	0.34 - 0.97			
	DW	**	41.00	35.00 - 45.00	12.00	11.00 - 13.00	0.20	0.20 - 0.20			
Magsingal	SW	7	17.37	14.60 - 19.82	6.64	2.74 - 14.60	0.91	0.08 - 2.10			
	DW	4	25.84	23.17 - 28.96	6.63	6.10 - 7.32	0.07	0.03 - 0.14			
Nagbukel	SW	32	11.23	6.71 - 19.51	3.40	1.22 - 12.20	0.76	0.10 - 4.20			
	DW	4	35.19	28.00 - 50.30	7.93	3.66 - 10.67	0.18	0.03 - 0.30			
Navocin	SW	***									
	DW	***									
Quirino	SW	***									
	DW	***									
Safedo	SW	1	14.63	14.63 - 14.63	11.28	11.28 - 11.28	1.03	1.03 - 1.03			
	DW	2	24.55	23.48 - 25.61	13.87	12.80 - 14.94	0.38	0.34 - 0.41			
San Emilio	SW	**	17.00	15.00 - 18.00	11.00	10.00 - 12.00	1.00	1.00 - 1.00			
	DW	**	41.00	35.00 - 45.00	12.00	11.00 - 13.00	0.20	0.20 - 0.20			
San Esteban	SW	12	13.76	8.54 - 18.60	3.43	1.22 - 7.32	1.27	0.52 - 2.59			
	DW	1	21.95	21.95 - 21.95	3.05	3.05 - 3.05	0.52	0.52 - 0.52			
San Ildefonso	SW	8	13.43	11.58 - 17.38	3.39	1.80 - 5.18	1.16	0.47 - 2.53			
	DW	1	27.43	27.43 - 27.43	7.62	7.62 - 7.62	0.50	0.50 - 0.50			
San Juan	SW	11	11.27	3.90 - 18.29	3.74	0.91 - 7.62	0.90	0.21 - 2.53			
	DW	9	25.78	21.30 - 32.01	4.81	3.05 - 8.23	1.21	0.09 - 4.20			
San Vicente	SW	15	9.38	5.18 - 14.63	2.33	0.00 - 3.40	0.95	0.41 - 1.74			
	DW	**	100.00	100.00 - 100.00	3.00	3.00 - 3.00	0.76	0.76 - 0.76			
Santa	SW	9	8.09	2.74 - 17.68	2.57	0.91 - 7.32	1.34	0.17 - 2.10			
	DW	18	28.89	20.73 - 40.24	14.59	4.88 - 24.10	0.84	0.05 - 2.10			
Santa Catalina	SW	15	10.17	5.49 - 18.30	2.27	1.20 - 3.35	1.02	0.09 - 3.45			
	DW	1	100.00	100.00 - 100.00	3.00	3.00 - 3.00	0.76	0.76 - 0.76			
Santa Cruz	SW	28	12.47	7.93 - 18.90	3.70	0.91 - 7.62	0.90	0.08 - 2.10			
	DW	5	34.99	22.80 - 60.98	5.92	4.27 - 7.32	0.13	0.03 - 0.23			
Santa Lucia	SW	13	10.96	5.80 - 18.29	2.50	0.91 - 9.15	0.66	0.17 - 2.11			
	DW	2	24.65	22.80 - 26.50	6.41	3.66 - 9.15	0.58	0.13 - 1.03			
Santa Maria	SW	15	11.98	7.30 - 19.57	3.41	0.00 - 13.41	1.33	0.12 - 4.57			
	DW	6	45.01	20.73 - 132.93	1.93	1.22 - 2.44	0.82	0.08 - 2.90			
Santiago	SW	9	14.87	6.70 - 19.87	3.23	2.24 - 6.10	0.49	0.03 - 1.03			
	DW	2	28.79	23.42 - 34.15	6.86	1.52 - 12.20	0.59	0.14 - 1.03			
Santo Domingo	SW	13	11.49	6.40 - 19.82	3.40	0.00 - 6.71	1.09	0.15 - 2.59			
	DW	3	27.81	20.43 - 32.01	7.82	3.05 - 15.24	1.13	0.26 - 2.10			
Sigay	SW	**	17.00	15.00 - 18.00	11.00	10.00 - 12.00	1.00	1.00 - 1.00			
	DW	**	41.00	35.00 - 45.00	12.00	11.00 - 13.00	0.20	0.20 - 0.20			
Sinit	SW	11	13.15	7.62 - 18.29	3.91	1.83 - 9.45	0.54	0.06 - 1.03			
	DW	4	25.12	21.30 - 29.50	4.69	1.37 - 7.62	1.52	0.17 - 4.14			
Sugpon	SW	**	17.00	15.00 - 18.00	11.00	10.00 - 12.00	1.00	1.00 - 1.00			
	DW	**	41.00	35.00 - 45.00	12.00	11.00 - 13.00	0.20	0.20 - 0.20			
Suyo	SW	**	17.00	15.00 - 18.00	11.00	10.00 - 12.00	1.00	1.00 - 1.00			
	DW	1	22.26	22.26 - 22.26	10.06	10.06 - 10.06	0.36	0.36 - 0.36			
Tagudin	SW	7	12.31	6.40 - 18.90	4.44	1.83 - 11.28	0.92	0.07 - 1.50			
	DW	5	26.77	20.43 - 36.59	9.27	5.18 - 17.07	0.44	0.04 - 0.70			
Vigan	SW	43	10.36	0.00 - 19.82	3.22	0.61 - 6.10	1.56	0.11 - 7.57			
	DW	15	37.24	20.42 - 100.00	5.01	1.52 - 13.70	1.83	0.07 - 12.60			
Provincial Total	SW	312	11.68	2.74 - 19.82	3.48	0.61 - 14.60	1.03	0.03 - 7.57			
	DW	107	31.90	20.10 - 132.93	7.74	1.22 - 24.10	0.82	0.01 - 12.60			

Source: NWRB Well Inventory Database.

Notes:

*Based on the data from Feasibility Study of WDs, LWUA and DWII (Questionable data were disregarded).

**Estimated figures from the hydrogeological continuity of the aquifer.

***No related technical information available.

Legend

SWL=Static Water Level
SW=Shallow Well

Sp. Cap.=Specific Capacity
DW=Deep Well

Ave.=Average

Considering the well information, the most productive wells are those having depth ranging from 4 to 60 m and from 80 to 140 m. Wells bottoming between 60 and 80 m are notably having low yields. The good yielding wells have static water level varying from 1 to 21mbgl and specific capacity of 0.5 to 12.6 l/sec/m of drawdown.

Based on the hydraulic characteristics and distribution of wells in Ilocos Sur, good aquifers occur in the Recent sediments that extensively cover the western coastal and alluvial plains from Tagudin to Sinait. The aquifers in the Pliocene to Pleistocene rocks distributed in the northwestern section from Sto. Domingo to Sinait, which are also tapped by some of the wells, are expected to have good to moderate yields. Moderate yielding aquifers are anticipated in the Miocene limestone and the upper fractured portions of the older sediments.

As indicated in Groundwater Investigation of NWRB and water supply improvement studies for Metro Vigan and Tagudin water districts, areas with high salinity problem are concentrated in western coastal area from Candon to Sto. Domingo. These areas are contiguous municipalities that have high population density and have more number of shallow wells. In Tagudin, high fluoride concentration was determined in some wells. The fluoride is probably derived from thermal water. This can be correlated with relatively high water temperature in the wells observed.

As alternative water sources, the untapped springs identified can be developed for future use. These are the most reliable sources of water supply in the area considered as difficult for well development, particularly in San Emilio, Quirino, Gregorio del Pilar and Cervantes. The major faults dissecting the province provide interconnected fractures in the various rock units favorable for spring occurrences.

The detailed hydrogeological characteristics of each municipality are summarized in Table 7.6.2, while individual well locations with technical information are shown in Figure 7.6.1, Data Report. For water supply planning purpose, standard well specifications for each municipality are presented in Table 7.6.3. The design of wells for implementation will be based on the results of detailed investigations that must be made prior to construction.

The depth, static water level and specific capacity specified in Table 7.6.3 are established using the well information from NWRB, pertinent studies from other agencies and the hydrogeological assessment presented in Table 7.6.2. The depth of wells in each municipality is estimated based on the inferred depth of potential aquifers approximated from the available data on existing wells. The static water level and specific capacity are the averages of existing wells employed in the analysis. For municipalities without any well data, the well parameters are made similar to adjoining towns, provided they have similar hydrogeologic features. It should be noted that for municipalities categorized as deep well areas, specifications for shallow wells are indicated since such type of well is still possible for the locality.

Table 7.6.2 Hydrogeological Description by Municipality

MUNICIPALITY	TOPOGRAPHY	EXISTING CONDITIONS											DATA INTERPRETATION					
		GEOLOGIC UNITS (%)			WELL INFORMATIONS				SPRINGS				GROUND WATER AVAILABILITY (%)			ESTIMATED AQUIFER DEPTH RANGE (mbsd)	AQUIFER FORMATION	OTHERS
		R	N1	N2	N3	AVE. DEPTH (m)	SW	DW	MAN. (AVE.) SP. CAP. (l/s/m)	TAPPED NO.	AVE. Q. (l/s)	UNTAPPED NO.	AVE. Q. (l/s)	SW	DW			
		0	0	0	0	12	12	12	0.97-1.03 (1.00)	15	-	15	-	0	100	0		
Alitern	mountainous	2	0	0	98	0	15-18	35-45	0.97-1.03 (1.00)	15	-	15	-	0	100	0	Alluvium / Miocene sediments	Potential aquifers can be found in the valley flat of Bukun and Ambrayan rivers with capacity of 0.5-1.5 l/s/m. No water quality information. Largely spring area.
Banayoyo	undulating to hilly	10	0	70	20	0	17	20-23	1.03 (1.03)	0	0	1	0.3	0	100	0	Alluvium / Miocene sediments	Potential aquifers are expected in the footslope and alluvial plain on the west with estimated capacity of 1.5-2.5 l/s/m. No water quality information.
Bantay	flat to hilly	80	0	0	10	10	9-20	22-100	0.39-2.10 (0.85)	1	18.0	-	-	0	90	10	Alluvium	Potential aquifer is expected in the broad alluvial plain on the west with estimated capacity of 1.0-2.5 l/s/m.
Burgos	undulating to hilly	10	0	40	50	0	14-17	22-31	1.03-2.07 (1.55)	6	0.7	15	3.0	0	100	0	Alluvium / Miocene sediments	Potential aquifers are expected in the footslope and alluvial plain of Santa Maria river on the west with estimated capacity of 1.0-1.5 l/s/m. No water quality information.
Cabugao	flat to hilly	50	50	0	0	0	13	22-46	0.69-2.37 (0.69)	4	2.2	-	-	0	100	0	Alluvium / Plio-Pleistocene rocks	Potential aquifers are expected in the alluvial plain and in the small Plio-Pleistocene hills on the west with estimated capacity of 2.0-2.5 l/s/m. No water quality information.
Candon	flat to hilly	55	45	0	0	0	3-17	25-32	0.21-2.97 (0.99)	4	4.2	-	-	0	100	0	Alluvium / Miocene sediments	Potential aquifers occur in the footslope and alluvial plain on the west with estimated capacity of 1.0-2.5 l/s/m. No water quality information.
Carosyan	flat	100	0	0	0	0	6-19	22-55	0.29-2.60 (1.06)	3	0	0	-	0	100	0	Alluvium / Plio-Pleistocene rocks	Potential aquifers are expected in the broad alluvial plain on the western low land with estimated capacity of 2.5 l/s/m. No water quality information.
Cerritos	undulating to mountainous	5	0	0	95	60	-	-	-	40	-	-	-	0	40	60	Alluvium / Miocene sediments	Limited aquifer can be found in the flood plain of the Abra river and enclosed valley of Malaya river with capacity of 0.5-1.0 l/s/m. No water quality information. Largely spring area.

Table 7.6.2 Hydrogeological Description by Municipality (Cont'd.)

MUNICIPALITY	EXISTING CONDITIONS														DATA INTERPRETATION								
	TOPOGRAPHY	GEOLOGIC UNITS (%)						WELL INFORMATIONS				SPRINGS				GROUND WATER AVAILABILITY (%)			AQUIFER FORMATION	ESTIMATED AQUIFER DEPTH RANGE (mbrl)	OTHERS		
		R	N3	N2	N1	O	DEPTH (m)	SW	DW	SWL (mbrl)	AVE. (m)	MAX. (AVE.) (m)	NO.	TAPPED	UNTAPPED	NO.	AVE. Q (l/s)	SW				DW	DF
Calimayod	5	0	50	45	0	14-16	35-45	6	12	0.20-0.21 (0.20)	0.82 (0.51)	6	0	2	0.2	100	0	0	0	6-40	Potential aquifers are expected in the flood plain of Candon river valley and in the alluvial fan on the southwest with estimated capacity of 0.5-2.5 l/s/m. No water quality information.		
C. del Pilar	0	0	0	90	10	15-18	35-45	11	12	1.00-1.00 (1.00)	1.00 (0.20)	19	1.3	2	12.1	90	0	0	10	11-40	Limited aquifer is expected in the Buaya river and tributaries valleys and in the fractured and weathered zone with estimated capacity of 0.5-1.0 l/s/m. No water quality information. Largely spring area.		
Lididda	5	0	15	80	0	12-20	35-45	6	12	0.34-0.97 (0.66)	0.20 (0.20)	11	-	1	0.7	100	0	0	0	6-40	Potential aquifers are expected in the valley flat of Santa Maria river with estimated capacity of 0.5-1.5 l/s/m. No water quality information. Largely spring area.		
Magsungul	55	15	0	20	10	15-20	24-29	7	7	0.08-2.10 (0.93)	0.03-0.14 (0.07)	0	0	-	-	90	0	0	10	4-60/80-120	Potential aquifers are expected in the footslope and alluvial plain on the west with estimated capacity of 1.0 to 2.5 l/s/m. No water quality information.		
Nagbukel	0	0	0	100	0	7-20	28-51	3	8	0.10-4.20 (0.76)	0.03-0.30 (0.18)	3	0.3	6	0.6	100	0	0	0	7-40	Potential aquifers occur in the footslope and alluvial plain on the southwest with estimated capacity of 1.0 to 2.5 l/s/m. No water quality information. Largely spring area.		
Narvaean	50	0	0	50	0	7-20	28-51	-	-	0.10-4.20	0.03-0.30	-	-	-	-	100	0	0	0	4-40	Potential aquifers are expected in the footslope and broad alluvial plain on the southwest half with estimated capacity of 1.0-2.5 l/s/m. No water quality information.		
Quirino	0	0	0	30	70	-	-	-	-	-	-	14	1.1	14	2.1	30	0	0	70	10-40	Largely spring area. potential aquifers for wells are possible in the valley flat of Abra river with estimated sp. cap of 0.5-1.0 l/s/m.		

Table 7.6.2 Hydrogeological Description by Municipality (Cont'd.)

MUNICIPALITY	TOPOGRAPHY	EXISTING CONDITIONS											DATA INTERPRETATION									
		GEOLOGIC UNITS (%)				WELL INFORMATIONS				SPRINGS			GROUND WATER AVAILABILITY (%)	AQUIFER FORMATION	ESTIMATED AQUIFER DEPTH RANGE (mbsgl)	OTHERS						
		R	N1	N2	N3	DEPTH (m)	SW	DW	SW	AVE. SWL (mbsgl)	AVE. DWL (AVE.)	TAPPED					UNTAPPED					
							SW	DW	SW	SP. CAP. (USM)	NO.	AVE. Q (l/s)	NO.	AVE. Q (l/s)								
Salcedo	undulating to mountainous	20	0	20	60	0	15	24-26	11	14	1.03-1.03 (1.03)	0.34-0.41 (0.38)	15	-	0	100	0	Alluvium / Miocene sediments	11-40	Potential aquifers are expected in the footslope and in the valley flat of Buaya river, particularly on the western portion with estimated capacity of 0.5-2.5 l/s/m. No water quality information. Numerous springs occur in the greater eastern portion.		
San Emilio	hilly to mountainous	0	0	0	90	10	15-18	35-45	11	12	1.0-1.0 (1.0)	0.20-0.20 (0.20)	9	-	0	90	10	Alluvium / Miocene sediments	10-40	Largely spring area, potential aquifers for wells are possible in the valley flat of Barayoc, Dayocan and Tlagan rivers with estimated sp.cap of 0.5-1.0 l/s/m.		
San Esteban	flat to hilly	50	0	50	0	0	9-19	22	3	3	0.52-2.59 (1.27)	0.52-0.52 (0.52)	0	-	0	100	0	Alluvium / Miocene sediments	4-40	Potential aquifers are expected in the footslope and broad alluvial plain on the north with estimated capacity of 2.5 l/s/m. No water quality information.		
San Isidoro	flat	100	0	0	0	0	35-51	28	3	8	0.47-2.53 (1.16)	0.52-0.52 (0.52)	0	-	0	100	0	Alluvium / Plio-Pleistocene rocks	3-40/80-120	Potential aquifers are expected in the footslope and alluvial plain on the west with estimated capacity of 1.0-2.5 l/s/m for the two aquifer, respectively. No water quality information.		
San Juan	flat to hilly	55	45	0	0	0	4-19	22-32	4	5	0.21-2.53 (0.90)	0.09-4.20 (1.21)	2	0.6	3	0.4	0	100	0	Alluvium / Plio-Pleistocene rocks	4-60/80-120	Potential aquifers are expected in the footslope and alluvial plain on the west with estimated capacity of 2.0-2.5 l/s/m for the two inferred aquifer. No water quality information.
San Vicente	flat	100	0	0	0	0	6-15	100	2	3	0.41-1.74 (0.95)	0.76-0.76 (0.76)	0	-	0	100	0	Alluvium / Plio-Pleistocene rocks	2-60	Potential aquifers are expected in the alluvial plain and flat with estimated capacity of 2.5 l/s/m. No water quality information.		
Santa	flat to mountainous	50	0	0	0	0	3-18	21-41	3	15	0.17-2.10 (1.34)	0.05-2.10 (0.84)	1	35	1	0.5	0	50	50	Alluvium	4-60/80-120	Potential aquifers are expected in the footslope and alluvial plain on the west with estimated capacity of 1.0 and 2.5 l/s/m for the two aquifer, respectively. No water quality information.

Table 7.6.2 Hydrogeological Description by Municipality (Cont'd.)

MUNICIPALITY	TOPOGRAPHY	EXISTING CONDITIONS												DATA INTERPRETATION								
		GEOLOGIC UNITS (%)			WELL INFORMATIONS						SPRINGS			GROUND WATER AVAILABILITY			AQUIFER FORMATION	ESTIMATED AQUIFER DEPTH RANGE (m)	OTHERS			
		R	N3	N2	N1	O	DEPTH (m)	SW	DW	SW	DW	SW	DW	SW	DW	DF				SW	DW	DF
Santa Catalina	flat	100	0	0	0	0	6-19	10	2	3	0.09-3.45 (1.02)	0.76-0.76 (0.76)	0	0	-	0	100	0	0	Alluvium / Plio-Pleistocene rocks	2-60	Potential aquifers are expected in the alluvial plain and tidal flat with estimated capacity of 2.5 l/s/m. No water quality information.
Santa Cruz	flat to mountainous	20	0	50	30	0	8-19	23-61	4	6	0.08-2.10 (0.90)	0.03-0.23 (0.13)	6	1.1	-	0	100	0	0	Alluvium / Miocene sediments	4-40	Potential aquifers occur in the footslope and alluvial plain on the west with approximate capacity of 1.0-2.5 l/s/m. No water quality information.
Santa Lucia	flat to hilly	50	0	50	0	0	6-19	23-27	3	7	0.17-2.11 (0.66)	0.13-1.03 (0.58)	3	0.7	-	0	100	0	0	Alluvium / Miocene sediments	3-40	Potential aquifers are expected in the footslope and alluvial plain on the western and southern portion with estimated capacity of 1.0-2.5 l/s/m. No water quality information.
Santa Maria	flat to hilly	80	0	0	20	0	8-20	21-133	3	2	0.12-4.57 (1.33)	0.08-2.96 (0.82)	0	0	-	0	100	0	0	Alluvium / Miocene sediments	3-40	Potential aquifers are expected in the broad alluvial plain and footslope with estimated capacity of 1.0-2.5 l/s/m. No water quality information.
Santiago	undulating to hilly	20	0	80	0	0	7-20	24-35	3	7	0.03-1.03 (0.49)	0.14-1.03 (0.59)	2	-	3	0.7	100	0	0	Alluvium / Miocene sediments	3-40	Potential aquifers are limited in the narrow plain and footslope on the west with estimated capacity of 1.0-2.5 l/s/m. No water quality information.
Santo Domingo	flat to hilly	60	15	0	20	5	7-20	21-32	3	8	0.15-2.59 (1.09)	0.26-2.10 (1.13)	2	0.6	-	0	95	5	0	Alluvium / Plio-Pleistocene rocks	3-60/80-120	Potential aquifers are expected in the broad alluvial plain and footslope with estimated capacity of 1.0-2.0 l/s/m. No water quality information.
Sigay	mountainous	0	0	0	50	50	15-18	35-45	11	12	1.00-1.00 (1.00)	0.20-0.20 (0.20)	7	0.7	-	0	50	50	0	Alluvium	11-40	Largely spring area, potential aquifers for wells are possible in the valley flat of Padaguit river and in the enclosed valley in Tamcang with spacing of approximately 0.5-1.0 l/s/m.
Sinat	flat to hilly	30	70	0	0	0	8-19	22-30	4	5	0.06-1.03 (0.54)	0.17-4.14 (1.52)	0	0	-	0	100	0	0	Alluvium / Plio-Pleistocene rocks	4-60/80-120	Potential aquifers are expected in the alluvial plain and in the small Plio-Pleistocene hills with estimated capacity of 2.0-2.5 l/s/m. No water quality information.

Table 7.6.2 Hydrogeological Description by Municipality (Cont'd.)

MUNICIPALITY	EXISTING CONDITIONS														DATA INTERPRETATION							
	TOPOGRAPHY	GEOLOGIC UNITS (%)						WELL INFORMATIONS						GROUND WATER AVAILABILITY			AQUIFER FORMATION	ESTIMATED AQUIFER DEPTH RANGE (mbgl)	OTHERS			
		R			N ₁			DEPTH (m)	AVE. SWL (mbgl)	MAX. (AVE.) SP. CAP. (l/m)	TAPPED		UNTAPPED		SW (%)	DW (%)				DF		
		N ₃	N ₂	N ₁	O	SW	DW				NO.	AVE. Q (l/s)	NO.	AVE. Q (l/s)								
Sugpon	2	0	0	98	0	0	15-18	35-45	11	12	1.00-1.00	0.20-0.20	9	1.0	6	0.6	0	100	0	Alluvium / Miocene sediments	11-40	Potential aquifers can be found in the Ambarayan river valley with capacity of 0.5-1.5 l/s/m. No water quality information. Largely spring area.
Suyo	0	15	0	75	0	10	15-18	23	11	1.00-1.00	0.36-0.36	16	1.0	5	0.4	0	90	10	Alluvium / Miocene sediments	11-40	Potential aquifer can be found in the valley flat of Chico river with estimated capacity of 0.5-1.0 l/s/m. No water quality information. Largely spring area.	
Tagudin	20	80	0	0	0	0	7-19	21-37	4	9	0.07-1.56	0.04-0.52	3	0.7	0	0.0	0	100	0	Alluvium / Plio-Pleistocene rocks	4-40/80-170	Potential aquifers are expected in the alluvial plain and probably in the underlying Plio-Pleistocene rocks with estimated capacity of 1.0-2.5 l/s/m. Some TVD wells in Poblacion have high Cl, F & Fe.
Vigan	100	0	0	0	0	0	20	21-100	3	5	0.11-7.57	0.07-12.60	0	0	0	0.0	0	100	0	Alluvium / Plio-Pleistocene rocks	3-60	Potential aquifers exist in the broad alluvial plain and probably in the low relief hills with estimated capacity of 2.5 l/s/m. Some MVWD wells have high Cl, Ca, Mg content.

