

8.3.5 Number of Households to be Served by Municipal Solid Waste Collection System

The number of urban households in 2003 is the potential households for the planning (refer to Table 8.3.5, Supporting Report).

8.4 Types of Facilities and Implementation Criteria

In principle, types of facilities and their implementation criteria as prescribed in the NSMP and the NEDA Board Resolution No. 12 (s. 1995) are adopted to this PW4SP.

8.4.1 Water Supply

The following are major conditions and assumptions applied to urban and rural water supply, which are intended as a guide for the implementation of sector projects.

(1) Urban water supply

Prevailing situation of urban water supply in each municipality was firstly reviewed mainly focusing on existing water sources and magnitude of service coverage. Planned/on-going projects for concerned municipalities were also studied and reflected in the planning, with due attention to merging of municipalities into an integrated water supply system. Potential water source for future development was then evaluated based on the study results in Chapter 7, taking into account the possibility to utilize untapped spring sources. Recommendations arising from these studies were also incorporated for furtherance of water supply development.

Aforementioned studies were carried out by the following sequence:

- Review of existing water supply systems and water sources (details are referred to Supporting Report);
- Review of planned/on-going projects;
- Establishment of planning conditions covering service level, utilization of existing facilities, water sources, and number of systems; and
- Recommendations for overall development strategy.

Table 8.4.1 presents a summary of the study results by municipality.

Table 8.4.1 Summary of Urban Water Supply by Municipality

Municipality	Existing Condition	Future Requirements	Water Source Availability	On-going/Planned Project
Alabell	There are two Level III systems; one is LGU operated and another is Santo Ninio cooperative. These systems serve for the poblacion (20% of urban population). Deep wells are water sources for the supply. Major problems encountered are two times of non-supply caused by (1) lowering of water level and (2) power supply cut. Water quality problem: pH 8-8.5 and high iron and manganese contents (200-300 ppm).	System expansion with water source augmentation. About 4,000 cu.m/day will be required in the future.	Potential spring source is MOLO spring (600-700 m aswl) and about 8Km from the poblacion). Further study with clarification of water right must be conducted.	None
Glan	There is one WD serving for 4,000 persons (23% of urban population). Water sources are deep wells. Salt water intrusion is not current problem, but high iron contents is common problem.	System expansion with water source augmentation. About 2,000 cu.m/day is required in the future (about 1,000cu.m/well can be expected). F/S shall be conducted.	Deep well (fair potential, but possibility of high iron content problem). Test bailing shall be required. Untapped springs may also be used.	None
Kiamba	No Level III system exists at present. While there are many Level II systems using spring sources.	Individual Level III system shall be developed.	The water source available is deep well/ spring. Priority shall be given to spring source.	None
Maasim	There is a WD using two spring sources. 10% of the urban population is served by the system.	System expansion. F/S shall be prepared.	Untapped springs may be used.	None
Mainum	No level III system exists in the urban area at present.	Individual Level III shall be developed.	There is a good spring source (10-F/S to use the spring is under 15 km away from urban area) at Barangay New La Union.	There is a good spring source (10-F/S to use the spring is under way (30-40 million pesos) by the municipality.
Malapatan	There are two Level III systems operated by municipality/barangay (900 and 700 persons served by each system). The service coverage is only 6% of the urban population. Water source is a deep well.	System expansion with water source augmentation	Spring sources (since there are many untapped springs) shall be used for Level III systems.	None
Malungon	The municipality is located in hilly area. No Level III system exists at present. Many Level II systems exist using spring sources exist. Ground water level is very low (less than 40m).	Individual Level III system shall be developed.	Barrio Biaan spring (with a potential discharge rate of 17,000 cu.m/day, 8Km from poblacion may be used after required study(water right, technical requirements, etc.)	None

1) Review of existing water supply systems and water sources

Majority of the existing Level III systems in urban areas is utilizing deep wells. The municipalities of Glan and Maasim are served by WDs, while the municipalities of Alabel and Malapatan are served by Level III systems being operated either by the municipality or the local community.

Currently, 3 out of the total 7 municipalities, namely: Kiamba, Maitum and Malungon have no Level III system in their urban area and are presently served by Level II system and/or Level I facilities.

Population served by Level III systems range from about 900 persons in Maasim to 4,100 persons in Glan. The average size of served population is about 1,500 persons.

2) Review of planned/on-going projects

At present, there is no particular planned/on-going project for municipalities in the province. However, the municipality of Maitum is going to prepare F/S for creation of Level III