Note:
R = Recent Deposits
N₃ = Plio-Pleistocene Rocks
N₂ = Late Miocene Rocks
N₁ = Early Miocene Rocks
O = Rocks Older than Miocene
SW = Shallow Well Area
DW = Deep Well
DF = Difficult Area
Q = Discharge/Flow Rate
mbgl = meter below ground level
SWL = Static Water Level
l/s/m = liter/second/meter (draw-down)
SP, CAP. = Specific Capacity

Table 7.6.3 Standard Specification of Wells by Municipality*

Municipality	Type	Type	Proportion** (%)	Standard Specification			Remarks
				Depth Range (m)	SWL (m)	Specific Capacity (l/sec/m)	
Alilem	Rural	SW	0	15 < D < 20	10	0.5	
		DW	90	20 < D < 40	15	0.5	
	Urban	SW	0	15 < D < 20	10	1.5	
		DW	100	20 < D < 40	15	1.5	
Banayoyo	Rural	SW	0	10 < D < 20	5	1.0	
		DW	100	20 < D < 40	10	1.0	
	Urban	SW	0	10 < D < 20	5	2.5	
		DW	100	20 < D < 40	10	2.5	
Bantay	Rural	SW	0	10 < D < 20	5	1.0	
		DW	65	20 < D < 60	10	1.0	
	Urban	SW	0	10 < D < 20	5	2.5	
		DW	100	20 < D < 60	10	2.5	
Burgos	Rural	SW	0	10 < D < 20	5	1.0	1 untapped spring with potential discharge of 3.0 l/sec
		DW	100	20 < D < 40	10	1.0	
	Urban	SW	0	10 < D < 20	5	1.5	
		DW	100	20 < D < 40	10	1.5	
Cabogao	Rural	SW	0	10 < D < 20	5	2.0	
		DW	100	20 < D < 60	10	2.0	
	Urban	SW	0	10 < D < 20	5	2.5	
		DW	100	20 < D < 60	10	2.5	
Candon	Rural	SW	0	10 < D < 20	5	1.0	
		DW	100	20 < D < 40	10	1.0	
	Urban	SW	0	10 < D < 20	5	2.5	
		DW	100	20 < D < 40	10	2.5	
Caoyan	Rural	SW	0	10 < D < 20	2	2.0	
		DW	100	20 < D < 60	5	2.0	
	Urban	SW	0	10 < D < 20	2	2.5	
		DW	100	20 < D < 60	5	2.5	
Cervantes	Rural	SW	0	15 < D < 20	5	0.5	
		DW	40	20 < D < 40	10	0.5	
	Urban	SW	0	15 < D < 20	5	1.0	
		DW	95	20 < D < 40	10	1.0	
Galimuyod	Rural	SW	0	10 < D < 20	5	1.0	
		DW	100	20 < D < 40	10	1.0	
	Urban	SW	0	10 < D < 20	5	2.5	
		DW	100	20 < D < 40	10	2.5	
G. del Pilar	Rural	SW	0	15 < D < 20	10	0.5	1 untapped springs with potential discharge of 1.50 l/sec
		DW	90	20 < D < 40	15	0.5	
	Urban	SW	0	15 < D < 20	10	1.0	
		DW	100	20 < D < 40	15	1.0	
Lidlidda	Rural	SW	0	10 < D < 20	5	0.5	
		DW	100	20 < D < 40	10	0.5	
	Urban	SW	0	10 < D < 20	5	1.5	
		DW	100	20 < D < 40	10	1.5	
Magsingal	Rural	SW	0	10 < D < 20	5	1.0	1 untapped springs with potential discharge of 3.0 l/sec
		DW	85	20 < D < 60	5	1.0	
	Urban	SW	0	10 < D < 20	5	2.5	
		DW	100	20 < D < 60	5	2.5	
Nagbukel	Rural	SW	0	10 < D < 20	5	1.0	1 untapped springs with potential discharge of 0.5 l/sec
		DW	100	20 < D < 40	10	1.0	
	Urban	SW	0	10 < D < 20	5	2.5	
		DW	100	20 < D < 40	10	2.5	
Narvacan	Rural	SW	0	10 < D < 20	5	1.0	
		DW	90	20 < D < 40	10	1.0	
	Urban	SW	0	10 < D < 20	5	2.5	

Table 7.6.3 Standard Specification of Wells by Municipality* (Cont'd.)

Municipality	Type	Type	Proportion** (%)	Standard Specification			Remarks
				Depth Range (m)	SWL (m)	Specific Capacity (l/sec/m)	
Quirino	Rural	DW	100	20 < D < 40	10	2.5	3 untapped springs with potential discharges ranging from 2.33 to 20.33 l/sec
		SW	0	15 < D < 20	10	0.5	
	Urban	DW	40	20 < D < 40	15	0.5	
		SW	0	15 < D < 20	10	1.0	
Salcedo	Rural	DW	95	20 < D < 40	15	1.0	
		SW	0	15 < D < 20	10	1.0	
	Urban	DW	100	20 < D < 40	15	2.5	
		SW	0	15 < D < 20	10	2.5	
San Emilio	Rural	DW	100	20 < D < 40	15	0.5	
		SW	0	15 < D < 20	10	0.5	
	Urban	DW	100	20 < D < 40	15	1.0	
		SW	0	15 < D < 20	10	1.0	
San Esteban	Rural	DW	-	-	-	-	
		SW	-	-	-	-	
	Urban	DW	0	10 < D < 20	5	2.5	
		SW	100	20 < D < 40	5	2.5	
San Hildelfonso	Rural	DW	100	20 < D < 60	10	1.0	
		SW	0	10 < D < 20	5	1.0	
	Urban	DW	100	20 < D < 60	10	2.5	
		SW	0	10 < D < 20	5	2.5	
San Juan	Rural	DW	100	20 < D < 60	10	2.0	
		SW	0	10 < D < 20	5	2.0	
	Urban	DW	90	20 < D < 60	10	2.5	
		SW	0	10 < D < 20	5	2.5	
San Vicente	Rural	DW	-	-	-	-	
		SW	-	-	-	-	
	Urban	DW	100	20 < D < 60	5	2.5	
		SW	0	10 < D < 20	2	2.5	
Santa	Rural	DW	50	20 < D < 60	10	1.0	1 untapped spring with potential discharge of 2.0 l/sec
		SW	0	10 < D < 20	5	2.5	
	Urban	DW	75	20 < D < 60	10	2.5	
		SW	0	10 < D < 20	5	2.5	
Santa Catalina	Rural	DW	-	-	-	-	
		SW	-	-	-	-	
	Urban	DW	100	20 < D < 60	5	2.5	
		SW	0	10 < D < 20	5	2.5	
Santa Cruz	Rural	DW	100	20 < D < 40	10	1.0	
		SW	0	10 < D < 20	5	1.0	
	Urban	DW	100	20 < D < 40	5	2.5	
		SW	0	10 < D < 20	5	2.5	
Santa Lucia	Rural	DW	100	20 < D < 40	10	1.0	
		SW	0	10 < D < 20	5	1.0	
	Urban	DW	100	20 < D < 40	10	2.5	
		SW	0	10 < D < 20	2	2.5	
Santa Maria	Rural	DW	100	20 < D < 40	10	1.0	
		SW	0	10 < D < 20	5	1.0	
	Urban	DW	0	20 < D < 40	5	2.5	
		SW	0	10 < D < 20	5	2.5	
Santiago	Rural	DW	100	20 < D < 40	10	1.0	
		SW	0	10 < D < 20	5	1.0	
	Urban	DW	100	20 < D < 40	5	2.5	
		SW	0	10 < D < 20	5	2.5	
Santo Domingo	Rural	DW	100	20 < D < 60	10	1.0	
		SW	0	10 < D < 20	5	1.0	
	Urban	DW	100	20 < D < 60	10	2.5	
		SW	0	10 < D < 20	5	2.5	

Table 7.6.3 Standard Specification of Wells by Municipality* (Cont'd.)

Municipality	Type	Proportion** (%)	Standard Specification			Remarks
			Depth Range (m)	SWL (m)	Specific Capacity (l/sec/m)	
Sigay	Rural	SW	0	15 < D < 20	10	0.5
		DW	55	20 < D < 40	15	0.5
	Urban	SW	0	15 < D < 20	10	1.0
		DW	70	20 < D < 40	15	1.0
Sinait	Rural	SW	0	10 < D < 20	5	2.0
		DW	100	20 < D < 60	5	2.0
	Urban	SW	0	10 < D < 20	5	2.5
		DW	100	20 < D < 60	5	2.5
Sugpon	Rural	SW	0	15 < D < 20	10	0.5
		DW	100	20 < D < 40	15	0.5
	Urban	SW	0	15 < D < 20	10	1.5
		DW	100	20 < D < 40	15	1.5
Suyo	Rural	SW	0	15 < D < 20	10	0.5
		DW	85	20 < D < 40	10	0.5
	Urban	SW	0	15 < D < 20	10	1.0
		DW	100	20 < D < 40	10	1.0
Tagudin	Rural	SW	0	10 < D < 20	5	1.0
		DW	100	20 < D < 40	10	1.0
	Urban	SW	0	10 < D < 20	5	2.5
		DW	100	20 < D < 40	5	2.5
Vigan (Capital)	Rural	SW	-	-	-	-
		DW	-	-	-	-
	Urban	SW	0	10 < D < 20	5	2.5
		DW	100	20 < D < 60	5	2.5

**B. FUTURE REQUIREMENTS AND
DEVELOPMENT PLAN**

**B. FUTURE REQUIREMENTS AND
DEVELOPMENT PLAN**

8. FUTURE REQUIREMENTS IN WATER SUPPLY AND SANITATION IMPROVEMENT

8.2 Targets of Provincial Sector Plan

Table 8.2.1 Estimation of Base Year Service Coverage of Water Supply

Municipalities	Type	Population (1995)	Population Served by 1995 Facilities				Pop. Served by Planned/Ongoing Projects				Pop. Served in the Base Year (1995)				
			Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	% Coverage
Ablen	Urban	1,411	0	0	905	905	0	0	0	0	0	0	905	905	64
	Rural	4,307	0	0	1,758	1,758	0	0	0	0	0	0	1,758	1,758	41
	Total	5,718	0	0	2,663	2,663	0	0	0	0	0	0	2,663	2,663	47
Banayoyo	Urban	818	0	0	685	685	0	0	0	0	0	0	685	685	84
	Rural	5,510	0	0	4,629	4,629	0	0	0	0	0	0	4,629	4,629	84
	Total	6,328	0	0	5,314	5,314	0	0	0	0	0	0	5,314	5,314	84
Bantay	Urban	10,098	1,150	0	5,945	7,095	0	0	75	75	1,150	0	6,020	7,170	71
	Rural	18,037	3,750	0	9,311	13,061	0	0	150	150	3,750	0	9,461	13,211	73
	Total	28,135	4,900	0	15,256	20,156	0	0	225	225	4,900	0	15,481	20,381	72
Burgos	Urban	1,494	0	0	899	899	0	0	0	0	0	0	899	899	60
	Rural	8,793	0	975	4,763	5,738	0	0	0	0	0	975	4,763	5,738	65
	Total	10,287	0	975	5,662	6,637	0	0	0	0	0	975	5,662	6,637	65
Cahugao	Urban	7,904	850	0	4,236	5,086	0	0	2,100	2,100	850	0	6,336	7,186	91
	Rural	22,091	1,710	0	14,679	16,389	0	0	2,775	2,775	1,710	0	17,454	19,164	87
	Total	29,995	2,560	0	18,915	21,475	0	0	4,875	4,875	2,560	0	23,790	26,350	88
Candon	Urban	7,229	0	0	4,560	4,560	0	0	0	0	0	0	4,560	4,560	63
	Rural	40,042	0	550	24,796	25,346	0	0	0	0	0	550	24,796	25,346	63
	Total	47,271	0	550	29,356	29,906	0	0	0	0	0	550	29,356	29,906	63
Cansuan	Urban	6,787	630	0	3,379	4,009	0	0	900	900	630	0	4,279	4,909	72
	Rural	9,700	1,700	0	4,167	5,867	0	0	0	0	1,700	0	4,167	5,867	60
	Total	16,487	2,330	0	7,546	9,876	0	0	900	900	2,330	0	8,446	10,776	65
Cervantes	Urban	2,608	0	0	1,863	1,863	0	0	0	0	0	0	1,863	1,863	71
	Rural	11,603	0	0	9,063	9,063	0	0	0	0	0	0	9,063	9,063	78
	Total	14,211	0	0	10,926	10,926	0	0	0	0	0	0	10,926	10,926	77
Galimuyod	Urban	430	0	0	375	375	0	0	0	0	0	0	375	375	87
	Rural	8,298	0	0	7,036	7,036	0	0	375	375	0	0	7,411	7,411	89
	Total	8,728	0	0	7,411	7,411	0	0	375	375	0	0	7,786	7,786	89
G. del Pilar	Urban	607	600	0	0	600	0	0	0	0	600	0	600	600	99
	Rural	2,992	800	550	1,407	2,757	0	0	0	0	800	550	1,407	2,757	92
	Total	3,599	1,400	550	1,407	3,357	0	0	0	0	1,400	550	1,407	3,357	93
Lidlidda	Urban	1,247	0	0	1,129	1,129	0	0	0	0	0	0	1,129	1,129	91
	Rural	2,739	0	0	2,454	2,454	0	0	0	0	0	0	2,454	2,454	90
	Total	3,986	0	0	3,583	3,583	0	0	0	0	0	0	3,583	3,583	90
Magsingal	Urban	5,278	0	0	3,908	3,908	0	0	300	300	0	0	4,208	4,208	80
	Rural	18,723	0	0	13,719	13,719	0	0	525	525	0	0	14,244	14,244	76
	Total	24,001	0	0	17,627	17,627	0	0	825	825	0	0	18,452	18,452	77
Nagbukel	Urban	732	0	0	469	469	0	0	0	0	0	0	469	469	64
	Rural	3,216	0	50	1,880	1,930	0	0	150	150	0	50	2,030	2,080	65
	Total	3,948	0	50	2,349	2,399	0	0	150	150	0	50	2,499	2,549	65
Narvacan	Urban	2,816	874	0	1,040	1,914	0	0	0	0	874	0	1,040	1,914	68
	Rural	34,821	0	450	18,344	18,794	0	0	0	0	0	450	18,344	18,794	54
	Total	37,637	874	450	19,384	20,708	0	0	0	0	874	450	19,384	20,708	55
Quirino	Urban	1,381	0	1,020	0	1,020	0	0	0	0	0	1,020	0	1,020	74
	Rural	6,034	0	2,226	0	2,226	0	0	0	0	0	2,226	0	2,226	37
	Total	7,415	0	3,246	0	3,246	0	0	0	0	0	3,246	0	3,246	44
Salcedo	Urban	1,344	0	0	1,036	1,036	0	0	0	0	0	0	1,036	1,036	77
	Rural	8,655	0	0	6,644	6,644	0	0	0	0	0	0	6,644	6,644	77
	Total	9,999	0	0	7,680	7,680	0	0	0	0	0	0	7,680	7,680	77
San Emilio	Urban	2,303	0	0	2,141	2,141	0	0	0	0	0	0	2,141	2,141	93
	Rural	4,104	0	0	3,563	3,563	0	0	0	0	0	0	3,563	3,563	87
	Total	6,407	0	0	5,704	5,704	0	0	0	0	0	0	5,704	5,704	89
San Esteban	Urban	752	0	255	318	573	0	0	0	0	0	255	318	573	76
	Rural	6,033	0	149	3,270	3,919	0	0	0	0	0	149	3,270	3,919	65
	Total	6,785	0	404	4,088	4,492	0	0	0	0	0	404	4,088	4,492	66

Table 8.2.1 Estimation of Base Year Service Coverage of Water Supply (Cont'd.)

Municipalities	Type	Population (1993)	Population Served by 1995 Facilities				Pop. Served by Planned/On-going Projects				Pop. Served in the Base Year (1995)				
			Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	% Coverage
San Idelfonso	Urban	1,024	0	0	802	802	0	0	0	0	0	0	802	802	78
	Rural	4,046	0	0	3,110	3,110	0	0	0	0	0	0	3,110	3,110	77
	Total	5,070	0	0	3,912	3,912	0	0	0	0	0	0	3,912	3,912	77
San Juan	Urban	3,400	0	0	2,582	2,582	0	0	150	150	0	0	2,732	2,732	80
	Rural	18,565	0	325	13,712	14,037	0	0	750	750	0	325	14,462	14,787	80
	Total	21,965	0	325	16,294	16,619	0	0	900	900	0	325	17,194	17,519	80
San Vicente	Urban	1,193	0	0	763	763	0	0	300	300	0	0	1,063	1,063	89
	Rural	9,643	0	0	6,440	6,440	0	0	150	150	0	0	6,590	6,590	68
	Total	10,836	0	0	7,203	7,203	0	0	450	450	0	0	7,653	7,653	71
Santa	Urban	1,731	755	0	606	1,361	0	0	0	0	755	0	606	1,361	79
	Rural	11,497	95	494	6,792	7,381	0	0	150	150	95	494	6,942	7,531	66
	Total	13,228	850	494	7,398	8,742	0	0	150	150	850	494	7,548	8,892	67
Santa Catalina	Urban	1,242	0	0	941	941	0	0	0	0	0	0	941	941	76
	Rural	11,068	0	0	8,101	8,101	0	0	300	300	0	0	8,401	8,401	76
	Total	12,310	0	0	9,042	9,042	0	0	300	300	0	0	9,342	9,342	76
Santa Cruz	Urban	4,461	0	0	3,075	3,075	0	0	0	0	0	0	3,075	3,075	69
	Rural	27,697	0	1,075	18,448	19,523	0	0	0	0	0	1,075	18,448	19,523	70
	Total	32,158	0	1,075	21,523	22,598	0	0	0	0	0	1,075	21,523	22,598	70
Santa Lucia	Urban	2,256	920	0	896	1,816	0	0	0	0	920	0	896	1,816	80
	Rural	20,045	645	125	12,923	13,693	0	0	0	0	645	125	12,923	13,693	68
	Total	22,301	1,565	125	13,819	15,509	0	0	0	0	1,565	125	13,819	15,509	70
Santa Maria	Urban	3,644	0	0	1,947	1,947	0	0	0	0	0	0	1,947	1,947	53
	Rural	21,543	250	0	11,258	11,508	0	0	0	0	250	0	11,258	11,508	53
	Total	25,187	250	0	13,205	13,455	0	0	0	0	250	0	13,205	13,455	53
Santiago	Urban	2,385	335	75	1,361	1,771	0	0	0	0	335	75	1,361	1,771	74
	Rural	13,543	0	0	9,539	9,539	0	0	225	225	0	0	9,764	9,764	72
	Total	15,928	335	75	10,900	11,310	0	0	225	225	335	75	11,125	11,535	72
Santa Domingo	Urban	2,951	25	0	2,343	2,368	0	0	0	0	25	0	2,343	2,368	80
	Rural	19,450	10	475	15,179	15,664	0	0	600	600	10	475	15,729	16,264	84
	Total	22,401	35	475	17,522	18,032	0	0	600	600	35	475	18,122	18,632	83
Sigay	Urban	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rural	2,086	0	1,625	455	2,080	0	0	0	0	0	1,625	455	2,080	100
	Total	2,086	0	1,625	455	2,080	0	0	0	0	0	1,625	455	2,080	100
Sinait	Urban	2,891	995	0	1,236	2,231	0	0	1,875	1,875	995	0	1,896	2,891	100
	Rural	20,401	0	0	13,389	13,389	0	0	2,625	2,625	0	0	16,014	16,014	78
	Total	23,292	995	0	14,625	15,620	0	0	4,500	4,500	995	0	17,910	18,905	81
Suyou	Urban	976	0	225	690	915	0	0	0	0	225	0	690	915	94
	Rural	1,810	0	1,175	0	1,175	0	0	0	0	0	1,175	0	1,175	65
	Total	2,786	0	1,400	690	2,090	0	0	0	0	225	1,175	690	2,090	75
Suyo	Urban	1,790	0	1,275	0	1,275	0	0	0	0	0	1,275	0	1,275	71
	Rural	7,047	0	4,700	294	4,994	0	0	0	0	0	4,700	294	4,994	71
	Total	8,837	0	5,975	294	6,269	0	0	0	0	0	5,975	294	6,269	71
Tagudin	Urban	4,853	2,660	0	1,674	4,334	0	0	0	0	2,660	0	1,674	4,334	89
	Rural	27,951	2,555	675	18,679	21,909	0	0	0	0	2,555	675	18,679	21,909	78
	Total	32,804	5,215	675	20,353	26,243	0	0	0	0	5,215	675	20,353	26,243	80
Virgin (Capital)	Urban	41,403	6,300	0	23,300	29,600	0	0	1,125	1,125	6,300	0	24,425	30,725	74
	Rural	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	41,403	6,300	0	23,300	29,600	0	0	1,125	1,125	6,300	0	24,425	30,725	74
Provincial Total	Urban	131,439	16,093	2,850	75,104	94,048	0	0	6,825	6,825	16,094	2,850	80,714	99,658	76
	Rural	432,090	11,515	15,619	270,302	297,436	0	0	8,775	8,775	11,515	15,619	279,077	306,211	71
	Total	563,529	27,608	18,469	345,406	391,484	0	0	15,600	15,600	27,609	18,469	359,791	405,869	72

**Table 8.2.2 Population Coverage in Phase I Provided by Served Population in the Base Year
(Water Supply)**

Municipalities	Type	Population Served by Existing Facilities				1995		2000	
		Level III	Level II	Level I	Total	Total Population	% Coverage	Total Population	% Coverage
Ablen	Urban	0	0	905	905	1,411	64	1,492	61
	Rural	0	0	1,758	1,758	4,307	41	4,556	39
	Total	0	0	2,663	2,663	5,718	47	6,048	44
Banayoyo	Urban	0	0	685	685	818	84	865	79
	Rural	0	0	4,629	4,629	5,510	84	5,829	79
	Total	0	0	5,314	5,314	6,328	84	6,694	79
Bantay	Urban	1,150	0	6,020	7,170	10,098	71	10,682	67
	Rural	3,750	0	9,461	13,211	18,037	73	19,079	69
	Total	4,900	0	15,481	20,381	28,135	72	29,761	68
Burgos	Urban	0	0	899	899	1,494	60	1,580	57
	Rural	0	975	4,763	5,738	8,793	65	9,302	62
	Total	0	975	5,662	6,637	10,287	65	10,882	61
Cabugao	Urban	850	0	6,336	7,186	7,901	91	8,361	86
	Rural	1,710	0	17,454	19,164	22,091	87	23,367	82
	Total	2,560	0	23,790	26,350	29,995	88	31,728	83
Candon	Urban	0	0	4,560	4,560	7,229	63	7,647	60
	Rural	0	550	24,796	25,346	40,042	63	42,356	60
	Total	0	550	29,356	29,906	47,271	63	50,003	60
Caoayan	Urban	630	0	4,279	4,909	6,787	72	7,179	68
	Rural	1,700	0	4,167	5,867	9,700	60	10,261	57
	Total	2,330	0	8,446	10,776	16,487	65	17,440	62
Cervantes	Urban	0	0	1,863	1,863	2,608	71	2,759	68
	Rural	0	0	9,063	9,063	11,603	78	12,273	74
	Total	0	0	10,926	10,926	14,211	77	15,032	73
Galimuyod	Urban	0	0	375	375	430	87	455	82
	Rural	0	0	7,411	7,411	8,298	89	8,777	84
	Total	0	0	7,786	7,786	8,728	89	9,232	84
G. del Pilar	Urban	600	0	0	600	607	99	642	93
	Rural	800	550	1,407	2,757	2,992	92	3,165	87
	Total	1,400	550	1,407	3,357	3,599	93	3,807	88
Liditida	Urban	0	0	1,129	1,129	1,247	91	1,319	86
	Rural	0	0	2,454	2,454	2,739	90	2,897	85
	Total	0	0	3,583	3,583	3,986	90	4,216	85
Magsingal	Urban	0	0	4,208	4,208	5,278	80	5,583	75
	Rural	0	0	14,244	14,244	18,723	76	19,805	72
	Total	0	0	18,452	18,452	24,001	77	25,388	73
Nagbukel	Urban	0	0	469	469	732	64	774	61
	Rural	0	50	2,030	2,080	3,216	65	3,402	61
	Total	0	50	2,499	2,549	3,948	65	4,176	61
Narvacan	Urban	874	0	1,040	1,914	2,816	68	2,979	64
	Rural	0	450	18,344	18,794	34,821	54	36,833	51
	Total	874	450	19,384	20,708	37,637	55	39,812	52
Quirino	Urban	0	1,020	0	1,020	1,381	74	1,461	70
	Rural	0	2,226	0	2,226	6,034	37	6,383	35
	Total	0	3,246	0	3,246	7,415	41	7,844	41
Salcedo	Urban	0	0	1,036	1,036	1,344	77	1,422	73
	Rural	0	0	6,644	6,644	8,655	77	9,155	73
	Total	0	0	7,680	7,680	9,999	77	10,577	73
San Emilio	Urban	0	0	2,141	2,141	2,303	93	2,436	88
	Rural	0	0	3,563	3,563	4,104	87	4,341	82
	Total	0	0	5,704	5,704	6,407	89	6,777	84
San Esteban	Urban	0	255	318	573	752	76	795	72
	Rural	0	149	3,770	3,919	6,033	65	6,382	61
	Total	0	404	4,088	4,492	6,785	66	7,177	63

**Table 8.2.2 Population Coverage in Phase I Provided by Served Population in the Base Year
(Water Supply) (Cont'd.)**

Municipalities	Type	Population Served by Existing Facilities				1995		2000	
		Level III	Level II	Level I	Total	Total Population	% Coverage	Total Population	% Coverage
San Idelfonso	Urban	0	0	802	802	1,024	78	1,083	74
	Rural	0	0	3,110	3,110	4,046	77	4,280	73
	Total	0	0	3,912	3,912	5,070	77	5,363	73
San Juan	Urban	0	0	2,732	2,732	3,400	80	3,596	76
	Rural	0	325	14,462	14,787	18,565	80	19,638	75
	Total	0	325	17,194	17,519	21,965	80	23,234	75
San Vicente	Urban	0	0	1,063	1,063	1,193	89	1,262	84
	Rural	0	0	6,590	6,590	9,643	68	10,200	65
	Total	0	0	7,653	7,653	10,836	71	11,462	67
Santa	Urban	755	0	606	1,361	1,731	79	1,831	74
	Rural	95	494	6,942	7,531	11,497	66	12,161	62
	Total	850	494	7,548	8,892	13,228	67	13,992	64
Santa Catalina	Urban	0	0	941	941	1,242	76	1,314	72
	Rural	0	0	8,401	8,401	11,068	76	11,707	72
	Total	0	0	9,342	9,342	12,310	76	13,021	72
Santa Cruz	Urban	0	0	3,075	3,075	4,461	69	4,719	65
	Rural	0	1,075	18,448	19,523	27,697	70	29,297	67
	Total	0	1,075	21,523	22,598	32,158	70	34,016	66
Santa Lucia	Urban	920	0	896	1,816	2,256	80	2,386	76
	Rural	645	125	12,923	13,693	20,045	68	21,204	65
	Total	1,565	125	13,819	15,509	22,301	70	23,590	66
Santa Maria	Urban	0	0	1,947	1,947	3,644	53	3,855	51
	Rural	250	0	11,258	11,508	21,543	53	22,788	51
	Total	250	0	13,205	13,455	25,187	53	26,643	51
Santiago	Urban	335	75	1,361	1,771	2,385	74	2,523	70
	Rural	0	0	9,764	9,764	13,543	72	14,326	68
	Total	335	75	11,125	11,535	15,928	72	16,849	68
Santo Domingo	Urban	25	0	2,343	2,368	2,951	80	3,122	76
	Rural	10	475	15,779	16,264	19,450	84	20,574	79
	Total	35	475	18,122	18,632	22,401	83	23,696	79
Sigay	Urban	0	0	0	0	0	0	0	0
	Rural	0	1,625	455	2,080	2,086	100	2,207	94
	Total	0	1,625	455	2,080	2,086	100	2,207	94
Sinait	Urban	995	0	1,896	2,891	2,891	100	3,058	95
	Rural	0	0	16,014	16,014	20,401	78	21,580	74
	Total	995	0	17,910	18,905	23,292	81	24,638	77
Sugpon	Urban	0	225	690	915	976	94	1,032	89
	Rural	0	1,175	0	1,175	1,810	65	1,915	61
	Total	0	1,400	690	2,090	2,786	75	2,947	71
Suyo	Urban	0	1,275	0	1,275	1,790	71	1,894	67
	Rural	0	4,700	294	4,994	7,047	71	7,454	67
	Total	0	5,975	294	6,269	8,837	71	9,348	67
Tagudin	Urban	2,660	0	1,674	4,334	4,853	89	5,133	84
	Rural	2,555	675	18,679	21,909	27,951	78	29,567	74
	Total	5,215	675	20,353	26,243	32,804	80	34,700	76
Vigan (Capital)	Urban	6,300	0	24,425	30,725	41,403	74	43,796	70
	Rural	0	0	0	0	0	0	0	0
	Total	6,300	0	24,425	30,725	41,403	74	43,796	70
Provincial Total	Urban	16,094	2,850	80,714	99,658	131,439	76	139,035	72
	Rural	11,515	15,619	279,077	306,211	432,090	71	457,061	67
	Total	27,609	18,469	359,791	405,869	563,529	72	596,096	68

Table 8.2.3 Number of Households Served by Sanitary Toilets in the Base Year (1995)

Municipality	Area	1995				Households Using Sanitary Toilets in 1995				Households Using Sanitary Toilets in Base Year (1995)				Households Using Sanitary Toilets in Base Year (1995)			
		Population	MHS	Flush	VIP	Total	Recipients of HHs of Planned/Ongoing Projects		Number		Flush	VIP	Total	Coverage (%)			
							Flush	VIP	Poor Flush	VIP				Poor Flush	VIP	Total	Total
Alcoba	Urban	1,411	265	7	145	211	0	0	125	7	211	39	0	55	22	80	
	Rural	4,107	773	0	411	610	0	0	411	0	610	190	0	53	26	79	
	Total	5,518	1,038	7	556	821	0	0	556	7	821	288	0	54	25	79	
Bambuyo	Urban	818	163	0	163	163	0	0	163	0	163	0	0	100	0	100	
	Rural	5,510	991	0	916	944	0	0	916	0	944	28	0	92	3	95	
	Total	6,328	1,154	0	1,079	1,107	0	0	1,079	0	1,107	56	0	94	2	96	
Bantuy	Urban	10,098	1,927	562	1,064	1,902	0	0	1,064	562	1,902	276	1,902	55	14	79	
	Rural	18,077	3,340	170	2,408	2,775	0	0	2,408	170	2,775	1,531	2,775	74	4	81	
	Total	28,175	5,267	732	3,472	4,677	0	0	3,472	732	4,677	2,468	4,677	57	8	82	
Burgos	Urban	1,494	295	4	136	286	0	0	136	4	286	146	286	46	49	97	
	Rural	8,793	1,678	49	1,588	1,480	0	0	1,588	49	1,480	73	1,480	81	4	88	
	Total	10,287	1,973	53	1,724	1,766	0	0	1,724	53	1,766	219	1,766	76	11	88	
Cabanga	Urban	7,904	1,508	205	1,299	1,543	0	0	1,299	205	1,543	149	1,543	33	2	58	
	Rural	22,091	4,152	11	3,815	3,844	0	0	3,815	11	3,844	244	3,844	92	6	98	
	Total	29,995	5,720	216	5,114	5,613	0	0	5,114	216	5,613	244	5,613	4	5	98	
Candava	Urban	7,229	1,398	74	1,272	1,377	0	0	1,272	74	1,377	31	1,377	5	2	97	
	Rural	40,042	2,484	147	6,983	7,380	0	0	6,983	147	7,380	250	7,380	2	3	99	
	Total	47,271	3,882	221	8,255	8,757	0	0	8,255	221	8,757	291	8,757	2	4	99	
Cayayan	Urban	6,787	1,344	172	853	1,344	0	0	853	172	1,344	189	1,344	91	4	99	
	Rural	9,700	1,895	101	1,048	1,149	0	0	1,048	101	1,149	149	1,149	5	2	97	
	Total	16,487	3,239	273	1,931	2,393	0	0	1,931	273	2,393	298	2,393	8	6	99	
Cervantes	Urban	2,608	454	180	205	451	0	0	205	180	451	66	451	48	18	89	
	Rural	11,603	2,145	404	741	1,918	0	0	741	404	1,918	241	1,918	35	36	89	
	Total	14,211	2,599	584	946	2,869	0	0	946	584	2,869	323	2,869	36	30	100	
Cinturay	Urban	4,400	81	65	65	81	0	0	65	65	81	16	81	0	0	100	
	Rural	8,298	1,528	4	1,491	1,526	0	0	1,491	4	1,526	23	1,526	0	0	100	
	Total	12,698	2,349	69	2,956	3,057	0	0	2,956	69	3,057	39	3,057	0	0	100	
C. del Pilar	Urban	607	119	30	76	119	0	0	76	30	119	13	119	64	11	100	
	Rural	2,992	541	2	390	487	0	0	390	2	487	95	487	0	0	95	
	Total	3,599	660	32	466	606	0	0	466	32	606	108	606	0	0	95	
Ludford	Urban	1,247	245	0	324	235	0	0	324	0	235	20	235	0	0	97	
	Rural	2,739	519	0	483	503	0	0	483	0	503	31	503	0	0	97	
	Total	3,986	764	0	807	737	0	0	807	0	737	51	737	0	0	97	
Maysangal	Urban	5,278	1,082	100	893	1,082	0	0	893	100	1,082	59	1,082	0	0	100	
	Rural	18,723	3,539	110	2,689	3,546	0	0	2,689	110	3,546	746	3,546	0	0	100	
	Total	24,001	4,621	210	3,573	4,618	0	0	3,573	210	4,618	835	4,618	0	0	100	
Nugboke	Urban	732	143	41	131	143	0	0	131	41	143	23	143	0	0	97	
	Rural	3,216	624	0	327	350	0	0	327	0	350	23	350	0	0	97	
	Total	3,948	767	41	458	493	0	0	458	41	493	46	493	0	0	97	
Narvacan	Urban	2,816	542	50	440	540	0	0	440	50	540	40	540	0	0	97	
	Rural	44,831	6,801	603	5,524	6,804	0	0	5,524	603	6,804	524	6,804	0	0	97	
	Total	47,647	7,343	653	5,964	7,348	0	0	5,964	653	7,348	564	7,348	0	0	97	
Quirino	Urban	1,381	269	1	225	266	0	0	225	1	266	40	266	0	0	97	
	Rural	6,042	1,132	0	640	1,132	0	0	640	0	1,132	414	1,132	0	0	97	
	Total	7,423	1,401	1	865	1,401	0	0	865	1	1,401	454	1,401	0	0	97	
Sakayan	Urban	1,544	274	5	261	274	0	0	261	5	274	7	274	0	0	100	
	Rural	8,655	1,707	19	1,584	1,707	0	0	1,584	19	1,707	104	1,707	0	0	100	
	Total	10,199	3,481	24	1,845	3,481	0	0	1,845	24	3,481	111	3,481	0	0	100	
San Emilio	Urban	2,404	416	0	296	416	0	0	296	0	416	29	416	0	0	97	
	Rural	4,104	766	0	307	766	0	0	307	0	766	307	766	0	0	97	
	Total	6,508	1,182	0	603	1,182	0	0	603	0	1,182	603	1,182	0	0	97	

Table 8.2.4 Number of Public School Students Served by School Toilets in Base Year (1995)

Municipality	1995 Total No. of Public School Students	Std. No. of Students that can be Served by 1995 Toilets	No. of Students to be Served by Planned/On-going Projects	Std. No. of Students that can be Served by Toilets in Base Year (1995)	Coverage (%)
Alilem	1,333	1,333	0	1,333	100
Banayoyo	1,340	1,340	0	1,340	100
Bantay	3,552	3,552	0	3,552	100
Burgos	1,942	1,942	0	1,942	100
Cabugao	4,612	4,450	0	4,450	96
Candon	9,147	5,300	0	5,300	58
Caoyan	2,377	2,377	0	2,377	100
Cervantes	2,509	1,600	0	1,600	64
Galimuyod	1,451	850	0	850	59
G. del Pilar	552	552	0	552	100
Lidlidda	694	694	0	694	100
Magsingal	3,466	3,450	0	3,450	100
Nagbukel	1,151	1,151	0	1,151	100
Narvacan	8,453	8,453	0	8,453	100
Quirino	1,412	1,100	0	1,100	78
Salcedo	2,312	2,050	0	2,050	89
San Emilio	1,138	400	0	400	35
San Esteban	1,279	1,279	0	1,279	100
San Idelfonso	749	749	0	749	100
San Juan	5,086	5,086	0	5,086	100
San Vicente	1,407	900	0	900	64
Santa	2,339	2,339	0	2,339	100
Santa Catalina	2,069	1,450	0	1,450	70
Santa Cruz	5,201	3,650	0	3,650	70
Santa Lucia	4,271	1,600	0	1,600	37
Santa Maria	5,452	5,452	0	5,452	100
Santiago	2,906	1,850	0	1,850	64
Santo Domingo	4,097	4,097	0	4,097	100
Sigay	412	300	0	300	73
Sinait	5,520	5,520	0	5,520	100
Sugpon	640	600	0	600	94
Suyo	1,987	1,500	0	1,500	75
Tagudin	6,799	6,799	0	6,799	100
Vigan (Capital)	10,152	10,152	0	10,152	100
Provincial Total	107,807	93,917	0	93,917	87

Table 8.2.5 Number of Public Utilities with Sanitary Toilets in the Base Year (1995)

Municipality	Type	No. of PU in 1995	No. of PU with Sanitary Toilets in 1995	No. of PU in Planned/On-going Project	No. of PU with Sanitary Toilets in Planned/On-going Projects	No. of PU in Base Year 1995	No. of PU with Sanitary Toilets in Base year 1995	Coverage (%)
Alicem	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Banayoyo	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Bantay	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	3	3	0	0	3	3	100
	Total	3	3	0	0	3	3	100
Burgos	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Cabugao	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
Candon	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	1	1	0	0	1	1	100
	Total	2	2	0	0	2	2	100
Caoayan	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Cervantes	Public Market	1	0	0	0	1	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	0	0	0	1	0	0
Galimuyod	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0

Table 8.2.5 Number of Public Utilities with Sanitary Toilets in the Base Year (1995) (Cont'd.)

Municipality	Type	No. of PU in 1995	No. of PU with Sanitary Toilets in 1995	No. of PU in Planned/On-going Project	No. of PU with Sanitary Toilets in Planned/On-going Projects	No. of PU in Base Year 1995	No. of PU with Sanitary Toilets in Base year 1995	Coverage (%)
G. del Pilar	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Lidlidda	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Magsingal	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
Nagbukel	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Narvacun	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	1	1	0	0	1	1	100
	Total	2	2	0	0	2	2	100
Quirino	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
Salcedo	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
San Emilio	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
San Esteban	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0

Table 8.2.5 Number of Public Utilities with Sanitary Toilets in the Base Year (1995) (Cont'd.)

Municipality	Type	No. of PU in 1995	No. of PU with Sanitary Toilets in 1995	No. of PU in Planned/On-going Project	No. of PU with Sanitary Toilets in Planned/On-going Projects	No. of PU in Base Year 1995	No. of PU with Sanitary Toilets in Base year 1995	Coverage (%)
San Idelfonso	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
San Juan	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
San Vicente	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
Santa	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
Santa Catalina	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Santa Cruz	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
Santa Lucia	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
Santa Maria	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
Santiago	Public Market	1	0	0	0	1	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	0	0	0	1	0	0

Table 8.2.5 Number of Public Utilities with Sanitary Toilets in the Base Year (1995) (Cont'd.)

Municipality	Type	No. of PU in 1995	No. of PU with Sanitary Toilets in 1995	No. of PU in Planned/On-going Project	No. of PU with Sanitary Toilets in Planned/On-going Projects	No. of PU in Base Year 1995	No. of PU with Sanitary Toilets in Base year 1995	Coverage (%)
Santo Domingo	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
Sigay	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Sinait	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
Sugpon	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Suyo	Public Market	0	0	0	0	0	0	0
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0
Tagudin	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	0	0	0	0	0	0	0
	Total	1	1	0	0	1	1	100
Vigan (Capital)	Public Market	1	1	0	0	1	1	100
	Bus/Jeep Terminal	6	6	0	0	6	6	100
	Total	7	7	0	0	7	7	100
Provincial Total	Public Market	19	17	0	0	19	17	89
	Bus/Jeep Terminal	11	11	0	0	11	11	100
	Total	30	28	0	0	30	28	93

Note: PU - Public Utilities

Table 8.2.6 Household Coverage in Phase I Provided by Existing Facilities in the Base Year (Household Toilets)

Municipality	Area	No. of Household Served by Existing Facilities						Coverage in 1995						Coverage in 2000					
		Flush		VIP Latrine		Total	No. of Hts	Flush		VIP Latrine		Total	No. of Hts	Served Population		Served Households		Total	
		Flush	VIP Latrine	Flush	VIP Latrine			Number	%	Flush	VIP Latrine			%	%				
Alibem	Urban	7	145	59	211	265	3	55	22	80	1,129	80	282	2	51	21	75		
	Rural	0	411	199	610	773	0	53	26	79	3,403	79	814	0	50	24	75		
	Total	7	556	258	821	1,038	1	54	25	79	4,532	79	1,096	2	51	24	75		
Bansayo	Urban	0	163	0	163	163	0	100	0	100	818	100	173	0	94	0	94		
	Rural	0	916	26	944	991	0	92	3	95	5,235	95	1,041	0	88	3	91		
	Total	0	1,079	26	1,107	1,154	0	94	2	96	6,053	96	1,214	0	89	2	91		
Bantay	Urban	562	1,064	276	1,902	1,927	29	55	14	99	9,997	99	2,054	27	52	13	93		
	Rural	170	2,468	137	2,775	3,340	5	74	4	83	14,971	83	3,533	5	70	4	79		
	Total	732	3,532	413	4,677	5,267	14	89	8	89	24,968	89	5,587	13	63	7	84		
Burgos	Urban	4	136	146	246	295	1	46	49	97	1,449	97	310	1	44	47	92		
	Rural	49	1,358	73	1,480	1,678	3	81	4	88	7,738	88	1,789	3	76	4	83		
	Total	53	1,494	219	1,766	1,973	3	76	11	90	9,187	90	2,099	3	71	10	84		
Cabugao	Urban	205	1,299	39	1,543	1,568	13	83	2	98	7,746	98	1,672	12	78	2	92		
	Rural	11	3,815	244	4,070	4,152	0	92	6	98	21,649	98	4,409	0	87	6	92		
	Total	216	5,114	283	5,613	5,720	4	89	5	98	29,395	98	6,081	4	84	5	92		
Candon	Urban	74	1,272	31	1,377	1,398	5	91	2	98	7,084	98	1,471	5	86	2	94		
	Rural	147	6,983	250	7,380	7,484	2	93	3	99	39,642	99	7,992	2	87	3	92		
	Total	221	8,255	281	8,757	8,882	2	91	3	99	46,726	99	9,463	2	87	3	93		
Caoyan	Urban	172	883	189	1,244	1,344	13	66	14	93	6,312	93	1,436	12	61	13	87		
	Rural	101	1,048	0	1,149	1,895	5	55	0	61	5,917	61	2,012	5	52	0	57		
	Total	273	1,931	189	2,393	3,239	8	59	6	74	12,229	74	3,448	8	56	5	69		
Cervantes	Urban	180	205	46	451	454	40	45	15	99	2,582	99	484	37	42	14	93		
	Rural	404	741	773	1,918	2,145	19	35	36	89	10,327	89	2,273	18	33	34	84		
	Total	584	946	819	2,369	2,599	22	36	32	91	12,909	91	2,757	21	34	30	86		
Galimuyod	Urban	0	65	16	81	81	0	80	20	100	430	100	86	0	76	19	94		
	Rural	4	1,499	23	1,526	1,528	0	98	2	100	8,298	100	1,625	0	92	1	94		
	Total	4	1,564	39	1,607	1,609	0	97	2	100	8,728	100	1,711	0	91	2	94		
C. del Pilar	Urban	30	76	13	119	119	25	64	11	100	607	100	126	24	60	10	94		
	Rural	2	390	98	487	541	0	72	18	90	2,693	90	575	0	68	17	85		
	Total	32	466	108	606	660	5	71	16	92	3,300	92	701	5	66	15	86		
Ladikid	Urban	0	224	11	235	245	0	91	4	96	1,197	96	259	0	86	4	91		
	Rural	0	482	20	502	519	0	93	4	97	2,667	97	547	0	88	4	92		
	Total	0	706	31	737	764	0	92	4	96	3,854	96	806	0	88	4	91		
Magungal	Urban	100	893	89	1,082	1,082	9	83	8	100	5,278	100	1,139	9	78	8	95		
	Rural	110	2,680	746	3,536	3,539	3	76	21	100	18,723	100	3,737	3	72	20	95		
	Total	210	3,573	835	4,618	4,621	5	77	18	100	24,001	100	4,876	4	73	17	95		

Table 8.2.6 Household Coverage in Phase I Provided by Existing Facilities in the Base Year (Household Toilets) (Cont'd.)

Municipality	Area	No. of Household Served by Existing Facilities										Coverage in 1995										Coverage in 2000									
		Flush			Pour Flush			VIP Latrine			Total			No. of HHs			Served Households %			Served Population			No. of HHs			Served Households %					
		Flush	Pour Flush	VIP Latrine	Flush	Pour Flush	VIP Latrine	Flush	Pour Flush	VIP Latrine	Total	Flush	Pour Flush	VIP Latrine	Total	Flush	Pour Flush	VIP Latrine	Total	Number	%	Flush	Pour Flush	VIP Latrine	Total	Flush	Pour Flush	VIP Latrine	Total		
Nagbaki	Urban	4	131	0	135	143	0	0	0	94	3	92	0	94	688	94	152	0	86	3	86	0	89	0	0	0	0	0	0		
	Rural	0	327	23	350	624	0	0	0	56	0	52	0	56	1,801	56	654	0	50	0	50	0	54	0	0	0	0	0			
	Total	4	458	23	485	767	1	0	0	63	63	50	0	63	2,489	63	806	0	47	0	47	0	60	0	0	0	0	0			
Navakan	Urban	90	440	0	530	542	17	0	0	98	81	81	0	98	2,760	98	573	16	77	16	77	0	92	0	0	0	0	0			
	Rural	360	5,524	0	5,884	6,801	5	0	0	87	30,294	87	0	87	30,294	87	7,222	5	76	5	76	0	81	0	0	0	0	0	0		
	Total	450	5,964	0	6,414	7,343	6	0	0	87	33,054	87	0	87	33,054	87	7,795	6	77	6	77	0	82	0	0	0	0	0	0		
Quins	Urban	1	225	40	266	269	0	0	0	99	15	84	15	99	1,367	99	286	0	79	0	79	14	93	0	0	0	0	0			
	Rural	0	640	414	1,054	1,132	0	0	0	37	93	57	0	37	5,612	37	1,204	0	53	0	53	34	88	0	0	0	0	0	0		
	Total	1	865	454	1,320	1,401	0	0	0	74	94	62	0	74	6,979	74	1,490	0	58	0	58	30	89	0	0	0	0	0	0		
Salcedo	Urban	5	261	7	273	273	2	0	0	100	3	96	3	100	1,344	100	290	2	90	2	90	2	94	0	0	0	0	0	0		
	Rural	19	1,584	104	1,707	1,707	1	0	0	93	6	93	0	93	8,655	93	1,795	1	88	1	88	6	95	0	0	0	0	0	0		
	Total	24	1,845	111	1,980	1,980	1	0	0	100	6	93	0	100	9,999	100	2,085	1	88	1	88	5	95	0	0	0	0	0	0		
San Emilio	Urban	0	296	29	325	416	0	0	0	78	7	71	0	78	1,796	78	443	0	67	0	67	7	73	0	0	0	0	0	0		
	Rural	0	307	0	307	766	0	0	0	40	0	40	0	40	1,642	40	804	0	38	0	38	0	38	0	0	0	0	0	0		
	Total	0	603	29	632	1,182	0	0	0	51	0	51	0	51	3,438	51	1,247	0	48	0	48	2	51	0	0	0	0	0	0		
San Esteban	Urban	10	128	0	138	148	7	0	0	93	699	93	0	93	699	93	156	6	82	6	82	0	88	0	0	0	0	0	0		
	Rural	24	983	0	1,007	1,221	2	0	0	82	4,947	82	0	82	4,947	82	1,302	2	75	2	75	0	77	0	0	0	0	0	0		
	Total	34	1,111	0	1,145	1,369	2	0	0	84	5,646	84	0	84	5,646	84	1,458	2	76	2	76	0	79	0	0	0	0	0	0		
San Idelfonso	Urban	24	151	0	175	198	12	0	0	88	901	88	0	88	901	88	208	12	73	12	73	0	84	0	0	0	0	0	0		
	Rural	17	680	0	697	753	2	0	0	93	3,763	93	0	93	3,763	93	793	2	85	2	85	0	88	0	0	0	0	0	0		
	Total	41	831	0	872	951	4	0	0	92	4,664	92	0	92	4,664	92	1,001	4	83	4	83	0	87	0	0	0	0	0	0		
San Juan	Urban	25	616	53	694	707	4	0	0	98	749	98	0	98	3,332	98	749	3	82	3	82	7	93	0	0	0	0	0	0		
	Rural	174	2,711	0	2,885	3,612	5	0	0	80	14,852	80	0	80	14,852	80	3,851	5	70	5	70	0	75	0	0	0	0	0	0		
	Total	199	3,327	53	3,579	4,319	5	0	0	83	18,184	83	0	83	18,184	83	4,600	4	72	4	72	1	78	0	0	0	0	0	0		
San Vicente	Urban	21	188	10	219	219	10	0	0	100	1,193	100	0	100	1,193	100	234	9	80	9	80	4	84	0	0	0	0	0	0		
	Rural	80	1,200	144	1,424	1,913	4	0	0	74	2,136	74	0	74	2,136	74	2,040	4	59	4	59	7	70	0	0	0	0	0	0		
	Total	101	1,388	154	1,642	2,132	5	0	0	77	3,329	77	0	77	3,329	77	2,274	4	61	4	61	7	72	0	0	0	0	0	0		
Santa	Urban	28	279	48	355	363	8	0	0	98	1,696	98	0	98	1,696	98	381	7	73	7	73	13	83	0	0	0	0	0	0		
	Rural	5	1,948	0	1,953	2,194	0	0	0	89	10,232	89	0	89	10,232	89	2,339	6	83	6	83	0	83	0	0	0	0	0	0		
	Total	33	2,227	48	2,308	2,557	1	0	0	90	11,928	90	0	90	11,928	90	2,720	1	82	1	82	2	85	0	0	0	0	0	0		
Santa Catalina	Urban	20	204	0	224	233	9	0	0	96	1,192	96	0	96	1,192	96	248	8	82	8	82	0	90	0	0	0	0	0	0		
	Rural	124	1,797	71	1,928	2,031	6	0	0	95	10,515	95	0	95	10,515	95	2,129	6	84	6	84	0	91	0	0	0	0	0	0		
	Total	144	2,001	71	2,152	2,264	6	0	0	95	11,707	95	0	95	11,707	95	2,377	6	84	6	84	0	91	0	0	0	0	0	0		

Table 8.2.6 Household Coverage in Phase I Provided by Existing Facilities in the Base Year (Household Toilets) (Cont'd.)

Municipality	Area	No. of Household Served by Existing Facilities										Coverage in 1995										Coverage in 2000									
		Flush			VIP Latrine			Total				No. of HHs			Served Households %			Served Population %				No. of HHs			Served Households %						
		Flush	Pour Flush	VIP Latrine	Flush	Pour Flush	VIP Latrine	Total	No. of HHs	Flush	Pour Flush	VIP Latrine	Total	No. of HHs	Flush	Pour Flush	VIP Latrine	Total	%	Number	%	No. of HHs	Flush	Pour Flush	VIP Latrine	Total					
																											Number	%	Number	%	
Santa Cruz	Urban	11	724	77	812	868	94	4,193	94	925	1	78	8	85																	
	Rural	43	4,206	322	5,101	5,101	94	26,035	94	5,425	1	81	6	88																	
	Total	54	5,144	399	5,597	5,597	94	30,228	94	6,350	1	81	6	89																	
Santa Lucia	Urban	40	252	24	316	431	73	1,647	73	469	9	55	5	69																	
	Rural	47	2,732	497	3,276	3,651	90	18,041	90	3,855	1	71	13	85																	
	Total	87	2,984	521	3,592	4,082	90	19,688	88	4,314	2	69	12	83																	
Santa Maria	Urban	36	653	25	714	714	98	3,571	98	771	5	85	3	93																	
	Rural	32	3,782	53	3,867	4,175	93	20,035	93	4,382	1	86	1	88																	
	Total	68	4,435	78	4,581	4,907	93	23,606	93	5,153	1	86	2	89																	
Santiago	Urban	51	419	12	436	442	99	2,361	99	467	1	90	3	93																	
	Rural	593	1,322	227	2,142	2,485	86	11,647	86	2,605	23	51	9	82																	
	Total	598	1,741	239	2,578	2,927	88	14,008	88	3,072	19	57	8	84																	
Santo Domingo	Urban	14	550	0	564	577	98	2,892	98	612	2	90	0	92																	
	Rural	58	3,291	0	3,349	3,705	90	17,305	90	3,882	1	85	0	86																	
	Total	72	3,841	0	3,913	4,282	90	20,397	91	4,494	2	85	0	87																	
Sigay	Urban	0	0	0	0	0	0	0	0	0	0	0	0	0																	
	Rural	0	267	0	267	361	74	1,544	74	361	0	70	0	70																	
	Total	0	267	0	267	361	74	1,544	74	361	0	70	0	70																	
Sinait	Urban	35	519	7	561	561	100	2,891	100	600	6	87	1	94																	
	Rural	3	3,266	423	3,692	4,250	87	17,749	87	4,496	0	73	9	82																	
	Total	38	3,785	430	4,253	4,811	88	20,640	88	5,096	1	74	8	83																	
Sugboon	Urban	0	83	87	170	192	45	89	45	202	0	41	4	44																	
	Rural	0	118	162	280	323	37	50	37	342	0	35	47	82																	
	Total	0	201	249	450	515	39	48	87	39	544	0	37	46																	
Suyo	Urban	5	198	106	309	309	64	1,790	100	327	2	61	32	94																	
	Rural	11	697	303	1,011	1,335	76	5,356	76	1,406	1	50	22	72																	
	Total	16	895	409	1,320	1,644	80	7,146	80	1,733	1	52	24	76																	
Tagudin	Urban	146	583	66	795	889	66	4,319	86	933	16	62	7	85																	
	Rural	195	3,814	418	4,327	5,099	88	24,597	88	5,280	4	72	8	84																	
	Total	341	4,397	484	5,222	5,898	89	28,916	89	6,213	5	71	8	84																	
Vigan (Capital)	Urban	1,005	5,618	448	7,071	7,268	72	37,677	91	8,263	12	68	5	86																	
	Rural	0	0	0	0	0	0	0	0	0	0	0	0	0																	
	Total	1,005	5,618	448	7,071	7,268	72	37,677	91	8,263	12	68	5	86																	
Provincial Total	Urban	2,859	18,943	1,974	23,776	25,221	111	123,807	94	26,771	11	71	7	89																	
	Rural	2,783	64,201	5,685	72,669	81,734	3	364,786	89	86,534	3	74	7	84																	
	Total	5,642	83,144	7,659	96,445	106,955	5	508,593	90	113,305	5	73	7	85																	

Table 8.2.7 Public School Students and Public Utilities Coverage in Phase I Provided by Existing Facilities in the Base Year

Municipality	Public School Students				Public Toilets				
	Std. No. of Students that can be Served by Base Year (1995)	Coverage in 1995		Coverage in 2000		Coverage in 1995		Coverage in 2000	
		Total No. of Public School Students	%	Total No. of Public School Students	%	No. of PU in Base Year	No. of PU with Sanitary Toilets in Base Year (1995)	%	No. of PU with Sanitary Toilets
Atilim	1,333	100	1,460	91	0	0	0	0	
Banayovo	1,340	100	1,525	88	0	0	0	0	
Bantuy	3,552	100	4,167	85	3	3	100	3	
Burgos	1,942	100	2,192	89	0	0	0	0	
Cabugao	4,450	96	5,228	85	1	1	100	1	
Candon	5,300	58	10,620	50	2	2	100	2	
Caoayan	2,377	100	2,640	90	0	0	0	0	
Cervantes	1,600	64	3,019	53	1	0	0	0	
Galmuyod	850	59	1,688	50	0	0	0	0	
G. del Pilar	552	100	622	89	0	0	0	0	
Ludlidda	694	100	797	87	0	0	0	0	
Maestral	3,450	100	4,761	72	1	1	100	1	
Naybukel	1,151	100	1,150	100	0	0	0	0	
Narvacan	8,453	100	9,787	86	2	2	100	2	
Quirino	1,100	78	1,550	71	1	1	100	1	
Salcedo	2,050	89	2,604	79	1	1	100	1	
San Emilio	400	35	1,375	29	0	0	0	0	
San Esteban	1,279	100	1,435	89	0	0	0	0	
San Ildefonso	749	100	892	84	1	1	100	1	
San Juan	5,086	100	5,797	88	1	1	100	1	
San Vicente	900	64	1,640	55	1	1	100	1	
Santa	2,339	100	2,608	90	1	1	100	1	
Santa Catalina	1,450	70	2,368	61	0	0	0	0	
Santa Cruz	3,650	50	6,488	56	1	1	100	1	
Santa Lucia	1,600	37	5,177	31	1	1	100	1	
Santa Mina	5,452	100	6,089	90	1	1	100	1	
Santiago	1,850	64	3,479	53	1	0	0	0	
Santo Domingo	4,097	100	4,698	87	1	1	100	1	
Sugay	300	73	464	65	0	0	0	0	
Sinalit	5,520	100	6,217	89	1	1	100	2	
Suepon	600	94	675	89	0	0	0	0	
Suvo	1,500	75	2,338	64	0	0	0	0	
Tagudin	6,799	100	9,107	75	1	1	100	1	
Vigan (Capital)	10,152	100	10,671	95	7	7	100	8	
Provincial Total	93,917	87	125,334	75	30	28	93	33	

Note: PU - Public Utilities

8.3 Projection of Frame Values

8.3.1 Review of Past Population Development and Population Projection

(1) Review of past population development

1) Characteristics of past population development

Major statistical data of past population development are shown in Table 8.3.1 in which urban and rural population are adjusted by PPDO to reflect present conditions.

Provinces presently belonging to CAR are excluded from the regional population.

Table 8.3.1 Past Population Development

Area	Description	Total		Urban		Rural	
		1980	1990	1980	1990	1980	1990
Region I	Population	2,954,340	3,550,606	733,313	1,346,213	2,221,027	2,204,393
	Growth Rate	1.9%		6.3%		-0.1%	
Ilocos Sur	Population	443,591	519,930	109,546	123,597	334,045	396,333
	Growth Rate	1.6%		1.2%		1.7%	
	Percentage I/	15.0%	14.6%	14.9%	9.2%	15.0%	18.0%

Note: I/ Provincial population percentage to regional population

During the census decade from 1980 to 1990, the following population development was observed:

- The province recorded 1.6% of average annual growth rate which was almost equivalent to that of the region at 1.9%.
- Percentage of provincial population to the regional population slightly decreased from 15.0% in 1980 to 14.6% in 1990 affected by urban population behavior.

The region is classified as an out-migration group in the country. However, higher growth rate of rural population in the province than that of the region revealed that the migration was brought from neighboring mountainous provinces. While, lower growth rate of urban population in the province compared to that of the region coincides with the conservative economic activities in the province as discussed in Chapter 3.

2) 1990 population distribution in urban and rural areas

The 1990 population census results conducted by NSO were reviewed in terms of population distribution to urban and rural areas. In application of revised classification of barangays in urban and rural category to reflect present conditions, the population by municipality was adjusted as shown in Table 8.3.2.

Table 8.3.2 Population Distribution in Urban and Rural Areas

Municipality	Total Population	1990 Census Data		Adjusted Population	
		Urban	Rural	Urban	Rural
Alilem	5,314	1,251	4,063	1,251	4,063
Banayoyo	5,864	778	5,086	778	5,086
Bantay	26,024	6,229	19,795	9,535	16,489
Burgos	9,601	1,211	8,390	1,411	8,190
Cabugao	27,997	7,635	20,362	7,635	20,362
Candon	43,473	6,922	36,551	6,922	36,551
Caocayan	15,637	6,507	9,130	6,507	9,130
Cervantes	12,476	2,319	10,157	2,319	10,157
Galimuyod	7,941	412	7,529	412	7,529
G. del Pilar	3,417	570	2,847	570	2,847
Lidlidda	3,515	1,127	2,388	1,127	2,388
Magsingal	22,271	4,251	18,020	4,949	17,322
Nagbukel	3,806	0	3,806	725	3,081
Narvacan	35,153	2,750	32,403	2,750	32,403
Quirino	6,623	1,234	5,389	1,234	5,389
Salcedo	9,397	1,287	8,110	1,287	8,110
San Emilio	5,649	1,970	3,679	1,970	3,679
San Esteban	6,327	718	5,609	718	5,609
San Hildelfonso	4,528	1,004	3,524	1,004	3,524
San Juan	20,328	3,329	16,999	3,329	16,999
San Vicente	9,989	1,106	8,883	1,106	8,883
Santa	12,570	1,713	10,857	1,713	10,857
Santa Catalina	11,388	8,190	3,198	1,224	10,164
Santa Cruz	28,764	4,129	24,635	4,129	24,635
Santa Lucia	20,504	2,163	18,341	2,163	18,341
Santa Maria	23,821	3,464	20,357	3,464	20,357
Santiago	14,427	2,238	12,189	2,238	12,189
Santo Domingo	20,720	2,702	18,018	2,702	18,018
Sigay	1,964	0	1,964	0	1,964
Sinait	21,779	2,795	18,984	2,795	18,984
Sugpon	2,844	889	1,955	889	1,955
Suyo	7,950	1,510	6,440	1,510	6,440
Tagudin	29,295	4,657	24,638	4,657	24,638
Vigan (Capital)	38,574	38,574	0	38,574	0
Provincial Total	519,930	125,634	394,296	123,597	396,333

(2) Review of the NSO regional population projection mainly on growth rates and the demographic conditions presented in the 1992 Philippine Yearbook

NSO projected population at regional level for the year 1995 and target years based on the 1990 population census considering some factors. In the study, annual growth rates on the projected population, by the NSO with ten years interval were calculated in application of a simple compounded formula as described below:

$$P_n = P_o \times (1 + r)^n$$

where, P_n : Population in n-th year

P_o : Population in the base year

r : Annual population growth rate

n : Growth period in year

Through the review of future regional population, it was learned that NSO projection coincides with the gradually declining annual growth rates; 1.39% from 1990 to 2000 and 1.10% from 2000 to 2010, while the last census decade from 1980 to 1990 recorded 1.96% (refer to Table 8.3.3). Thus, approximately 0.3% to 0.6% of the growth rate was discounted to every decade.

Review of "1992 Philippine Yearbook" delineated the following demographic characteristics of the region and province:

- The inter-regional migration pattern will continue as a major population development factor, however the migration rate will gradually decline through the future.
- The international migration, on the other hand, is insignificant to the population development.
- Fertility and mortality, another key factors of population growth, will moderately decline through the future, and the national family planning target set forth the family size to arrive at 4 persons/household by the year 2010.
- Population of the region and province belongs to low growth group in the country.

When the regional and provincial demographic characteristics are taken into account, the future provincial population is considered to remain under similar conditions as experienced in the last census decade, unless specific development takes place in the province.

(3) Estimation of present population (1995)

The present population in 1995 was estimated applying 1980-1990 average annual growth rate of respective municipalities (broken down to urban and rural areas) assuming

that the trend of past population development prevailed up to the present. Household size in 1995 is also assumed to be the same as that in 1990.

(4) Projection of provincial population by target year

Provincial population was projected by target year as shown in Table 8.3.3 in application of declining percentages of growth rates referring to the discounted growth rate of regional population projection as follows:

- Population in 2000 was projected from the base year 1995 applying the annual growth rate of 1.13% (29.1% discount to the growth rate of the province observed during the last census decade, 1980 to 1990).
- Population in 2010 with the base year of 2000 was projected applying the annual growth rate of 1.00% (although the rate of 0.89% was derived in application of 20.9% discount to the growth rate of the province adopted to 1996 to 2000, the rate of 1.00% was employed as the minimum growth rate for planning purpose).
- Present profile of population distribution both in urban and rural areas is assumed to prevail through the future.
- Household size in the year 2000 is assumed to be the same as the 1990 population census results, while that in the year 2010 was assumed to be 4 persons/household for the whole province in accordance with the target of the national family planning.

Table 8.3.3 Growth Rates and Population Projection for Target Years: Region and Province

	Growth Rate (%)				Population and Provincial Share in the Region		
	1980 - 1990	1991 - 1995	1996 - 2000	2000 - 2010	1990	2000	2010
Region I	1.96	1.39 (29.1)		1.10 (20.9)	3,550,606	4,189,000	4,672,000
Ilocos Sur	1.60	1.60	1.13	1.00	519,930 14.6%	596,096 14.2%	658,461 14.1%

Note: () shows percentage of growth rate decline from the previous period.

Table 8.3.4 shows provincial population by urban and rural area for the target years and the year 1995. Table 8.3.5 presents projected number of households for the target years.

Table 8.3.4 Provincial Population for Target Years

Area	Population/ Composition	1990	1995	2000	2010
Total	Population	519,930	563,529	596,096	658,461
Urban Area	Population	123,597	131,439	139,035	153,582
	Composition (%)	24	23	23	23
Rural Area	Population	396,333	432,090	457,061	504,879
	Composition (%)	76	77	77	77

Table 8.3.5 Projected Number of Households by Urban and Rural Area by Municipality by Target Year

Municipality	Number of Households														
	Household Size			1990			1995			2000			2010		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Alitern	5.3	5.6	5.5	235	729	964	265	773	1,038	282	814	1,096	412	1,258	1,670
Banayoyo	5.0	5.6	5.5	155	914	1,069	163	991	1,154	173	1,041	1,214	239	1,610	1,849
Bantay	5.2	5.4	5.3	1,819	3,051	4,870	1,927	3,340	5,267	2,054	3,533	5,587	2,950	5,269	8,219
Burgos	5.1	5.2	5.2	279	1,563	1,842	295	1,678	1,973	310	1,789	2,099	436	2,569	3,005
Cabugao	5.0	5.3	5.2	1,516	3,829	5,345	1,568	4,152	5,720	1,672	4,409	6,081	2,309	6,453	8,762
Candon	5.2	5.3	5.3	1,339	6,833	8,172	1,398	7,484	8,882	1,471	7,992	9,463	2,112	11,697	13,809
Caocayan	5.0	5.1	5.1	1,289	1,783	3,072	1,344	1,895	3,239	1,436	2,012	3,448	1,983	2,834	4,817
Cervantes	5.7	5.4	5.5	404	1,878	2,282	454	2,145	2,599	484	2,273	2,757	762	3,389	4,151
Galimuyod	5.3	5.4	5.4	78	1,387	1,465	81	1,528	1,609	86	1,625	1,711	126	2,424	2,550
G. del Pilar	5.1	5.5	5.4	112	515	627	119	541	660	126	575	701	177	874	1,051
Laditida	5.1	5.3	5.2	222	452	674	245	519	764	259	547	806	364	800	1,164
Magsingal	4.9	5.3	5.2	1,014	3,277	4,291	1,082	3,539	4,621	1,139	3,737	4,876	1,542	5,469	7,011
Nagbukel	5.1	5.2	5.1	142	598	740	143	624	767	152	654	806	214	940	1,154
Narvacan	5.2	5.1	5.1	529	6,333	6,862	542	6,801	7,343	573	7,222	7,795	823	10,172	10,995
Outirno	5.1	5.3	5.3	240	1,011	1,251	269	1,132	1,401	286	1,204	1,490	404	1,763	2,167
Salcedo	4.9	5.1	5.0	261	1,601	1,862	273	1,707	1,980	290	1,795	2,085	393	2,528	2,921
San Emilio	5.5	5.4	5.4	356	687	1,043	416	766	1,182	443	804	1,247	673	1,199	1,872
San Esteban	5.1	4.9	5.0	141	1,136	1,277	148	1,221	1,369	156	1,302	1,458	220	1,763	1,983
San Idefonso	5.2	5.4	5.3	194	656	850	198	753	951	208	793	1,001	299	1,182	1,481
San Juan	4.8	5.1	5.1	692	3,309	4,001	707	3,612	4,319	749	3,851	4,600	993	5,423	6,416
San Vicente	5.4	5.0	5.1	203	1,763	1,966	219	1,913	2,132	234	2,040	2,274	349	2,817	3,166
Santa	4.8	5.2	5.2	359	2,072	2,431	363	2,194	2,557	381	2,339	2,720	506	3,358	3,864
Santa Catalina	5.3	5.5	5.4	229	1,864	2,093	233	2,031	2,264	248	2,129	2,377	363	3,233	3,596
Santa Cruz	5.1	5.4	5.4	803	4,541	5,344	868	5,101	5,969	925	5,425	6,350	1,303	8,091	9,394
Santa Lucia	5.2	5.5	5.5	413	3,338	3,751	431	3,651	4,082	459	3,855	4,314	659	5,856	6,515
Santa Maria	5.0	5.2	5.1	696	3,948	4,644	732	4,175	4,907	771	4,382	5,153	1,065	6,293	7,358
Santiago	5.4	5.5	5.4	415	2,235	2,650	442	2,485	2,927	467	2,605	3,072	697	3,956	4,653
Santo Domingo	5.1	5.3	5.2	529	3,429	3,958	577	3,705	4,282	612	3,382	4,494	862	5,682	6,544
Sigay	0	6	6	0	340	340	0	361	361	0	381	381	0	610	610
Sinait	5	5	5	543	3,954	4,497	561	4,250	4,811	600	4,496	5,096	845	5,960	6,805
Sugpon	5	6	5	175	349	524	192	323	515	202	342	544	285	529	814
Suyo	6	5	5	261	1,219	1,480	309	1,335	1,644	327	1,406	1,733	523	2,059	2,582
Tayudin	6	6	6	853	4,415	5,268	889	5,009	5,898	933	5,280	6,213	1,418	8,165	9,583
Vigan (Capital)	5	0	5	7,239	0	7,239	7,768	0	7,768	8,263	0	8,263	12,095	0	12,095
Provincial Total	5	5	5	23,735	75,009	98,744	25,221	81,734	106,955	26,771	86,534	113,305	38,401	126,225	164,620

8.3.2 School Enrollment Projection

Table 8.3.6 Projected School Enrollment by Municipality by Target Year

Municipality	1995						2000						2010						
	School Age Population		Total Enrollment		Public School Enrollment		School Age Population		Total Enrollment		Public School Enrollment		School Age Population		Total Enrollment		Public School Enrollment		
	Number	Participation Rate	Number	Participation Rate	Number	Participation Rate	Number	Participation Rate	Number	Participation Rate	Number	Participation Rate	Number	Participation Rate	Number	Participation Rate	Number	Participation Rate	
Ahitan	1,453	92	1,333	92	1,537	95	1,460	95	1,460	95	1,460	95	1,626	98	1,593	98	1,593	98	
Banayoro	1,619	83	1,340	83	1,713	83	1,525	89	1,525	89	1,525	89	1,812	95	1,721	95	1,721	95	
Bantay	7,163	6,075	85	3,552	50	7,577	4,546	60	4,167	55	8,015	6,572	82	5,691	71	5,691	71	5,691	71
Burgos	2,691	2,103	78	1,942	72	2,847	2,363	83	2,192	77	3,012	2,631	88	2,500	83	2,500	83	2,500	83
Cabucano	7,722	5,845	76	4,612	60	8,168	6,616	81	5,228	64	8,640	7,430	86	6,134	71	6,134	71	6,134	71
Candian	12,395	10,888	88	9,147	74	13,111	12,587	96	10,620	81	13,869	13,869	100	12,482	90	12,482	90	12,482	90
Canaan	3,961	2,377	60	2,377	60	4,190	2,640	63	2,640	63	4,432	2,925	66	2,925	66	2,925	66	2,925	66
Cervantes	4,077	2,719	67	2,509	62	4,313	3,105	72	3,019	70	4,562	3,969	87	3,422	75	3,422	75	3,422	75
Galimayod	2,127	1,531	72	1,451	68	2,250	1,778	79	1,688	75	2,380	2,071	87	1,975	83	1,975	83	1,975	83
G. del Pilar	865	670	77	552	64	915	741	81	622	68	968	823	85	707	73	707	73	707	73
Ladinda	1,005	694	69	694	69	1,063	797	75	797	75	1,124	910	81	910	81	910	81	910	81
Magsangal	6,429	4,733	74	3,466	54	6,801	5,441	80	4,761	70	7,194	6,187	86	5,611	78	5,611	78	5,611	78
Magsabiel	1,016	1,151	113	1,151	113	1,075	1,150	107	1,150	107	1,150	1,137	100	1,137	100	1,137	100	1,137	100
Narvacan	9,441	9,324	99	8,453	90	9,987	9,987	100	9,787	98	10,564	10,564	100	10,564	100	10,564	100	10,564	100
Quirino	1,878	1,804	96	1,412	75	1,987	1,947	98	1,550	78	2,102	2,081	99	1,997	95	1,997	95	1,997	95
Salcedo	2,591	2,486	96	2,312	89	2,741	2,686	98	2,604	95	2,899	2,870	99	2,783	96	2,783	96	2,783	96
San Emilio	1,608	1,252	78	1,138	71	1,698	1,443	85	1,375	81	1,796	1,670	93	1,616	90	1,616	90	1,616	90
San Esteban	1,674	1,447	86	1,279	76	1,771	1,629	92	1,435	81	1,873	1,836	98	1,667	89	1,667	89	1,667	89
San Hdefonso	1,298	749	58	744	58	1,373	892	65	892	65	1,452	1,350	93	1,350	93	1,350	93	1,350	93
San Juan	5,592	5,192	93	5,086	91	5,915	5,915	100	5,797	98	6,257	6,257	100	6,257	100	6,257	100	6,257	100
San Vicente	2,720	1,578	58	1,407	52	2,877	1,813	63	1,640	57	3,043	2,982	98	2,830	93	2,830	93	2,830	93
Santa	3,202	2,578	81	2,319	73	3,387	2,879	85	2,608	77	3,583	3,225	90	2,938	82	2,938	82	2,938	82
Santa Catalina	2,985	2,262	76	2,069	69	3,157	2,589	82	2,368	75	3,339	2,938	88	2,738	82	2,738	82	2,738	82
Santa Cruz	8,519	6,810	80	5,201	61	9,011	8,020	89	6,488	72	9,532	9,437	99	8,102	85	8,102	85	8,102	85
Santa Lucib	5,758	5,612	97	4,271	74	6,091	6,091	100	5,177	85	6,443	6,443	100	6,314	98	6,314	98	6,314	98
Santa Maria	6,395	5,728	90	5,452	85	6,765	6,427	95	6,089	90	7,156	7,013	98	6,870	96	6,870	96	6,870	96
Santiago	4,111	3,462	84	2,906	71	4,349	4,045	93	3,479	80	4,600	4,462	97	4,324	94	4,324	94	4,324	94
Santo Domingo	5,622	4,452	79	4,097	73	5,947	5,055	85	4,698	79	6,291	5,725	91	5,410	86	5,410	86	5,410	86
Sitav	516	412	80	412	80	546	464	85	464	85	578	526	91	526	91	526	91	526	91
Smit	5,877	5,520	94	5,520	94	6,217	6,217	100	6,217	100	6,576	6,576	100	6,576	100	6,576	100	6,576	100
Sugron	742	640	86	640	86	785	675	86	675	86	830	747	90	747	90	747	90	747	90
Suyo	2,561	1,987	88	1,987	88	2,386	2,338	98	2,338	98	2,524	2,524	100	2,524	100	2,524	100	2,524	100
Taguin	8,609	8,980	104	6,799	79	9,107	9,289	102	9,107	100	9,633	9,633	100	9,450	98	9,450	98	9,450	98
Vient (Capital)	10,094	15,567	154	10,152	101	10,677	11,318	106	10,677	106	11,294	11,294	100	10,729	95	10,729	95	10,729	95
Provincial Total	144,008	129,830	90	107,807	75	152,334	136,468	90	125,334	82	161,136	157,011	94	143,110	89	143,110	89	143,110	89

8.3.3 Projection of the Number of Public Utilities

Table 8.3.7 Projected Number of Public Utilities by Municipality by Target Year

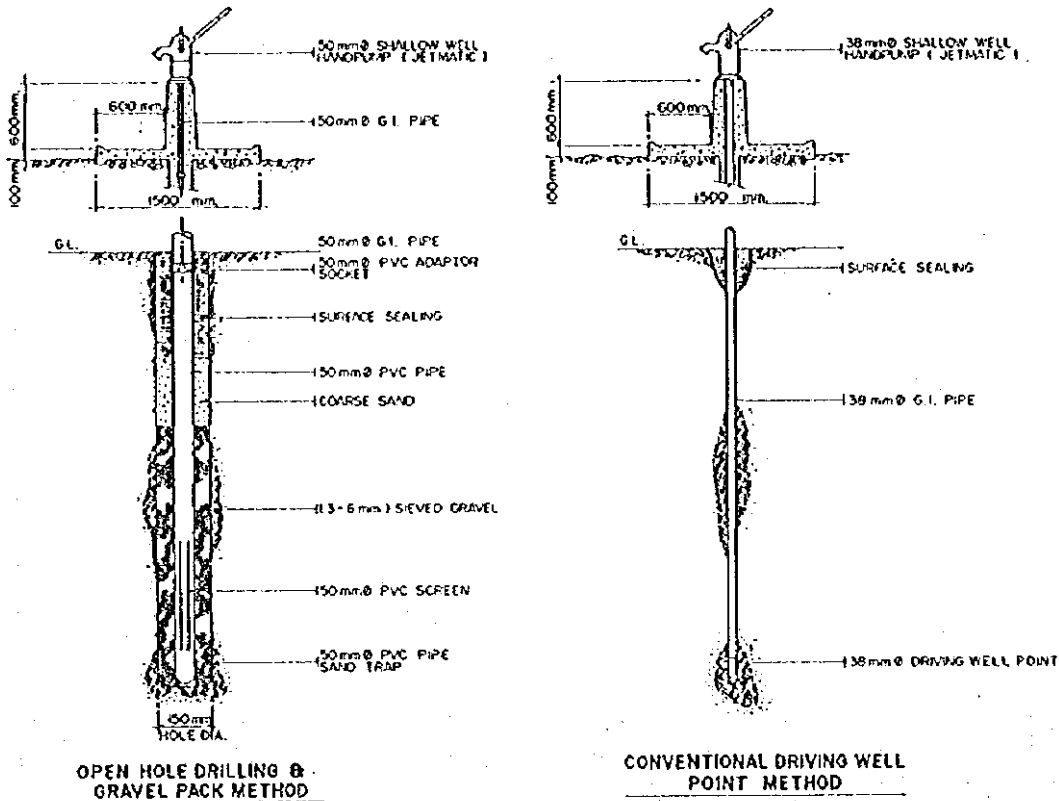
Municipality	Type	1995	2000		2010	
		No. of Public Utilities	Proposed Construction	Total	Proposed Construction	Total
Alilem	Public Markets	0		0	1	1
	Bus/Jeep Term.	0		0	1	1
	Total	0	0	0	2	2
Banayoyo	Public Markets	0		0		0
	Bus/Jeep Term.	0		0	1	1
	Total	0	0	0	1	1
Bantay	Public Markets	0		0		0
	Bus/Jeep Term.	3		3		3
	Total	3	0	3	0	3
Burgos	Public Markets	0		0		0
	Bus/Jeep Term.	0		0		0
	Total	0	0	0	0	0
Cabugao	Public Markets	1		1		1
	Bus/Jeep Term.	0		0	2	2
	Total	1	0	1	2	3
Candon	Public Markets	1		1		1
	Bus/Jeep Term.	1		1	2	3
	Total	2	0	2	2	4
Caoayan	Public Markets	0		0		0
	Bus/Jeep Term.	0		0	1	1
	Total	0	0	0	1	1
Cervantes	Public Markets	1		1		1
	Bus/Jeep Term.	0	1	1		1
	Total	1	1	2	0	2
Galimuyod	Public Markets	0		0		0
	Bus/Jeep Term.	0		0		0
	Total	0	0	0	0	0
G. del Pilar	Public Markets	0		0	1	1
	Bus/Jeep Term.	0		0	1	1
	Total	0	0	0	2	2
Lidlidda	Public Markets	0		0	1	1
	Bus/Jeep Term.	0		0	1	1
	Total	0	0	0	2	2
Magsingal	Public Markets	1		1		1
	Bus/Jeep Term.	0		0		0
	Total	1	0	1	0	1
Nagbukel	Public Markets	0		0		0
	Bus/Jeep Term.	0		0	1	1
	Total	0	0	0	1	1
Narvacan	Public Markets	1		1		1
	Bus/Jeep Term.	1		1	1	2
	Total	2	0	2	1	3
Quirino	Public Markets	1		1		1
	Bus/Jeep Term.	0		0	1	1
	Total	1	0	1	1	2
Salcedo	Public Markets	1		1		1
	Bus/Jeep Term.	0		0	1	1
	Total	1	0	1	1	2
San Emilio	Public Markets	0		0		0
	Bus/Jeep Term.	0		0	1	1
	Total	0	0	0	1	1

Table 8.3.7 Projected Number of Public Utilities by Municipality by Target Year
(Cont'd.)

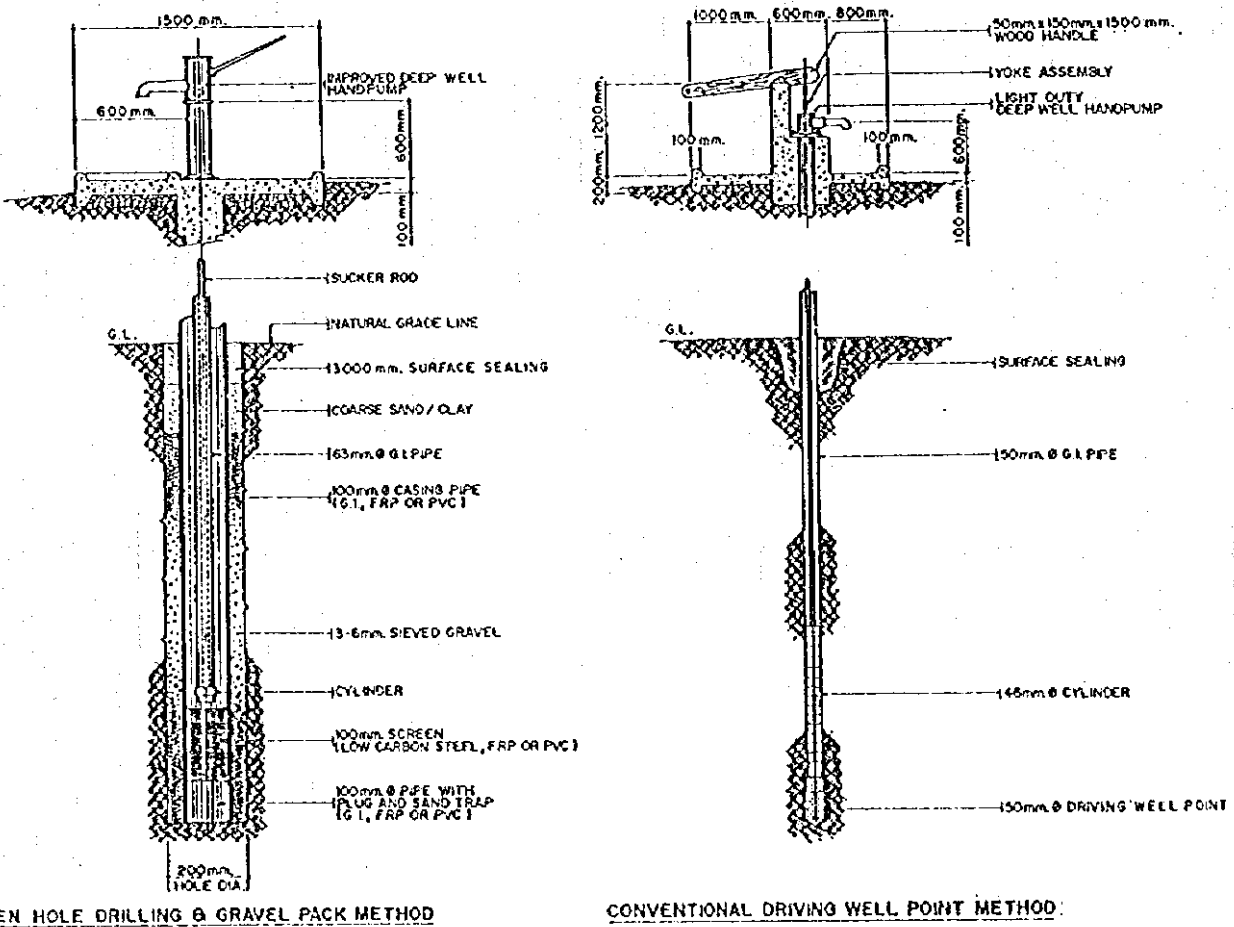
Municipality	Type	1995	2000		2010	
		No. of Public Utilities	Proposed Construction	Total	Proposed Construction	Total
San Esteban	Public Markets	0		0	1	1
	Bus/Jeep Term.	0		0		0
	Total	0	0	0	1	1
San Idelfonso	Public Markets	1		1		1
	Bus/Jeep Term.	0		0		0
	Total	1	0	1	0	1
San Juan	Public Markets	1		1		1
	Bus/Jeep Term.	0		0		0
	Total	1	0	1	0	1
San Vicente	Public Markets	1		1		1
	Bus/Jeep Term.	0		0		0
	Total	1	0	1	0	1
Santa	Public Markets	1		1		1
	Bus/Jeep Term.	0		0		0
	Total	1	0	1	0	1
Santa Catalina	Public Markets	0		0		0
	Bus/Jeep Term.	0		0		0
	Total	0	0	0	0	0
Santa Cruz	Public Markets	1		1		1
	Bus/Jeep Term.	0		0	1	1
	Total	1	0	1	1	2
Santa Lucia	Public Markets	1		1		1
	Bus/Jeep Term.	0		0		0
	Total	1	0	1	0	1
Santa Maria	Public Markets	1		1		1
	Bus/Jeep Term.	0		0	1	1
	Total	1	0	1	1	2
Santiago	Public Markets	1		1		1
	Bus/Jeep Term.	0		0		0
	Total	1	0	1	0	1
Santo Domingo	Public Markets	1		1		1
	Bus/Jeep Term.	0		0	1	1
	Total	1	0	1	1	2
Sigay	Public Markets	0		0	1	1
	Bus/Jeep Term.	0		0		0
	Total	0	0	0	1	1
Sinait	Public Markets	1		1		1
	Bus/Jeep Term.	0	1	1	1	2
	Total	1	1	2	1	3
Sugpon	Public Markets	0		0	1	1
	Bus/Jeep Term.	0		0	1	1
	Total	0	0	0	2	2
Suyo	Public Markets	0		0	1	1
	Bus/Jeep Term.	0		0	1	1
	Total	0	0	0	2	2
Tagudin	Public Markets	1		1		1
	Bus/Jeep Term.	0		0	2	2
	Total	1	0	1	2	3
Vigan (Capital)	Public Markets	1	1	2		2
	Bus/Jeep Term.	6		6		6
	Total	7	1	8	0	8
Provincial Total	Public Markets	19	1	20	7	27
	Bus/Jeep Term.	11	2	13	22	35
	Total	30	3	33	29	62

8.4 Types of Facilities and Implementation Criteria

8.4.1 Water Supply



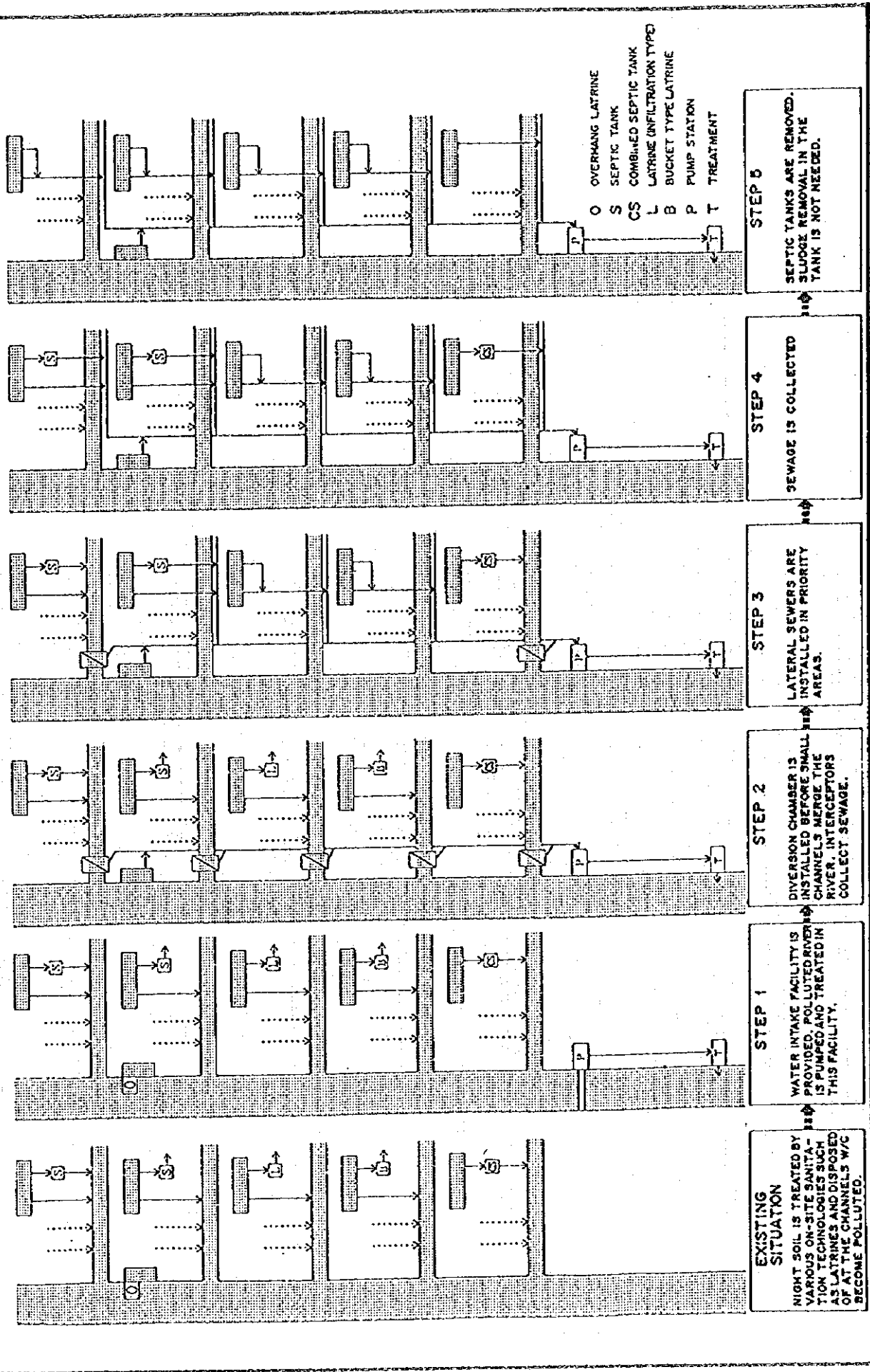
SHALLOW WELLS



DEEP WELLS

FIGURE 8.4.1
STANDARD STRUCTURE OF LEVEL I WELLS

FIGURE 8.4.2 STAGED IMPROVEMENT IN SEWAGE COLLECTION METHOD



8.5 Service Coverage by Target Year

8.5.1 Water Supply

(1) Population to be served by Level II system in Phase I

Eight (8) untapped spring sources were confirmed to be suitable for Level II systems in rural water supply by the time of PW4SP preparation as shown in Table 8.5.1. Conditions and assumptions applied for this estimate are as follows:

Source capacity:

The average source capacity of untapped spring was assumed to meet the need of 100 households based on the review of existing Level II systems with spring sources.

Number of system:

Eight (8) untapped springs were considered to serve eight (8) Level II systems in eight (8) rural barangays of six (6) municipalities.

(2) Population to be served by target year

Phase I

For urban area, the additional service coverage was estimated to be served by Level III service. For rural area, the population to be served by Level II systems with untapped springs was firstly calculated and the rest of additional service coverage was estimated to be served by Level I facilities.

Phase II

For urban area, the population served by Level I and II facilities in base year was considered to be absorbed by Level III service aside from the additional service coverage to be estimated by the sector target. For rural area, all existing facilities in Phase I was assumed to be utilized through the future.

The population to be served by target year is exhibited in Table 8.5.2 and Table 8.5.3.

Table 8.5.1 Population to be Served by Level II System in Phase I

Municipality	Number of Untapped Spring	Number of Barangay to be Served	Number of Households to be Served	Population to be Served
Alilem	0	0	0	0
Banayoyo	0	0	0	0
Bantay	0	0	0	0
Burgos	1	1	100	520
Cabugao	0	0	0	0
Candon	0	0	0	0
Caoayan	0	0	0	0
Cervantes	0	0	0	0
Galimuyod	0	0	0	0
G. del Pilar	1	1	100	550
Lidlidda	0	0	0	0
Magsingal	1	1	100	530
Nagbukel	1	1	100	520
Narvacan	0	0	0	0
Quirino	3	3	300	1,590
Salcedo	0	0	0	0
San Emilio	0	0	0	0
San Esteban	0	0	0	0
San Ildelfonso	0	0	0	0
San Juan	0	0	0	0
San Vicente	0	0	0	0
Santa	1	1	100	520
Santa Catalina	0	0	0	0
Santa Cruz	0	0	0	0
Santa Lucia	0	0	0	0
Santa Maria	0	0	0	0
Santiago	0	0	0	0
Santo Domingo	0	0	0	0
Sigay	0	0	0	0
Sinait	0	0	0	0
Sugpon	0	0	0	0
Suyo	0	0	0	0
Taogudin	0	0	0	0
Vigan (Capital)	0	0	0	0
Provincial Total	8	8	800	4,230

Table 8.5.2 Population to be Served in Phase I (Water Supply)

Municipalities	Type	Population Served in the Base Year						Phase I Coverage (2000)									
		Level III			Level II			Level III			Level II			Level I			
		Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total
Alibem	Urban	0	0	905	905	1,268	363	0	905	363	0	0	363	0	0	0	363
	Rural	0	0	1,758	1,758	3,873	0	0	3,873	0	0	0	3,873	0	0	0	2,115
	Total	0	0	2,663	2,663	5,141	363	0	4,778	363	0	0	4,778	0	0	0	2,115
Banpayoyo	Urban	0	0	685	685	735	50	0	685	50	0	0	685	50	0	0	50
	Rural	0	0	4,629	4,629	4,955	0	0	4,955	0	0	0	4,955	0	0	0	326
	Total	0	0	5,314	5,314	5,690	50	0	5,640	50	0	0	5,640	50	0	0	326
Bantay	Urban	1,150	0	6,020	7,170	9,080	3,060	0	6,020	1,910	0	0	6,020	1,910	0	0	1,910
	Rural	3,750	0	9,461	13,211	16,217	3,750	0	12,467	0	0	0	12,467	0	0	0	3,006
	Total	4,900	0	15,481	20,381	25,297	6,810	0	18,487	1,910	0	0	18,487	1,910	0	0	3,006
Burgos	Urban	0	0	899	899	1,343	444	0	899	444	0	0	899	444	0	0	444
	Rural	0	975	4,763	5,738	7,907	0	1,495	6,412	0	520	0	520	1,649	0	0	2,169
	Total	0	975	5,662	6,637	9,250	444	1,495	7,311	444	520	0	520	1,649	0	0	2,613
Cagbao	Urban	850	0	6,336	7,186	7,186	850	0	6,336	0	0	0	6,336	0	0	0	0
	Rural	1,710	0	17,454	19,164	19,862	1,710	0	18,152	0	0	0	18,152	0	0	0	698
	Total	2,560	0	23,790	26,350	27,048	2,560	0	24,488	0	0	0	24,488	0	0	0	698
Candon	Urban	0	0	4,560	4,560	6,500	1,940	0	4,560	1,940	0	0	4,560	1,940	0	0	1,940
	Rural	0	550	24,796	25,346	36,003	0	550	35,453	0	0	0	35,453	0	0	0	10,657
	Total	0	550	29,356	29,906	42,503	1,940	550	40,013	1,940	0	0	40,013	1,940	0	0	10,657
Caoyan	Urban	630	0	4,279	4,909	6,102	1,823	0	4,279	1,193	0	0	4,279	1,193	0	0	1,193
	Rural	1,700	0	4,167	5,867	8,722	1,700	0	7,022	0	0	0	7,022	0	0	0	2,855
	Total	2,330	0	8,446	10,776	14,824	3,523	0	11,301	1,193	0	0	11,301	1,193	0	0	2,855
Cervantes	Urban	0	0	1,863	1,863	2,345	482	0	1,863	482	0	0	1,863	482	0	0	482
	Rural	0	0	9,063	9,063	10,432	0	0	10,432	0	0	0	10,432	0	0	0	1,369
	Total	0	0	10,926	10,926	12,777	482	0	12,295	482	0	0	12,295	482	0	0	1,369
Galimuyod	Urban	0	0	375	375	387	12	0	375	12	0	0	375	12	0	0	12
	Rural	0	0	7,411	7,411	7,460	0	0	7,460	0	0	0	7,460	0	0	0	49
	Total	0	0	7,786	7,786	7,847	12	0	7,835	12	0	0	7,835	12	0	0	49

Table 8.5.2 Population to be Served in Phase I (Water Supply) (Cont'd.)

Municipalities	Type	Population Served in the Base Year					Phase I Coverage (2000)				Additional Population to be Served							
		Level III			Level II		Level I		Total		Service Coverage				Additional Population to be Served			
		Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	
C. del Pilar	Urban	600	0	0	600	600	0	0	642	600	0	0	600	0	0	0	0	
	Rural	800	550	1,407	2,757	800	550	1,407	3,165	2,757	800	550	1,407	0	0	0	0	
	Total	1,400	550	1,407	3,357	3,807	1,400	1,407	3,807	3,357	1,400	550	1,407	0	0	0	0	
Lidlidda	Urban	0	0	1,129	1,129	1,129	0	0	1,319	1,129	0	0	1,129	0	0	0	0	
	Rural	0	0	2,454	2,454	2,454	0	0	2,897	2,462	0	0	2,462	0	0	8	8	
	Total	0	0	3,583	3,583	4,216	0	0	4,216	3,591	0	0	3,591	0	0	8	8	
Magsingal	Urban	0	0	4,208	4,208	4,746	538	0	5,583	4,746	538	0	4,208	538	0	0	538	
	Rural	0	0	14,244	14,244	16,834	0	530	19,805	16,834	0	530	16,304	0	530	2,060	2,590	
	Total	0	0	18,452	18,452	21,580	538	530	25,388	21,580	538	530	20,512	538	530	2,060	3,128	
Nagbukel	Urban	0	0	469	469	658	189	0	774	658	189	0	469	189	0	0	189	
	Rural	0	50	2,030	2,080	2,892	0	570	3,402	2,892	0	570	2,322	0	520	292	812	
	Total	0	50	2,499	2,549	3,550	189	570	4,176	3,550	189	570	2,791	189	520	292	1,001	
Narvacan	Urban	874	0	1,040	1,914	2,532	1,492	0	2,979	2,532	1,492	0	1,040	618	0	0	618	
	Rural	0	450	18,344	18,794	31,308	0	450	36,833	31,308	0	450	30,858	0	0	12,514	12,514	
	Total	874	450	19,384	20,708	39,812	1,492	450	39,812	33,840	1,492	450	31,898	618	0	12,514	13,132	
Quirino	Urban	0	1,020	0	1,020	1,242	222	1,020	1,461	1,242	222	1,020	0	222	0	0	222	
	Rural	0	2,226	0	2,226	6,383	0	3,816	6,383	5,426	0	3,816	1,610	0	1,590	1,610	3,200	
	Total	0	3,246	0	3,246	7,844	222	4,836	7,844	6,668	222	4,836	1,610	222	1,590	1,610	3,422	
Salcedo	Urban	0	0	1,036	1,036	1,209	173	0	1,422	1,209	173	0	1,036	173	0	0	173	
	Rural	0	0	6,644	6,644	7,782	0	0	9,155	7,782	0	0	7,782	0	0	1,138	1,138	
	Total	0	0	7,680	7,680	8,991	173	0	10,577	8,991	173	0	8,818	173	0	1,138	1,311	
San Emilio	Urban	0	0	2,141	2,141	2,436	2,141	0	2,436	2,141	0	0	2,141	0	0	0	0	
	Rural	0	0	3,563	3,563	4,341	3,690	0	4,341	3,690	0	0	3,690	0	0	127	127	
	Total	0	0	5,704	5,704	6,777	5,831	0	6,777	5,831	0	0	5,831	0	0	127	127	
San Esteban	Urban	0	255	318	573	676	103	255	795	676	103	255	318	103	0	0	103	
	Rural	0	149	3,770	3,919	6,382	5,425	0	6,382	5,425	0	149	5,276	0	0	1,506	1,506	
	Total	0	404	4,088	4,492	7,177	6,101	103	7,177	6,101	103	404	5,594	103	0	1,506	1,609	
San Ildefonso	Urban	0	0	802	802	921	119	0	1,083	921	119	0	802	119	0	0	119	
	Rural	0	0	3,110	3,110	4,280	3,638	0	4,280	3,638	0	0	3,638	0	0	528	528	
	Total	0	0	3,912	3,912	5,363	4,559	119	5,363	4,559	119	0	4,440	119	0	528	647	

Table 8.5.2 Population to be Served in Phase I (Water Supply) (Cont'd.)

Municipalities	Type	Population Served in the Base Year					Total Population	Phase I Coverage (2000)						
		Level III		Level II		Total		Service Coverage			Additional Population to be Served			
		Level III	Level II	Level I	Total	Total		Level III	Level II	Level I	Level III	Level II	Level I	Total
San Juan	Urban	0	0	2,732	2,732	3,596	3,037	325	0	2,732	325	0	0	325
	Rural	0	325	14,462	14,787	19,638	16,692	0	325	16,367	0	0	1,905	1,905
	Total	0	325	17,194	17,519	23,234	19,749	325	325	19,099	325	0	1,905	2,230
San Vicente	Urban	0	0	1,063	1,063	1,262	1,073	10	0	1,063	10	0	0	10
	Rural	0	0	6,590	6,590	10,200	8,670	0	0	8,670	0	0	2,080	2,080
	Total	0	0	7,653	7,653	11,462	9,743	10	0	9,733	10	0	2,080	2,090
Santa	Urban	755	0	606	1,361	1,831	1,556	950	0	606	195	0	0	195
	Rural	95	494	6,942	7,531	12,161	10,337	95	1,014	9,228	0	520	2,286	2,806
	Total	850	494	7,548	8,892	13,992	11,893	1,045	1,014	9,834	195	520	2,286	3,001
Santa Catalina	Urban	0	0	941	941	1,314	1,117	176	0	941	176	0	0	176
	Rural	0	0	8,401	8,401	11,707	9,951	0	0	9,951	0	0	1,550	1,550
	Total	0	0	9,342	9,342	13,021	11,068	176	0	10,892	176	0	1,550	1,726
Santa Cruz	Urban	0	0	3,075	3,075	4,719	4,011	936	0	3,075	936	0	0	936
	Rural	0	1,075	18,448	19,523	29,297	24,902	0	1,075	23,827	0	0	5,379	5,379
	Total	0	1,075	21,523	22,598	34,016	28,913	936	1,075	26,902	936	0	5,379	6,315
Santa Lucía	Urban	920	0	896	1,816	2,386	2,028	1,132	0	896	212	0	0	212
	Rural	645	125	12,923	13,693	21,204	18,023	645	125	17,253	0	0	4,330	4,330
	Total	1,565	125	13,819	15,509	23,590	20,051	1,777	125	18,149	212	0	4,330	4,542
Santa María	Urban	0	0	1,947	1,947	3,855	3,277	1,330	0	1,947	1,330	0	0	1,330
	Rural	250	0	11,258	11,508	22,788	19,370	250	0	19,120	0	0	7,862	7,862
	Total	250	0	13,205	13,455	26,643	22,647	1,580	0	21,067	1,330	0	7,862	9,192
Santiago	Urban	335	75	1,361	1,771	2,523	2,145	709	75	1,361	374	0	0	374
	Rural	0	0	9,764	9,764	14,326	12,177	0	0	12,177	0	0	2,413	2,413
	Total	335	75	11,125	11,535	16,849	14,322	709	75	13,538	374	0	2,413	2,787
Santo Domingo	Urban	25	0	2,343	2,368	3,122	2,654	311	0	2,343	286	0	0	286
	Rural	10	475	15,779	16,264	20,574	17,488	10	475	17,003	0	0	1,224	1,224
	Total	35	475	18,122	18,632	23,696	20,142	321	475	19,346	286	0	1,224	1,510

Table 8.5.2 Population to be Served in Phase I (Water Supply) (Cont'd.)

Municipalities	Type	Population Served in the Base Year				Total Population	Phase I Coverage (2000)				Additional Population to be Served				
		Service Coverage			Total		Service Coverage			Total	Additional Population to be Served				
		Level III	Level II	Level I			Total	Level III	Level II		Level I	Level III	Level II	Level I	Total
Sigay	Urban	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rural	0	1,625	455	2,080	2,207	0	1,625	455	0	0	0	0	0	0
	Total	0	1,625	455	2,080	2,207	0	1,625	455	0	0	0	0	0	0
Sinait	Urban	995	0	1,896	2,891	3,058	995	0	1,896	0	0	0	0	0	0
	Rural	0	0	16,014	16,014	21,580	0	0	18,343	0	0	0	0	0	0
	Total	995	0	17,910	18,905	24,638	995	0	20,239	0	0	0	0	0	0
Sugpon	Urban	0	225	690	915	1,032	0	225	690	0	0	0	0	0	0
	Rural	0	1,175	0	1,175	1,915	0	1,175	453	0	0	0	0	0	0
	Total	0	1,400	690	2,090	2,947	0	1,400	1,143	0	0	0	0	0	0
Suyo	Urban	0	1,275	0	1,275	1,894	0	1,275	0	0	0	0	0	0	0
	Rural	0	4,700	294	4,994	7,454	0	4,700	1,636	0	0	0	0	0	0
	Total	0	5,975	294	6,269	9,348	0	5,975	1,636	0	0	0	0	0	0
Tagudin	Urban	2,660	0	1,674	4,334	5,133	2,689	0	1,674	0	0	0	0	0	0
	Rural	2,555	675	18,679	21,909	29,567	2,555	675	21,902	0	0	0	0	0	0
	Total	5,215	675	20,353	26,243	34,700	5,244	675	23,576	29	0	0	0	0	0
Vigan (Capital)	Urban	6,300	0	24,425	30,725	43,796	12,802	0	24,425	6,502	0	0	0	0	0
	Rural	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	6,300	0	24,425	30,725	43,796	12,802	0	24,425	6,502	0	0	0	0	0
Provincial Total	Urban	16,094	2,850	80,714	99,658	139,035	35,160	2,850	80,714	19,066	0	0	0	0	0
	Rural	11,515	15,619	279,077	306,211	457,061	388,774	11,515	19,299	357,960	0	3,680	78,883	82,563	
	Total	27,609	18,469	359,791	405,869	596,096	507,498	22,149	438,674	19,066	3,680	78,883	101,629		

Table 8.5.3 Population to be Served in Phase II (Water Supply)

Municipalities	Type	Population Served in 2000						Total Population	Phase II Coverage (2010)								
		Population Served in 2000			Total	Service Coverage			Additional Population to be Served								
		Level III	Level II	Level I		Level III	Level II		Level I	Level III	Level II	Level I	Total				
Alilem	Urban	363	0	905	1,268	1,566	1,648	1,566	0	0	0	1,203	0	0	0	1,203	
	Rural	0	0	3,873	3,873	4,781	5,033	4,781	0	0	4,781	0	0	0	0	908	908
	Total	363	0	4,778	5,141	6,347	6,681	6,347	1,566	0	4,781	1,203	0	0	908	2,111	
Banayoyo	Urban	50	0	685	735	907	955	907	907	0	0	857	0	0	0	857	
	Rural	0	0	4,955	4,955	6,117	6,439	6,117	0	0	6,117	0	0	0	1,162	1,162	
	Total	50	0	5,640	5,690	7,024	7,394	7,024	907	0	6,117	857	0	0	1,162	2,019	
Bantay	Urban	3,060	0	6,020	9,080	11,210	11,800	11,210	0	0	0	8,150	0	0	0	8,150	
	Rural	3,750	0	12,467	16,217	20,021	21,075	20,021	3,750	0	16,271	0	0	0	3,804	3,804	
	Total	6,810	0	18,487	25,297	31,231	32,875	31,231	14,960	0	16,271	8,150	0	0	3,804	11,954	
Burgos	Urban	444	0	899	1,343	1,658	1,745	1,658	0	0	0	1,214	0	0	0	1,214	
	Rural	0	0	1,495	1,495	9,761	10,275	9,761	0	1,495	8,266	0	0	0	1,854	1,854	
	Total	444	0	2,394	2,838	11,419	12,020	11,419	1,658	1,495	8,266	1,214	0	0	1,854	3,068	
Cabugao	Urban	850	0	6,336	7,186	8,774	9,236	8,774	0	0	0	7,924	0	0	0	7,924	
	Rural	1,710	0	18,152	19,862	24,520	25,811	24,520	1,710	0	22,810	0	0	0	4,658	4,658	
	Total	2,560	0	24,488	27,048	33,294	35,047	33,294	10,484	0	22,810	7,924	0	0	4,658	12,582	
Candon	Urban	1,940	0	4,560	6,500	8,025	8,447	8,025	0	0	0	6,085	0	0	0	6,085	
	Rural	0	0	35,453	36,003	44,449	46,788	44,449	0	550	43,899	0	0	0	8,446	8,446	
	Total	1,940	0	40,013	42,503	52,474	55,235	52,474	8,025	550	43,899	6,085	0	0	8,446	14,531	
Caoyan	Urban	1,823	0	4,279	6,102	7,534	7,930	7,534	0	0	0	5,711	0	0	0	5,711	
	Rural	1,700	0	7,022	8,722	10,768	11,335	10,768	1,700	0	9,068	0	0	0	2,046	2,046	
	Total	3,523	0	11,301	14,824	18,302	19,265	18,302	9,234	0	9,068	5,711	0	0	2,046	7,757	
Cervantes	Urban	482	0	1,863	2,345	2,896	3,048	2,896	0	0	0	2,414	0	0	0	2,414	
	Rural	0	0	10,432	10,432	12,879	13,557	12,879	0	0	12,879	0	0	0	2,447	2,447	
	Total	482	0	12,295	12,777	15,775	16,605	15,775	2,896	0	12,879	2,414	0	0	2,447	4,861	
Calimayod	Urban	12	0	375	387	478	503	478	0	0	0	466	0	0	0	466	
	Rural	0	0	7,460	7,460	9,210	9,695	9,210	0	0	9,210	0	0	0	1,750	1,750	
	Total	12	0	7,835	7,847	9,688	10,198	9,688	478	0	9,210	466	0	0	1,750	2,216	

Table 8.5.3 Population to be Served in Phase II (Water Supply) (Cont'd.)

Municipalities	Type	Population Served in 2000				Total Population	Phase II Coverage (2010)				Additional Population to be Served				
		Service Coverage			Total		Service Coverage			Total	Additional Population to be Served				
		Level III	Level II	Level I			Total	Level III	Level II		Level I	Level III	Level II	Level I	Total
G. del Pilar	Urban	600	0	0	600	709	674	0	674	0	0	74	0	0	74
	Rural	800	550	1,407	2,757	3,496	3,321	800	550	1,971	0	0	0	0	564
	Total	1,400	550	1,407	3,357	4,205	3,995	1,474	550	1,971	74	0	0	0	638
Lidlidda	Urban	0	0	1,129	1,129	1,457	1,384	0	1,384	0	0	1,384	0	0	1,384
	Rural	0	0	2,462	2,462	3,200	3,040	0	3,040	0	0	3,040	0	0	3,040
	Total	0	0	3,591	3,591	4,657	4,424	1,384	3,040	0	0	3,040	1,384	0	0
Magsingal	Urban	538	0	4,208	4,746	6,167	5,859	0	5,859	0	0	5,321	0	0	5,321
	Rural	0	530	16,304	16,834	21,877	20,783	0	530	20,253	0	0	0	0	3,949
	Total	538	530	20,512	21,580	28,044	26,642	5,859	530	20,253	5,321	0	0	0	9,270
Nagbukel	Urban	189	0	469	658	855	812	0	812	0	0	623	0	0	623
	Rural	0	570	2,322	2,892	3,758	3,570	0	570	3,000	0	0	0	0	678
	Total	189	570	2,791	3,550	4,613	4,382	812	570	3,000	623	0	0	0	1,301
Narvacan	Urban	1,492	0	1,040	2,532	3,291	3,126	0	3,126	0	0	1,634	0	0	1,634
	Rural	0	450	30,858	31,308	40,686	38,652	0	450	38,202	0	0	0	0	7,344
	Total	1,492	450	31,898	33,840	43,977	41,778	3,126	450	38,202	1,634	0	0	0	8,978
Quirino	Urban	222	1,020	0	1,242	1,614	1,533	0	1,533	0	0	1,311	0	0	1,311
	Rural	0	3,816	1,610	5,426	7,051	6,698	0	3,816	2,882	0	0	0	0	1,272
	Total	222	4,836	1,610	6,668	8,665	8,231	1,533	3,816	2,882	1,311	0	0	0	2,583
Salecedo	Urban	173	0	1,036	1,209	1,571	1,492	0	1,492	0	0	1,319	0	0	1,319
	Rural	0	0	7,782	7,782	10,113	9,607	0	9,607	0	0	9,607	0	0	1,825
	Total	173	0	8,818	8,991	11,684	11,099	1,492	9,607	0	0	9,607	1,319	0	0
San Emilio	Urban	0	0	2,141	2,141	2,691	2,556	0	2,556	0	0	2,556	0	0	2,556
	Rural	0	0	3,690	3,690	4,795	4,555	0	4,555	0	0	4,555	0	0	865
	Total	0	0	5,831	5,831	7,486	7,111	2,556	4,555	0	0	4,555	2,556	0	0
San Esteban	Urban	103	255	318	676	878	834	0	834	0	0	731	0	0	731
	Rural	0	149	5,276	5,425	7,050	6,698	0	149	6,549	0	0	0	0	1,273
	Total	103	404	5,594	6,101	7,928	7,532	834	149	6,549	731	0	0	0	2,004
San Ildefonso	Urban	119	0	802	921	1,196	1,136	0	1,136	0	0	1,017	0	0	1,017
	Rural	0	0	3,638	3,638	4,728	4,492	0	4,492	0	0	4,492	0	0	854
	Total	119	0	4,440	4,559	5,924	5,628	1,136	4,492	0	0	4,492	1,017	0	0

Table 8.5.3 Population to be Served in Phase II (Water Supply) (Cont'd.)

Municipalities	Type	Population Served in 2000				Phase II Coverage (2010)									
		Population Served in 2000			Total Population	Service Coverage			Additional Population to be Served						
		Level III	Level II	Level I		Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	
San Juan	Urban	325	0	2,732	3,057	3,773	3,773	0	0	0	3,448	0	0	0	3,448
	Rural	0	325	16,367	16,692	20,608	0	325	20,283	0	0	0	0	3,916	3,916
	Total	325	325	19,099	19,749	24,381	3,773	325	20,283	0	0	0	0	3,916	7,364
San Vicente	Urban	10	0	1,063	1,073	1,324	1,324	0	0	0	1,314	0	0	0	1,314
	Rural	0	0	8,670	8,670	10,704	0	0	10,704	0	0	0	2,034	2,034	
	Total	10	0	9,733	9,743	12,028	1,324	0	10,704	0	0	0	2,034	3,348	
Santa	Urban	950	0	606	1,556	1,922	1,922	0	0	0	972	0	0	0	972
	Rural	95	1,014	9,228	10,337	12,761	95	1,014	11,652	0	0	0	2,424	2,424	
	Total	1,045	1,014	9,834	11,893	14,683	2,017	1,014	11,652	0	0	0	2,424	3,396	
Santa Catalina	Urban	176	0	941	1,117	1,378	1,378	0	0	0	1,202	0	0	0	1,202
	Rural	0	0	9,951	9,951	12,932	0	0	12,285	0	0	0	2,334	2,334	
	Total	176	0	10,892	11,068	13,663	1,378	0	12,285	0	0	0	2,334	3,536	
Santa Cruz	Urban	936	0	3,075	4,011	4,952	4,952	0	0	0	4,016	0	0	0	4,016
	Rural	0	1,075	23,827	24,902	30,744	0	1,075	29,669	0	0	0	5,842	5,842	
	Total	936	1,075	26,902	28,913	35,696	4,952	1,075	29,669	0	0	0	5,842	9,858	
Santa Lucia	Urban	1,132	0	896	2,028	2,504	2,504	0	0	0	1,372	0	0	0	1,372
	Rural	645	125	17,253	18,023	22,251	645	125	21,481	0	0	0	4,228	4,228	
	Total	1,777	125	18,149	20,051	24,755	3,149	125	21,481	0	0	0	4,228	5,600	
Santa Maria	Urban	1,330	0	1,947	3,277	4,258	4,045	0	0	0	2,715	0	0	0	2,715
	Rural	250	0	19,120	19,370	23,172	250	0	23,663	0	0	0	4,543	4,543	
	Total	1,580	0	21,067	22,647	27,958	4,295	0	23,663	0	0	0	4,543	7,258	
Santiago	Urban	709	75	1,361	2,145	2,787	2,648	0	0	0	1,939	0	0	0	1,939
	Rural	0	0	12,177	12,177	15,825	0	0	15,034	0	0	0	2,857	2,857	
	Total	709	75	13,538	14,322	18,612	2,648	0	15,034	0	0	0	2,857	4,796	
Santo Domingo	Urban	311	0	2,343	2,654	3,277	3,277	0	0	0	2,966	0	0	0	2,966
	Rural	10	475	17,003	17,488	22,726	10	475	21,105	0	0	0	4,102	4,102	
	Total	321	475	19,346	20,142	24,867	3,287	475	21,105	0	0	0	4,102	7,068	

Table 8.5.3 Population to be Served in Phase II (Water Supply) (Cont'd.)

Municipalities	Type	Population Served in 2000				Total Population	Phase II Coverage (2010)				Additional Population to be Served						
		Service Coverage			Total		Service Coverage			Total	Additional Population to be Served			Total			
		Level III	Level II	Level I			Total	Level III	Level II		Level I	Level III	Level II		Level I		
Sigay	Urban	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Rural	0	1,625	455	2,080	2,438	0	1,625	691	0	0	0	0	0	236	236	
	Total	0	1,625	455	2,080	2,438	0	1,625	691	0	0	0	0	0	236	236	
Sinait	Urban	995	0	1,896	2,891	3,378	3,209	0	0	0	0	0	0	0	0	2,214	2,214
	Rural	0	0	18,343	18,343	23,838	22,646	0	0	0	0	0	0	0	0	4,303	4,303
	Total	995	0	20,239	21,234	27,216	25,855	3,209	0	0	0	0	0	0	0	4,303	6,517
Sugpon	Urban	0	225	690	915	1,140	1,083	0	0	0	0	0	0	0	0	1,083	1,083
	Rural	0	1,175	453	1,628	2,115	2,009	0	1,175	834	0	0	0	0	381	381	
	Total	0	1,400	1,143	2,543	3,255	3,092	1,083	1,175	834	0	0	0	0	381	1,464	
Suyo	Urban	335	1,275	0	1,610	2,092	1,987	1,987	0	0	0	0	0	0	0	1,652	1,652
	Rural	0	4,700	1,636	6,336	8,234	7,822	0	4,700	3,122	0	0	0	0	1,486	1,486	
	Total	335	5,975	1,636	7,946	10,326	9,809	1,987	4,700	3,122	1,652	0	0	0	1,486	3,138	
Tagudin	Urban	2,689	0	1,674	4,363	5,670	5,387	0	0	0	0	0	0	0	0	2,698	2,698
	Rural	2,555	675	21,902	25,132	32,660	31,027	2,555	675	27,797	0	0	0	0	5,895	5,895	
	Total	5,244	675	23,576	29,495	38,330	36,414	7,942	675	27,797	2,698	0	0	0	5,895	8,593	
Vigan (Capital)	Urban	12,802	0	24,425	37,227	48,378	45,959	45,959	0	0	0	0	0	0	0	33,157	33,157
	Rural	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	12,802	0	24,425	37,227	48,378	45,959	45,959	0	0	0	0	0	0	0	33,157	33,157
Provincial Total	Urban	35,160	2,850	80,714	118,724	153,582	145,902	145,902	0	0	0	0	0	0	0	110,742	110,742
	Rural	11,515	19,299	357,960	388,774	504,879	479,632	11,515	19,299	448,818	0	0	0	0	90,858	90,858	
	Total	46,675	22,149	438,674	507,498	658,461	625,534	157,417	19,299	448,818	110,742	0	0	0	90,858	201,600	

8.5.2 Sanitation

Table 8.5.4 Additional Number of Households to be Served in Phase I (Household Toilets)

Municipality	Area	No. of Households Served in the Base Year			No. of Households in 2000	Phase I Coverage (2000)								
		Flush	Pour Flush	VIP Latrine		Household Coverage			Additional No. of Households to be Served					
						Flush	Pour Flush	VIP Latrine	Flush	Pour Flush	VIP Latrine	Total		
Aillem	Urban	7	145	59	211	282	53	199	13	265	46	54	0	100
	Rural	0	411	199	610	814	0	727	38	765	0	316	0	316
	Total	7	556	258	821	1,096	53	926	51	1,030	46	370	0	416
Banayoyo	Urban	0	163	0	163	173	10	145	8	163	10	0	8	18
	Rural	0	916	28	944	1,041	0	930	49	979	0	14	21	35
	Total	0	1,079	28	1,107	1,214	10	1,075	57	1,142	10	14	29	53
Bantay	Urban	562	1,064	276	1,902	2,054	562	1,064	276	1,902	0	0	0	0
	Rural	170	2,468	137	2,775	3,533	332	2,823	166	3,321	162	355	29	546
	Total	732	3,532	413	4,677	5,587	894	3,887	442	5,223	162	355	29	546
Burgos	Urban	4	136	146	286	310	58	218	15	291	54	82	0	136
	Rural	49	1,358	73	1,480	1,789	49	1,549	84	1,682	0	191	11	202
	Total	53	1,494	219	1,766	2,099	107	1,767	99	1,973	54	273	11	338
Cabugao	Urban	205	1,299	39	1,543	1,672	205	1,288	79	1,572	0	0	40	40
	Rural	11	3,815	244	4,070	4,409	323	3,614	207	4,144	312	0	0	312
	Total	216	5,114	283	5,613	6,081	528	4,902	286	5,716	312	0	40	352
Candon	Urban	74	1,272	31	1,377	1,471	277	1,037	69	1,383	203	0	38	241
	Rural	147	6,983	250	7,380	7,992	147	6,989	376	7,512	0	6	126	132
	Total	221	8,255	281	8,757	9,463	424	8,026	445	8,895	203	6	164	373
Caoyan	Urban	172	883	189	1,244	1,436	270	1,013	67	1,350	98	130	0	228
	Rural	101	1,048	0	1,149	2,012	189	1,607	95	1,891	88	559	95	742
	Total	273	1,931	189	2,393	3,448	459	2,620	162	3,241	186	689	95	970
Cervantes	Urban	180	205	66	451	484	180	205	66	451	0	0	0	0
	Rural	404	741	773	1,918	2,273	404	1,626	107	2,137	0	885	0	885
	Total	584	946	839	2,369	2,757	584	1,831	173	2,588	0	885	0	885
Calimuyod	Urban	0	65	16	81	86	2	75	4	81	2	10	0	12
	Rural	4	1,499	23	1,526	1,625	4	1,448	76	1,528	0	0	53	53
	Total	4	1,564	39	1,607	1,711	6	1,523	80	1,609	2	10	53	65

Table 8.S.4 Additional Number of Households to be Served in Phase I (Household Toilets) (Cont'd.)

Municipality	Area	No. of Households Served in the Base Year			No. of Households in 2000	Phase I Coverage (2000)							
		Flush	Pour Flush	VIP Latrine		Household Coverage			Additional No. of Households to be Served				
						Flush	Pour Flush	VIP Latrine	Flush	Pour Flush	VIP Latrine	Total	
													Flush
G. del Pilar	Urban	30	76	13	119	30	76	13	119	0	0	0	0
	Rural	2	390	95	487	54	460	27	541	52	70	0	122
	Total	32	466	108	606	701	536	40	660	52	70	0	122
Lididda	Urban	0	224	11	235	0	231	12	243	0	7	1	8
	Rural	0	482	20	502	547	488	26	514	0	6	6	12
	Total	0	706	31	737	806	719	38	757	0	13	7	20
Magsingal	Urban	100	893	89	1,082	110	907	54	1,071	10	14	0	24
	Rural	110	2,680	746	3,536	3,737	3,227	176	3,513	0	547	0	547
	Total	210	3,573	835	4,618	4,876	4,134	230	4,584	10	561	0	571
Nagbukel	Urban	4	131	0	135	29	107	7	143	25	0	7	32
	Rural	0	327	23	350	654	584	31	615	0	257	8	265
	Total	4	458	23	485	806	691	38	758	25	257	15	297
Navacan	Urban	90	440	0	530	573	404	27	539	18	0	27	45
	Rural	360	5,524	0	5,884	7,222	6,090	339	6,789	0	566	339	905
	Total	450	5,964	0	6,414	7,795	6,494	366	7,328	18	566	366	950
Quirino	Urban	1	225	40	266	286	213	13	269	42	0	0	42
	Rural	0	640	414	1,054	1,204	1,075	57	1,132	0	435	0	435
	Total	1	865	454	1,320	1,490	1,288	70	1,401	42	435	0	477
Salecedo	Urban	5	261	7	273	290	224	14	273	30	0	7	37
	Rural	19	1,584	104	1,707	1,795	1,584	84	1,687	0	0	0	0
	Total	24	1,845	111	1,980	2,085	1,808	98	1,960	30	0	7	37
San Emilio	Urban	0	296	29	325	443	395	21	416	0	99	0	99
	Rural	0	307	0	307	804	718	38	756	0	411	38	449
	Total	0	603	29	632	1,247	1,113	59	1,172	0	510	38	548
San Esteban	Urban	10	128	0	138	156	120	7	147	10	0	7	17
	Rural	24	983	0	1,007	1,302	1,139	61	1,224	0	156	61	217
	Total	34	1,111	0	1,145	1,458	1,259	68	1,371	10	156	68	234
San Idefonso	Urban	24	151	0	175	208	162	10	196	0	11	10	21
	Rural	17	680	0	697	793	691	17	745	0	11	37	48
	Total	41	831	0	872	1,001	853	47	941	0	22	47	69

Table 8.5.4 Additional Number of Households to be Served in Phase I (Household Toilets) (Cont'd.)

Municipality	Area	No. of Households Served in the Base Year				No. of Households in 2000	Phase I Coverage (2000)							
		Flush	Pour Flush	VIP Latrine	Total		Household Coverage			Additional No. of Households to be Served				
							Flush	Pour Flush	VIP Latrine	Total	Flush	Pour Flush	VIP Latrine	Total
San Juan	Urban	25	616	53	694	749	68	601	35	704	43	0	0	43
	Rural	174	2,711	0	2,885	3,851	174	3,265	181	3,620	0	554	181	735
	Total	199	3,327	53	3,579	4,600	242	3,866	216	4,324	43	554	181	778
San Vicente	Urban	21	188	10	219	234	21	188	11	220	0	0	1	1
	Rural	80	1,200	144	1,424	2,040	80	1,742	96	1,918	0	542	0	542
	Total	101	1,388	154	1,643	2,274	101	1,930	107	2,138	0	542	1	543
Santa	Urban	28	279	48	355	381	72	268	18	358	44	0	0	44
	Rural	5	1,948	0	1,953	2,339	18	2,071	110	2,199	13	123	110	246
	Total	33	2,227	48	2,308	2,720	90	2,339	128	2,557	57	123	110	290
Santa Catalina	Urban	20	204	0	224	248	33	188	12	233	13	0	12	25
	Rural	124	1,797	7	1,928	2,129	124	1,777	100	2,001	0	0	93	93
	Total	144	2,001	7	2,152	2,377	157	1,965	112	2,234	13	0	105	118
Santa Cruz	Urban	11	724	77	812	925	174	653	43	870	163	0	0	163
	Rural	43	4,420	322	4,785	5,425	43	4,802	255	5,100	0	382	0	382
	Total	54	5,144	399	5,597	6,350	217	5,455	298	5,970	163	382	0	545
Santa Lucia	Urban	40	252	24	316	459	86	323	22	431	46	71	0	117
	Rural	47	2,732	497	3,276	3,855	117	3,326	181	3,624	70	594	0	664
	Total	87	2,984	521	3,592	4,314	203	3,649	203	4,055	116	665	0	781
Santa Maria	Urban	36	653	25	714	771	145	544	36	725	109	0	11	120
	Rural	32	3,782	53	3,867	4,382	48	3,865	206	4,119	16	83	153	252
	Total	68	4,435	78	4,581	5,153	193	4,409	242	4,844	125	83	164	372
Santiago	Urban	5	419	12	436	467	88	329	22	439	83	0	10	93
	Rural	593	1,322	227	2,142	2,605	593	1,322	227	2,142	0	0	0	0
	Total	598	1,741	239	2,578	3,072	681	1,651	249	2,581	83	0	10	93
Santo Domingo	Urban	14	550	0	564	612	61	485	29	575	47	0	29	76
	Rural	58	3,291	0	3,349	3,882	58	3,409	182	3,649	0	118	182	300
	Total	72	3,841	0	3,913	4,494	119	3,894	211	4,224	47	118	211	376

Table 8.5.4 Additional Number of Households to be Served in Phase I (Household Toilets) (Cont'd.)

Municipality	Area	No. of Households Served in the Base Year				No. of Households in 2000	Phase I Coverage (2000)								
		Flush	Pour Flush	VTP Latrine	Total		Household Coverage			Additional No. of Households to be Served					
							Flush	Pour Flush	VIP Latrine	Total	Flush	Pour Flush	VIP Latrine	Total	
Sigay	Urban	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rural	0	267	0	267	381	0	340	18	358	0	73	18	91	
	Total	0	267	0	267	381	0	340	18	358	0	73	18	91	
Sinait	Urban	35	519	7	561	600	113	423	28	564	78	0	21	99	
	Rural	3	3,266	423	3,692	4,496	3	4,012	211	4,226	0	746	0	746	
	Total	38	3,785	430	4,253	5,096	116	4,435	239	4,790	78	746	21	845	
Sugpon	Urban	0	83	87	170	202	0	181	9	190	0	98	0	98	
	Rural	0	118	162	280	342	0	305	16	321	0	187	0	187	
	Total	0	201	249	450	544	0	486	25	511	0	285	0	285	
Suyo	Urban	5	198	106	309	327	58	234	15	307	53	36	0	89	
	Rural	11	697	303	1,011	1,406	11	1,245	66	1,322	0	548	0	548	
	Total	16	895	409	1,320	1,733	69	1,479	81	1,629	53	584	0	637	
Tagudin	Urban	146	583	66	795	933	175	658	44	877	29	75	0	104	
	Rural	195	3,814	418	4,427	5,280	456	4,259	248	4,963	261	445	0	706	
	Total	341	4,397	484	5,222	6,213	631	4,917	292	5,840	290	520	0	810	
Vigan (Capital)	Urban	1,005	5,618	448	7,071	8,263	1,553	5,826	388	7,767	548	208	0	756	
	Rural	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	1,005	5,618	448	7,071	8,263	1,553	5,826	388	7,767	548	208	0	756	
Provincial Total	Urban	2,859	18,943	1,974	23,776	26,771	4,663	18,984	1,487	25,134	1,804	895	229	2,928	
	Rural	2,783	64,201	5,685	72,669	86,534	3,757	73,109	4,171	81,037	974	9,180	1,561	11,715	
	Total	5,642	83,144	7,659	96,445	113,305	8,420	92,093	5,658	106,171	2,778	10,075	1,790	14,643	

Table 8.5.5 Additional Number of Households to be Served in Phase II (Household Toilets)

Municipality	Area	No. of Households Served in 2000				No. of Households in 2010	Phase II Coverage (2010)							
		Flush	Pour Flush	VIP Latrine	Total		Households Coverage			Add'l No. of Households to be Served				
							Flush	Pour Flush	VIP Flush	Total	Flush	Pour Flush	VIP Flush	Total
Alilem	Urban	53	199	13	265	412	196	195	0	391	143	0	0	143
	Rural	0	727	38	765	1,258	0	1,195	0	1,195	0	468	0	468
	Total	53	926	51	1,030	1,670	196	1,390	0	1,586	143	468	0	611
Bansayoyo	Urban	10	145	8	163	239	114	113	0	227	104	0	0	104
	Rural	0	930	49	979	1,610	0	1,530	0	1,530	0	600	0	600
	Total	10	1,075	57	1,142	1,849	114	1,643	0	1,757	104	600	0	704
Bantay	Urban	562	1,064	276	1,902	2,950	1,401	1,402	0	2,803	839	338	0	1,177
	Rural	332	2,823	166	3,321	5,269	938	4,068	0	5,006	606	1,245	0	1,851
	Total	894	3,887	442	5,223	8,219	2,339	5,470	0	7,809	1,445	1,583	0	3,028
Burgos	Urban	58	218	15	291	436	207	207	0	414	149	0	0	149
	Rural	49	1,549	84	1,682	2,569	49	2,392	0	2,441	0	843	0	843
	Total	107	1,767	99	1,973	3,005	256	2,599	0	2,855	149	843	0	992
Cabugao	Urban	205	1,288	79	1,572	2,309	1,097	1,097	0	2,194	892	0	0	892
	Rural	323	3,614	207	4,144	6,453	428	5,702	0	6,130	105	2,088	0	2,193
	Total	528	4,902	286	5,716	8,762	1,525	6,799	0	8,324	997	2,088	0	3,085
Candon	Urban	277	1,037	69	1,383	2,112	1,003	1,003	0	2,006	726	0	0	726
	Rural	147	6,989	376	7,512	11,697	147	10,965	0	11,112	0	3,976	0	3,976
	Total	424	8,026	445	8,895	13,809	1,150	11,968	0	13,118	726	3,976	0	4,702
Caoyan	Urban	270	1,013	67	1,350	1,983	942	942	0	1,884	672	0	0	672
	Rural	189	1,607	95	1,891	2,834	425	2,267	0	2,692	236	660	0	896
	Total	459	2,620	162	3,241	4,817	1,367	3,209	0	4,576	908	660	0	1,568
Cervantes	Urban	180	205	66	451	762	362	362	0	724	182	157	0	339
	Rural	404	1,626	107	2,137	3,389	404	2,816	0	3,220	0	1,190	0	1,190
	Total	584	1,831	173	2,588	4,151	766	3,178	0	3,944	182	1,347	0	1,529
Galimuyod	Urban	2	75	4	81	126	60	60	0	120	58	0	0	58
	Rural	4	1,448	76	1,528	2,424	4	2,299	0	2,303	0	851	0	851
	Total	6	1,523	80	1,609	2,550	64	2,359	0	2,423	58	851	0	909

Table 8.5.5 Additional Number of Households to be Served in Phase II (Household Toilets) (Cont'd.)

Municipality	Area	No. of Households Served in 2000				No. of Households in 2010	Phase II Coverage (2010)							
		Flush	Pour Flush	VIP Latrine	Total		Households Coverage			Add'l No. of Households to be Served				
							Flush	Pour Flush	VIP Flush	Flush	Pour Flush	VIP Flush	Total	
C. del Pilar	Urban	30	76	13	119	177	84	84	0	168	54	8	0	62
	Rural	54	460	27	541	874	166	664	0	830	112	204	0	316
	Total	84	536	40	660	1,051	250	748	0	998	166	212	0	378
Ludhiana	Urban	0	231	12	243	364	173	173	0	346	173	0	0	173
	Rural	0	488	26	514	800	0	760	0	760	0	272	0	272
	Total	0	719	38	757	1,164	173	933	0	1,106	173	272	0	445
Magelang	Urban	110	907	54	1,071	1,542	732	733	0	1,465	622	0	0	622
	Rural	110	3,227	176	3,513	5,469	110	5,086	0	5,196	0	1,859	0	1,859
	Total	220	4,134	230	4,584	7,011	842	5,819	0	6,661	622	1,859	0	2,481
Nagbukel	Urban	29	107	7	143	214	102	101	0	203	73	0	0	73
	Rural	0	584	31	615	940	0	893	0	893	0	309	0	309
	Total	29	691	38	758	1,154	102	994	0	1,096	73	309	0	382
Narvacan	Urban	108	404	27	539	823	391	391	0	782	283	0	0	283
	Rural	360	6,090	339	6,789	10,172	360	9,303	0	9,663	0	3,213	0	3,213
	Total	468	6,494	366	7,328	10,995	751	9,694	0	10,445	283	3,213	0	3,496
Quirino	Urban	43	213	13	269	404	192	192	0	384	149	0	0	149
	Rural	0	1,075	57	1,132	1,763	0	1,675	0	1,675	0	600	0	600
	Total	43	1,288	70	1,401	2,167	192	1,867	0	2,059	149	600	0	749
Salcedo	Urban	35	224	14	273	393	187	186	0	373	152	0	0	152
	Rural	19	1,584	84	1,687	2,528	19	2,383	0	2,402	0	799	0	799
	Total	54	1,808	98	1,960	2,921	206	2,569	0	2,775	152	799	0	951
San Emilio	Urban	0	395	21	416	673	320	319	0	639	320	0	0	320
	Rural	0	718	38	756	1,199	0	1,139	0	1,139	0	421	0	421
	Total	0	1,113	59	1,172	1,872	320	1,458	0	1,778	320	421	0	741
San Esteban	Urban	20	120	7	147	220	105	104	0	209	85	0	0	85
	Rural	24	1,139	61	1,224	1,763	24	1,651	0	1,675	0	512	0	512
	Total	44	1,259	68	1,371	1,983	129	1,755	0	1,884	85	512	0	597
San Ildefonso	Urban	24	162	10	196	299	142	142	0	284	118	0	0	118
	Rural	17	691	37	745	1,182	17	1,106	0	1,123	0	415	0	415
	Total	41	853	47	941	1,481	159	1,248	0	1,407	118	415	0	533

Table 8.5.5 Additional Number of Households to be Served in Phase II (Household Toilets) (Cont'd.)

Municipality	Area	No. of Households Served in 2000			No. of Households in 2010	Phase II Coverage (2010)								
		Flush	Four Flush	VIP Latrine		Total	Households Coverage			Add'l No. of Households to be Served				
							Flush	VIP Flush	Total	Flush	VIP Flush	Total		
San Juan	Urban	68	601	35	704	993	472	471	0	943	404	0	0	404
	Rural	174	3,265	181	3,620	5,423	174	4,978	0	5,152	0	1,713	0	1,713
	Total	242	3,866	216	4,324	6,416	646	5,449	0	6,095	404	1,713	0	2,117
San Vicente	Urban	21	188	11	220	349	166	166	0	332	145	0	0	145
	Rural	80	1,742	96	1,918	2,817	80	2,596	0	2,676	0	854	0	854
	Total	101	1,930	107	2,138	3,166	246	2,762	0	3,008	145	854	0	999
Santa	Urban	72	268	18	358	506	240	241	0	481	168	0	0	168
	Rural	18	2,071	110	2,199	3,358	24	3,166	0	3,190	6	1,095	0	1,101
	Total	90	2,339	128	2,557	3,864	264	3,407	0	3,671	174	1,095	0	1,269
Santa Catalina	Urban	33	188	12	233	363	172	173	0	345	139	0	0	139
	Rural	124	1,777	100	2,001	3,233	124	2,947	0	3,071	0	1,170	0	1,170
	Total	157	1,965	112	2,234	3,596	296	3,120	0	3,416	139	1,170	0	1,309
Santa Cruz	Urban	174	653	43	870	1,303	619	619	0	1,238	445	0	0	445
	Rural	43	4,802	255	5,100	8,091	43	7,643	0	7,686	0	2,841	0	2,841
	Total	217	5,455	298	5,970	9,394	662	8,262	0	8,924	445	2,841	0	3,286
Santa Lucia	Urban	86	323	22	431	659	313	313	0	626	227	0	0	227
	Rural	117	3,326	181	3,624	5,856	161	5,402	0	5,563	44	2,076	0	2,120
	Total	203	3,649	203	4,055	6,515	474	5,715	0	6,189	271	2,076	0	2,347
Santa Maria	Urban	145	544	36	725	1,065	506	506	0	1,012	361	0	0	361
	Rural	48	3,865	206	4,119	6,293	63	5,915	0	5,978	15	2,050	0	2,065
	Total	193	4,409	242	4,844	7,358	569	6,421	0	6,990	376	2,050	0	2,426
Santiago	Urban	88	329	22	439	697	331	331	0	662	243	2	0	245
	Rural	593	1,322	227	2,142	3,956	593	3,165	0	3,758	0	1,843	0	1,843
	Total	681	1,651	249	2,581	4,653	924	3,496	0	4,420	243	1,845	0	2,088
Santo Domingo	Urban	61	485	29	575	862	409	410	0	819	348	0	0	348
	Rural	58	3,409	182	3,649	5,682	58	5,340	0	5,398	0	1,931	0	1,931
	Total	119	3,894	211	4,224	6,544	467	5,750	0	6,217	348	1,931	0	2,279

Table 8.5.5 Additional Number of Households to be Served in Phase II (Household Toilets) (Cont'd.)

Municipality	Area	No. of Households Served in 2000				No. of Households in 2010	Phase II Coverage (2010)											
		Flush	Pour Flush	VIP Latrine	Total		Households Coverage			Add'l No. of Households to be Served								
							Flush	Pour Flush	VIP Flush	Total	Flush	Pour Flush	VIP Flush	Total				
Sigay	Urban	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Rural	0	340	18	358	610	0	580	0	580	0	240	0	240	0	240	0	
	Total	0	340	18	358	610	0	580	0	580	0	240	0	240	0	240	0	
Sinait	Urban	113	423	28	564	845	401	402	0	803	288	0	0	0	0	0	0	288
	Rural	3	4,012	211	4,226	5,960	3	5,659	0	5,662	0	1,647	0	1,647	0	1,647	0	1,647
	Total	116	4,435	239	4,790	6,805	404	6,061	0	6,465	288	1,647	0	1,935	0	1,935	0	1,935
Sugpon	Urban	0	181	9	190	285	135	136	0	271	135	0	0	0	0	0	0	135
	Rural	0	305	16	321	529	0	503	0	503	0	198	0	198	0	198	0	198
	Total	0	486	25	511	814	135	639	0	774	135	198	0	333	0	333	0	333
Suyo	Urban	58	234	15	307	523	248	249	0	497	190	15	0	205	0	205	0	205
	Rural	11	1,245	66	1,322	2,059	11	1,945	0	1,956	0	700	0	700	0	700	0	700
	Total	69	1,479	81	1,629	2,582	259	2,194	0	2,453	190	715	0	905	0	905	0	905
Tagudin	Urban	175	658	44	877	1,418	674	673	0	1,347	499	15	0	514	0	514	0	514
	Rural	456	4,259	248	4,963	8,165	639	7,118	0	7,757	183	2,859	0	3,042	0	3,042	0	3,042
	Total	631	4,917	292	5,840	9,583	1,313	7,791	0	9,104	682	2,874	0	3,556	0	3,556	0	3,556
Vigan (Capital)	Urban	1,553	5,826	388	7,767	12,095	5,745	5,745	0	11,490	4,192	0	0	4,192	0	4,192	0	4,192
	Rural	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	1,553	5,826	388	7,767	12,095	5,745	5,745	0	11,490	4,192	0	0	4,192	0	4,192	0	4,192
Provincial Total	Urban	4,663	18,984	1,487	25,134	38,401	18,241	18,241	0	36,482	13,578	535	0	14,113	0	14,113	0	14,113
	Rural	3,757	73,109	4,171	81,037	126,225	5,064	114,851	0	119,915	1,307	41,742	0	43,049	0	43,049	0	43,049
	Total	8,420	92,093	5,658	106,171	164,626	23,305	133,092	0	156,397	14,885	42,277	0	57,162	0	57,162	0	57,162

Table 8.5.6 Additional Number of Public School Students to be Served in Phases I and II (School Toilets)

Municipality	Std. No. of Public School Student that can be Served in the Base Year	Projected No. of Public School Students in 2000	Phase I Coverage (2000)		Std. No. of Public School Students that can be Served in 2000	Projected No. of Public School Students in 2010	Phase II Coverage (2010)	
			Public School Students Coverage	Add'l No. of Public School Students to be Served			Public School Students Coverage	Add'l No. of Public School Students to be Served
Alirum	1,333	1,460	1,314	0	1,314	1,593	1,513	199
Barayovo	1,340	1,525	1,373	33	1,373	1,721	1,635	262
Bantay	3,552	4,167	3,750	198	3,750	5,691	5,406	1,656
Burgos	1,942	2,192	1,973	31	1,973	2,500	2,375	402
Cabugao	4,450	5,228	4,705	255	4,705	6,134	5,827	1,122
Candon	5,300	10,620	9,558	4,258	9,558	12,482	11,838	2,300
Caocavan	2,377	2,640	2,376	0	2,376	2,975	2,779	403
Cervantes	1,600	3,019	2,717	1,117	2,717	3,422	3,251	534
Calimuyod	850	1,688	1,519	669	1,519	1,975	1,876	357
C. del Pilar	552	622	560	8	560	707	672	112
Lidilda	694	797	717	23	717	910	865	148
Magsingal	3,450	4,761	4,285	835	4,285	5,611	5,330	1,045
Nagbutei	1,151	1,150	1,035	0	1,035	1,137	1,080	45
Narvacan	8,453	9,787	8,808	355	8,808	10,564	10,036	1,228
Quirino	1,100	1,550	1,395	295	1,395	1,997	1,897	502
Salcedo	2,050	2,604	2,344	294	2,344	2,783	2,644	300
San Ermito	400	1,375	1,238	838	1,238	1,616	1,535	297
San Esteban	1,279	1,435	1,292	13	1,292	1,667	1,584	292
San Ildefonso	749	892	803	54	803	1,350	1,283	480
San Juan	5,086	5,797	5,217	131	5,217	6,257	5,944	727
San Vicente	900	1,640	1,476	576	1,476	2,830	2,689	1,213
Santa	2,339	2,608	2,347	8	2,347	2,938	2,791	444
Santa Catalina	1,450	2,368	2,131	681	2,131	2,738	2,601	470
Santa Cruz	3,650	6,488	5,839	2,189	5,839	8,102	7,697	1,858
Santa Lucia	1,600	5,177	4,659	3,059	4,659	6,314	5,998	1,339
Santa Maria	5,452	6,089	5,480	28	5,480	6,870	6,527	1,047
Santiago	1,850	3,479	3,131	1,281	3,131	4,324	4,108	977
Santo Domingo	4,097	4,698	4,228	131	4,228	5,410	5,140	912
Sigay	300	464	418	118	418	526	500	82
Sinait	5,520	6,217	5,595	75	5,595	6,576	6,247	652
Sugpon	600	675	608	8	608	747	710	102
Suyo	1,500	2,338	2,104	604	2,104	2,524	2,398	294
Tagudin	6,799	9,107	8,196	1,397	8,196	9,440	8,968	772
Vigan (Capital)	10,152	10,677	9,609	-	9,609	10,729	10,193	584
Provincial Total	93,917	125,334	112,800	19,562	112,800	143,110	135,957	23,157

Table 8.5.7 Number of Public Utilities with Sanitary Toilets in Phases I and II

Municipality	Type	Coverage In 1995		Phase I Coverage (2000)			No. of PU with Sanitary Toilets in 2000	Phase II Coverage (2010)		
		No. of PU	No. of PU with Sanitary Toilet	No. of PU	Add'l No. of Public Utilities with Sanitary Toilet	No. of PU with Sanitary Toilet		No. of PU	Add'l No. of Public Utilities with Sanitary Toilet	No. of PU with Sanitary Toilet
Aldem	Public Market	0	0	0	0	0	0	1	1	1
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	0	0	0	0	0	0	2	2	2
Banayoyo	Public Market	0	0	0	0	0	0	0	0	0
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	0	0	0	0	0	0	1	1	1
Bantay	Public Market	0	0	0	0	0	0	0	0	0
	Bus/Jeep Term.	3	3	3	0	3	3	3	0	3
	Total	3	3	3	0	3	3	3	0	3
Burgos	Public Market	0	0	0	0	0	0	0	0	0
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0
Cabugao	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	2	2	2
	Total	1	1	1	0	1	1	3	2	3
Candon	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	1	1	1	0	1	1	3	2	3
	Total	2	2	2	0	2	2	4	2	4
Caoayan	Public Market	0	0	0	0	0	0	0	0	0
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	0	0	0	0	0	0	1	1	1
Cervantes	Public Market	1	0	1	1	1	1	1	0	1
	Bus/Jeep Term.	0	0	1	1	1	1	1	0	1
	Total	1	0	2	2	2	2	2	0	2
Galmuyod	Public Market	0	0	0	0	0	0	0	0	0
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0
G. del Pilar	Public Market	0	0	0	0	0	0	1	1	1
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	0	0	0	0	0	0	2	2	2
Lalidda	Public Market	0	0	0	0	0	0	1	1	1
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	0	0	0	0	0	0	2	2	2
Magsingal	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	1	1	1	0	1	1	1	0	1
Nagbukel	Public Market	0	0	0	0	0	0	0	0	0
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	0	0	0	0	0	0	1	1	1
Narvacan	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	1	1	1	0	1	1	2	1	2
	Total	2	2	2	0	2	2	3	1	3
Quirino	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	1	1	1	0	1	1	2	1	2
Salcedo	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	1	1	1	0	1	1	2	1	2
San Emilio	Public Market	0	0	0	0	0	0	0	0	0
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	0	0	0	0	0	0	1	1	1
San Esteban	Public Market	0	0	0	0	0	0	1	1	1
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	1	1	1

Table 8.5.7 Number of Public Utilities with Sanitary Toilets in Phases I and II (Cont'd.)

Municipality	Type	Coverage in 1995		Phase I Coverage (2000)			No. of PU with Sanitary Toilets in 2000	Phase II Coverage (2010)		
		No. of PU	No. of PU with Sanitary Toilet	No. of PU	Add'l No. of Public Utilities with Sanitary Toilet	No. of PU with Sanitary Toilet		No. of PU	Add'l No. of Public Utilities with Sanitary Toilet	No. of PU with Sanitary Toilet
San Ildefonso	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	1	1	1	0	1	1	1	0	1
San Juan	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	1	1	1	0	1	1	1	0	1
San Vicente	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	1	1	1	0	1	1	1	0	1
Santa	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	1	1	1	0	1	1	1	0	1
Santa Catalina	Public Market	0	0	0	0	0	0	0	0	0
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0
Santa Cruz	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	1	1	1	0	1	1	2	1	2
Santa Lucia	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	1	1	1	0	1	1	1	0	1
Santa Maria	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	1	1	1	0	1	1	2	1	2
Santiago	Public Market	1	0	1	1	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	1	0	1	1	1	1	1	0	1
Santo Domingo	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	1	1	1	0	1	1	2	1	2
Sigay	Public Market	0	0	0	0	0	0	1	1	1
	Bus/Jeep Term.	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	1	1	1
Sinait	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	1	1	1	1	2	1	2
	Total	1	1	2	1	2	2	3	1	3
Sugpon	Public Market	0	0	0	0	0	0	1	1	1
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	0	0	0	0	0	0	2	2	2
Suyo	Public Market	0	0	0	0	0	0	1	1	1
	Bus/Jeep Term.	0	0	0	0	0	0	1	1	1
	Total	0	0	0	0	0	0	2	2	2
Tugudin	Public Market	1	1	1	0	1	1	1	0	1
	Bus/Jeep Term.	0	0	0	0	0	0	2	2	2
	Total	1	1	1	0	1	1	3	2	3
Vigan (Capital)	Public Market	1	1	2	1	2	2	2	0	2
	Bus/Jeep Term.	6	6	6	0	6	6	6	0	6
	Total	7	7	8	1	8	8	8	0	8
Provincial Total	Public Market	19	17	20	3	20	20	27	7	27
	Bus/Jeep Term.	11	11	13	2	13	13	35	22	35
	Total	30	28	33	5	33	33	62	29	62

Note: PU - Public Utilities

8.6 Facilities, Equipment and Rehabilitation Required to Meet the Target Services

8.6.1 Water Supply

(1) Required water supply facilities

Urban water supply:

Urban water supply facilities required by target year shown in Table 8.6.1 were estimated as required number of house connections based on the additional service coverage.

As reference, following requirements were also estimated:

- daily average water demand at 100 lpcd consumption rate, and
- number of deep wells to meet the daily maximum water demand based on the groundwater productivity.

(daily maximum water demand = 1.3 x daily average water demand)

Information pertaining to the expansion plan of Level III systems was arranged to be indicated in Table 8.6.1 and details in Table 8.6.2, however no information was available during this PW4SP preparation.

Rural water supply:

Rural water supply facilities required by target year shown in Table 8.6.3 were estimated as the number of Level II systems with number of communal faucets and number of Level I wells broken-down to deep and shallow wells. Eight (8) untapped springs suitable for Level II system were confirmed during this PW4SP preparation.

(2) Required well drilling and rehabilitation equipment

Presently, only one each unit of truck-mounted and trailer-mounted percussion drilling rigs, each one unit of trailer-mounted and portable mechanical rotary drilling rigs and one unit of air compressor for well rehabilitation are available at DPWH-DEO in the province. Among these equipment, portable mechanized rotary type rig is only capable to drill shallow wells with less than 10m depth owing to its penetration capacity and therefore not applicable for the planned shallow well construction.

Taking into account the maximum utilization of existing equipment, additional number of required equipment is estimated as described below.

Applicable type of well drilling equipment is determined considering the geological formation of the province that 50% of target area is medium to hard formation suitable to percussion type and the rest is soft to medium formation suitable to rotary type. Idling time for equipment overhauling/maintenance and rest days of workers are considered at 25% of the year.

Table 8.6.1 Urban Water Supply Facilities Required by Target Year

Municipality	Reference on Expansion of Existing Level III System						Phase I (2000) Requirements				Phase II (2010) Requirements			
	Name of System (Operating Body)	Type	Coverage in 1995		Type of Water Sources ¹	Plan for Expansions ²	Additional Population to be Served	Number of House Connections	Daily Average Water Demand (cu. m/day)	Number of Deep Well	Additional Population to be Served	Number of House Connections	Daily Average Water Demand (cu. m/day)	Number of Deep Well
			No. of Brgy.	Served Population										
Alibon	None	Urban	0	0	N.A.	N.A.	363	68	36	1	1,203	301	120	1
		Rural	0	0										
		Total	0	0										
Bantayoyo	None	Urban	0	0	N.A.	N.A.	50	10	5	1	857	214	86	1
		Rural	0	0										
		Total	0	0										
Dantay	Metro Vigan W.D	Urban	6	1,150	SP	N.A.	1,910	367	191	1	8,150	2,038	815	1
		Rural	9	3,750										
		Total	15	4,900										
Burgos	None	Urban	0	0	N.A.	N.A.	444	87	44	1	1,214	304	121	1
		Rural	0	0										
		Total	0	0										
Cabugao	Cabugao Waterworks System	Urban	5	850	SP	N.A.	0	0	0	0	7,924	1,981	792	1
		Rural	11	1,710										
		Total	16	2,560										
Candon	None	Urban	0	0	N.A.	N.A.	1,940	373	194	1	6,085	1,521	609	1
		Rural	0	0										
		Total	0	0										
Caabayan	Metro Vigan W.D	Urban	6	1,150	SP	N.A.	1,193	239	119	1	5,711	1,428	571	1
		Rural	9	3,750										
		Total	15	4,900										
Cervantes	None	Urban	0	0	N.A.	N.A.	482	85	48	1	2,414	604	241	1
		Rural	0	0										
		Total	0	0										
Galimuyod	None	Urban	0	0	N.A.	N.A.	12	2	1	1	466	117	47	1
		Rural	0	0										
		Total	0	0										
C. del Pilar	Barangay Alfonso W.S	Urban	0	0	SP	N.A.								
		Rural	1	540										
		Total	1	540										
	Barangay Dapdapig W.S	Urban	0	0	SP	N.A.								
		Rural	1	260										
		Total	1	260										
	Barangay Concepcion W.S	Urban	1	600	SP	N.A.								
		Rural	0	0										
		Total	1	600										
Municipal Total	None	Urban	1	600			0	0	0	0	74	19	7	1
		Rural	2	800										
		Total	3	1400										

Table 8.6.1 Urban Water Supply Facilities Required by Target Year (Cont'd.)

Municipality	Reference on Expansion of Existing Level III System										Phase I (2000) Requirements				Phase II (2010) Requirements			
	Name of System (Operating Body)	Type	Coverage in 1995		Type of Water Sources ¹	Plan for Expansions ²	Additional Population to be Served	Number of House Connections	Daily Average Water Demand (cu. m/day)	Number of Deep Well	Additional Population to be Served	Number of House Connections	Daily Average Water Demand (cu. m/day)	Number of Deep Well				
			No. of Brgrs.	Served Population														
Ludioda	None	Urban	0	0	N.A.	N.A.	0	0	0	0	1,384	346	138	1				
		Rural	0	0														
		Total	0	0														
Magsingal	None	Urban	0	0	N.A.	N.A.	538	110	54	1	5,321	1,330	532	1				
		Rural	0	0														
		Total	0	0														
Nagbukel	None	Urban	0	0	N.A.	N.A.	189	37	19	1	623	156	62	1				
		Rural	0	0														
		Total	0	0														
Narvacan	Narvacan W.D	Urban	2	874	DW	N.A.	618	119	62	1	1,634	409	163	1				
		Rural	0	0														
		Total	2	874														
Quinto	None	Urban	0	0	N.A.	N.A.	222	44	22	1	1,311	328	131	1				
		Rural	0	0														
		Total	0	0														
Salcedo	None	Urban	0	0	N.A.	N.A.	173	35	17	1	1,319	330	132	1				
		Rural	0	0														
		Total	0	0														
San Emilio	None	Urban	0	0	N.A.	N.A.	0	0	0	0	2,556	639	256	1				
		Rural	0	0														
		Total	0	0														
San Esteban	None	Urban	0	0	N.A.	N.A.	103	20	10	1	731	183	73	1				
		Rural	0	0														
		Total	0	0														
San Isidro/onso	None	Urban	0	0	N.A.	N.A.	119	23	12	1	1,017	254	102	1				
		Rural	0	0														
		Total	0	0														
San Juan	None	Urban	0	0	N.A.	N.A.	325	68	33	1	3,448	862	345	1				
		Rural	0	0														
		Total	0	0														
San Vicente	None	Urban	0	0	N.A.	N.A.	10	2	1	1	1,314	329	131	1				
		Rural	0	0														
		Total	0	0														
Santa	Santa W.D	Urban	4	755	SP	N.A.	195	41	20	1	972	243	97	1				
		Rural	5	95														
		Total	9	850														
Santa Catalina	None	Urban	0	0	N.A.	N.A.	176	33	18	1	1,202	301	120	1				
		Rural	0	0														
		Total	0	0														

Table 8.6.1 Urban Water Supply Facilities Required by Target Year (Cont'd.)

Municipality	Reference on Expansion of Existing Level III System										Phase I (2000) Requirements					Phase II (2010) Requirements				
	Name of System (Operating Body)	Type	Coverage in 1995		Type of Water Sources	Plan for Expansions ²	Additional Population to be Served	Number of House Connections	Daily Average Water Demand (cu. m/day)	Number of Deep Well	Additional Population to be Served	Number of House Connections	Daily Average Water Demand (cu. m/day)	Number of Deep Well	Additional Population to be Served	Number of House Connections	Daily Average Water Demand (cu. m/day)			
			No. of PrG.	Population																
Santa Cruz	None	Urban	0	0	N.A.	N.A.	936	184	94	1	4,016	1,004	402	1	4,016	1,004	402			
		Rural	0	0																
		Total	0	0																
Santa Lucia	Santa Lucia W.D	Urban	3	920	SW	N.A.	212	41	21	1	1,372	343	137	1	1,372	343	137			
		Rural	2	645																
		Total	5	1,565																
Santa Mana	Nalvo Water System	Urban	0	0	DW	N.A.	1,330	266	133	1	2,715	679	272	1	2,715	679	272			
		Rural	1	250																
		Total	1	250																
Santiago	Santiago Water System	Urban	2	335	DW	N.A.	374	69	37	1	1,939	485	194	1	1,939	485	194			
		Rural	0	0																
		Total	2	335																
Santo Domingo	San Domingo Water System	Urban	1	25	SP	N.A.	286	56	29	1	2,966	742	297	1	2,966	742	297			
		Rural	1	10																
		Total	2	35																
Sigay	None	Urban	0	0	N.A.	N.A.	0	0	0	0	0	0	0	0	0	0	0			
		Rural	0	0																
		Total	0	0																
Sinaut	Sinaut Waterworks	Urban	4	995	DW	N.A.	0	0	0	0	2,214	554	221	1	2,214	554	221			
		Rural	0	0																
		Total	4	995																
Sugboon	None	Urban	0	0	N.A.	N.A.	0	0	0	0	1,083	271	108	1	1,083	271	108			
		Rural	0	0																
		Total	0	0																
Suyo	None	Urban	0	0	N.A.	N.A.	335	58	34	1	1,652	413	165	1	1,652	413	165			
		Rural	0	0																
		Total	0	0																
Tagudin	Tagudin W.D	Urban	5	2,660	DW	N.A.	29	5	3	1	2,698	675	270	1	2,698	675	270			
		Rural	18	2,555																
		Total	23	5,215																
Vigan (Capital)	Metro Vigan W.D	Urban	6	1,150	SP	N.A.	6,502	1,227	650	1	33,157	8,289	3,316	3	33,157	8,289	3,316			
		Rural	9	3,750																
		Total	15	4,900																
Provincial Total		Urban	46	12,064			19,066	3,669	1,907	27	110,742	27,692	11,073	35	110,742	27,692	11,073			
		Rural	69	18,115																
		Total	115	30,179																

Note: 1. DW - Deep Well. SP - Spring. DgW - Dug Well, and Surf - Surface Water.
2. Refer to supporting Table 8.6.3 for details.

Table 8.6.2 Plan for Expansion of Existing Level III System

Municipality	Name of Operating Body	Additional Areas Barangay to be Covered	Additional Population to be Served	Additional Water Sources	
				Type ¹	Capacity (cu. m/day)
Bantay	Metro Vigan W.D	0	0	N.A.	0
Cabugao	Cabugao Waterworks System	0	0	N.A.	0
Caoayan	Metro Vigan W.D	0	0	N.A.	0
G. del Pilar	Barangay Alfonso W.S	0	0	N.A.	0
	Barangay Dapdapig W.S	0	0	N.A.	0
	Barangay Concepcion W.S	0	0	N.A.	0
	Municipal Total	0	0		0
Narvacan	Narvacan W.D	0	0	N.A.	0
Santa	Santa W.D	0	0	N.A.	0
Santa Lucia	Santa Lucia W.D	0	0	N.A.	0
Santa Maria	Nalvo Water System	0	0	N.A.	0
Santiago	Santiago Water System	0	0	N.A.	0
Santo Domingo	Sto. Domingo Water System	0	0		0
Sinait	Sinait Waterworks	0	0	N.A.	0
Tagudin	Tagudin W.D	0	0	N.A.	0
Vigan (Capital)	Metro Vigan W.D	0	0	N.A.	0
	Provincial Total	0	0		0

Note: 1. DW - Deep Well, SD_gW - Dug Well, P - Spring, D_gW - Dug Well, and Surf - Surface Water Intake.

Medium size rotary drilling rig (truck-mounted top-head drive type for deep well):

Average performance

- 1 well/20 days (10 m/day of drilling rate with finishing work)

Annual accomplishment

- 13 wells/year (365 days/year ÷ 20 days/well x 0.75)

Required number

- 8 sets for 50% of the total 999 deep wells

Medium size percussion drilling rig (truck-mounted type for deep well):

Average performance

- 1 well/30 days (5 m/day of drilling rate with finishing work)

Annual accomplishment

- 9 wells/year (365 days/year ÷ 30 days/well x 0.75)

Required number

- 12 sets for 50% of the total 999 deep wells

Well rehabilitation equipment:

Average performance

- 1 well/7 days (well redevelopment and finishing work)

Annual accomplishment

- 39 wells/year (365 days/year ÷ 7 days/well x 0.75)

Required number

- 3 sets for 10% of 999 Level I deep wells

Support vehicle:

Type - pick-up truck with winch, double cab

Required number

- 3 units for well rehabilitation

Considering the utilization of existing percussion drilling rig, the following equipment shall be mobilized/procured either by private sector or LGUs to accomplish the physical targets:

- 7 sets of medium size rotary rig for 50% of deep wells,
- 10 sets of medium size percussion rig for 50% of deep wells
- 2 sets of well rehabilitation equipment for 10% of deep wells (at least 1 set shall be held by the provincial government), and
- 3 units of support vehicle for well rehabilitation.

In addition to the above, service trucks equipped with crane are required for each unit of medium size rotary and percussion rigs for hauling drilling tools and water.

8.6.2 Sanitation

Table 8.6.4 Urban Household Toilets Required by Target Year

Municipality	Phase I (2000) Requirements						Phase II (2010) Requirements					
	Add'l HHs to be Served			No. of HHs Toilets			Add'l HHs to be Served			No. of HHs Toilets		
	Flush	Pour Flush	VIP Latrine	Total	Flush	Pour Flush	VIP Latrine	Total	Flush	Pour Flush	VIP Latrine	Total
Ahien	46	54	0	100	46	54	0	100	143	0	0	143
Banayoyo	10	0	8	18	10	0	8	18	104	0	0	104
Bantay	0	0	0	0	0	0	0	0	839	338	0	1,177
Burgos	54	82	0	136	54	82	0	136	149	0	0	149
Cabugao	0	0	40	40	0	0	40	40	892	0	0	892
Candon	203	0	38	241	203	0	38	241	726	0	0	726
Caoayan	98	130	0	228	98	130	0	228	672	0	0	672
Cervantes	0	0	0	0	0	0	0	0	339	157	0	339
Galimuyod	2	10	0	12	2	10	0	12	58	0	0	58
G. del Pilar	0	0	0	0	0	0	0	0	54	8	0	62
Lidhida	0	7	1	8	0	7	1	8	173	0	0	173
Magsingal	10	14	0	24	10	14	0	24	622	0	0	622
Nagbukel	25	0	7	32	25	0	7	32	73	0	0	73
Narvacan	18	0	27	45	18	0	27	45	283	0	0	283
Quirino	42	0	0	42	42	0	0	42	149	0	0	149
Salcedo	30	0	7	37	30	0	7	37	152	0	0	152
San Emilio	0	99	0	99	0	99	0	99	320	0	0	320
San Esteban	10	0	7	17	10	0	7	17	85	0	0	85
San Idelfonso	0	11	10	21	0	11	10	21	118	0	0	118
San Juan	43	0	0	43	43	0	0	43	404	0	0	404
San Vicente	0	0	1	1	0	0	1	1	145	0	0	145
Santa	44	0	0	44	44	0	0	44	168	0	0	168
Santa Catalina	13	0	12	25	13	0	12	25	139	0	0	139
Santa Cruz	163	0	0	163	163	0	0	163	445	0	0	445
Santa Lucia	46	71	0	117	46	71	0	117	227	0	0	227
Santa Maria	109	0	11	120	109	0	11	120	361	0	0	361
Santiago	83	0	10	93	83	0	10	93	243	2	0	245
Santo Domingo	47	0	29	76	47	0	29	76	348	0	0	348
Sigay	0	0	0	0	0	0	0	0	0	0	0	0
Sinait	78	0	21	99	78	0	21	99	288	0	0	288
Sugpon	0	98	0	98	0	98	0	98	135	0	0	135
Suvo	53	36	0	89	53	36	0	89	190	15	0	205
Tagudin	29	75	0	104	29	75	0	104	499	15	0	514
Vigan (Capital)	548	208	0	756	548	208	0	756	4,192	0	0	4,192
Provincial Total	1,804	895	229	2,928	1,804	895	229	2,928	13,578	515	0	14,113

Table 8.6.5 Rural Household Toilets Required by Target Year

Municipality	Phase I (2000) Requirements										Phase II (2010) Requirements									
	Add'l HHs to be Served					No. of HHs Toilets					Add'l HHs to be Served					No. of HHs Toilets				
	Flush	Pour Flush	VIP Latrine	Total	Flush	Pour Flush	VIP Latrine	Total	Flush	Pour Flush	VIP Latrine	Total	Flush	Pour Flush	VIP Latrine	Total	Flush	Pour Flush	VIP Latrine	Total
Altamira	0	316	0	316	0	316	0	316	0	468	0	468	0	468	0	468	0	468	0	468
Banavoyo	0	14	21	35	0	14	21	35	0	600	0	600	0	600	0	600	0	600	0	600
Bantay	162	355	29	546	162	355	29	546	606	1,245	0	1,851	606	1,245	0	1,851	606	1,245	0	1,851
Burgos	0	191	11	202	0	191	11	202	0	843	0	843	0	843	0	843	0	843	0	843
Cabugao	312	0	0	312	312	0	0	312	105	2,088	0	2,193	105	2,088	0	2,193	0	2,088	0	2,193
Candon	0	6	126	132	0	6	126	132	0	3,976	0	3,976	0	3,976	0	3,976	0	3,976	0	3,976
Caoyan	88	559	95	742	88	559	95	742	236	660	0	896	236	660	0	896	0	660	0	896
Cervantes	0	885	0	885	0	885	0	885	0	1,190	0	1,190	0	1,190	0	1,190	0	1,190	0	1,190
Galimuyod	0	0	53	53	0	0	53	53	0	851	0	851	0	851	0	851	0	851	0	851
G. del Pilar	52	70	0	122	52	70	0	122	112	204	0	316	112	204	0	316	0	204	0	316
Lidioda	0	6	6	12	0	6	6	12	0	272	0	272	0	272	0	272	0	272	0	272
Magsangal	0	547	0	547	0	547	0	547	0	1,859	0	1,859	0	1,859	0	1,859	0	1,859	0	1,859
Napbukel	0	257	8	265	0	257	8	265	0	309	0	309	0	309	0	309	0	309	0	309
Narvacan	0	566	339	905	0	566	339	905	0	3,213	0	3,213	0	3,213	0	3,213	0	3,213	0	3,213
Quirino	0	435	0	435	0	435	0	435	0	600	0	600	0	600	0	600	0	600	0	600
Salcedo	0	0	0	0	0	0	0	0	0	799	0	799	0	799	0	799	0	799	0	799
San Emilio	0	411	38	449	0	411	38	449	0	421	0	421	0	421	0	421	0	421	0	421
San Esteban	0	156	61	217	0	156	61	217	0	512	0	512	0	512	0	512	0	512	0	512
San Idelfonso	0	11	37	48	0	11	37	48	0	415	0	415	0	415	0	415	0	415	0	415
San Juan	0	554	181	735	0	554	181	735	0	1,713	0	1,713	0	1,713	0	1,713	0	1,713	0	1,713
San Vicente	0	542	0	542	0	542	0	542	0	854	0	854	0	854	0	854	0	854	0	854
Santa	13	123	110	246	13	123	110	246	6	1,095	0	1,101	6	1,095	0	1,101	0	1,095	0	1,101
Santa Catalina	0	0	93	93	0	0	93	93	0	1,170	0	1,170	0	1,170	0	1,170	0	1,170	0	1,170
Santa Cruz	0	382	0	382	0	382	0	382	0	2,841	0	2,841	0	2,841	0	2,841	0	2,841	0	2,841
Santa Lucia	70	594	0	664	70	594	0	664	44	2,076	0	2,120	44	2,076	0	2,120	0	2,076	0	2,120
Santa Maria	16	83	153	252	16	83	153	252	15	2,050	0	2,065	15	2,050	0	2,065	0	2,050	0	2,065
Santiago	0	0	0	0	0	0	0	0	0	1,843	0	1,843	0	1,843	0	1,843	0	1,843	0	1,843
Santo Domingo	0	118	182	300	0	118	182	300	0	1,931	0	1,931	0	1,931	0	1,931	0	1,931	0	1,931
Stegay	0	73	18	91	0	73	18	91	0	240	0	240	0	240	0	240	0	240	0	240
Sinait	0	746	0	746	0	746	0	746	0	1,647	0	1,647	0	1,647	0	1,647	0	1,647	0	1,647
Sugpon	0	187	0	187	0	187	0	187	0	198	0	198	0	198	0	198	0	198	0	198
Suyo	0	548	0	548	0	548	0	548	0	700	0	700	0	700	0	700	0	700	0	700
Tagudin	261	445	0	706	261	445	0	706	183	2,859	0	3,042	183	2,859	0	3,042	0	2,859	0	3,042
Vigan (Capital)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Provincial Total	974	9,180	1,561	11,715	974	9,180	1,561	11,715	1,307	41,742	0	43,049	1,307	41,742	0	43,049	1,307	41,742	0	43,049

Table 8.6.6 Public School Toilets Required by Target Year

Municipality	Phase I (2000) Requirements			Phase II (2010) Requirements		
	Add'l Public School Students to be Served	No. of Toilet Units	No. of Toilet Facilities	Add'l Public School Students to be Served	No. of Toilet Units	No. of Toilet Facilities
Afilem	0	0	0	199	4	1
Banayoyo	33	1	0	262	5	1
Bantay	198	4	1	1,656	33	7
Burgos	31	1	0	402	8	2
Cabugao	255	5	1	1,122	22	4
Candon	4,258	85	17	2,300	46	9
Caoyan	0	0	0	403	8	2
Cervantes	1,117	22	4	534	11	2
Galimuyod	669	13	3	357	7	1
G. del Pitar	8	0	0	112	2	0
Lidlidda	23	0	0	148	3	1
Magsingal	835	17	3	1,045	21	4
Nagbukel	0	0	0	45	1	0
Narvacan	355	7	1	1,228	25	5
Quirino	295	6	1	502	10	2
Salcedo	294	6	1	300	6	1
San Emilio	838	17	3	297	6	1
San Esteban	13	0	0	292	6	1
San Ildefonso	54	1	0	480	10	2
San Juan	131	3	1	727	15	3
San Vicente	576	12	2	1,213	24	5
Santa	8	0	0	444	9	2
Santa Catalina	681	14	3	470	9	2
Santa Cruz	2,189	44	9	1,858	37	7
Santa Lucia	3,059	61	12	1,339	27	5
Santa Maria	28	1	0	1,047	21	4
Santiago	1,281	26	5	977	20	4
Santo Domingo	131	3	1	912	18	4
Sigay	118	2	0	82	2	0
Sinait	75	2	0	652	13	3
Sugpon	8	0	0	102	2	0
Suyo	604	12	2	294	6	1
Tagudin	1,397	28	6	772	15	3
Vigan (Capital)	0	0	0	584	12	2
Provincial Total	19,562	393	76	23,157	464	91

Table 8.6.7 Public Toilets Required by Target Year

Municipality	Type	Phase I (2000)	Phase II (2010)
		Requirements	Requirements
		Number of Public Toilets	Number of Public Toilets
Alilem	Public Market	0	1
	Bus/Jeepney Term.	0	1
	Total	0	2
Banayoyo	Public Market	0	0
	Bus/Jeepney Term.	0	1
	Total	0	1
Bantay	Public Market	0	0
	Bus/Jeepney Term.	0	0
	Total	0	0
Burgos	Public Market	0	0
	Bus/Jeepney Term.	0	0
	Total	0	0
Cabugao	Public Market	0	0
	Bus/Jeepney Term.	0	2
	Total	0	2
Candon	Public Market	0	0
	Bus/Jeepney Term.	0	2
	Total	0	2
Caoayan	Public Market	0	0
	Bus/Jeepney Term.	0	1
	Total	0	1
Cervantes	Public Market	1	0
	Bus/Jeepney Term.	1	0
	Total	2	0
Galimuyod	Public Market	0	0
	Bus/Jeepney Term.	0	0
	Total	0	0
G. del Pilar	Public Market	0	1
	Bus/Jeepney Term.	0	1
	Total	0	2
Lidlidda	Public Market	0	1
	Bus/Jeepney Term.	0	1
	Total	0	2
Magsingal	Public Market	0	0
	Bus/Jeepney Term.	0	0
	Total	0	0
Nagbukel	Public Market	0	0
	Bus/Jeepney Term.	0	1
	Total	0	1
Narvacan	Public Market	0	0
	Bus/Jeepney Term.	0	1
	Total	0	1
Quirino	Public Market	0	0
	Bus/Jeepney Term.	0	1
	Total	0	1
Salcedo	Public Market	0	0
	Bus/Jeepney Term.	0	1
	Total	0	1
San Emilio	Public Market	0	0
	Bus/Jeepney Term.	0	1
	Total	0	1

Table 8.6.7 Public Toilets Required by Target Year (Cont'd.)

Municipality	Type	Phase I (2000)	Phase II (2010)
		Requirements	Requirements
		Number of Public Toilets	Number of Public Toilets
San Esteban	Public Market	0	1
	Bus/Jeepney Term.	0	0
	Total	0	1
San Ildelfonso	Public Market	0	0
	Bus/Jeepney Term.	0	0
	Total	0	0
San Juan	Public Market	0	0
	Bus/Jeepney Term.	0	0
	Total	0	0
San Vicente	Public Market	0	0
	Bus/Jeepney Term.	0	0
	Total	0	0
Santa	Public Market	0	0
	Bus/Jeepney Term.	0	0
	Total	0	0
Santa Catalina	Public Market	0	0
	Bus/Jeepney Term.	0	0
	Total	0	0
Santa Cruz	Public Market	0	0
	Bus/Jeepney Term.	0	1
	Total	0	1
Santa Lucia	Public Market	0	0
	Bus/Jeepney Term.	0	0
	Total	0	0
Santa Maria	Public Market	0	0
	Bus/Jeepney Term.	0	1
	Total	0	1
Santiago	Public Market	1	0
	Bus/Jeepney Term.	0	0
	Total	1	0
Santo Domingo	Public Market	0	0
	Bus/Jeepney Term.	0	1
	Total	0	1
Sigay	Public Market	0	1
	Bus/Jeepney Term.	0	0
	Total	0	1
Sinait	Public Market	0	0
	Bus/Jeepney Term.	1	1
	Total	1	1
Sugpon	Public Market	0	1
	Bus/Jeepney Term.	0	1
	Total	0	2
Suyo	Public Market	0	1
	Bus/Jeepney Term.	0	1
	Total	0	2
Tagudin	Public Market	0	0
	Bus/Jeepney Term.	0	2
	Total	0	2
Vigan (Capital)	Public Market	1	0
	Bus/Jeepney Term.	0	0
	Total	1	0
Provincial Total	Public Market	3	7
	Bus/Jeepney Term.	2	22
	Total	5	29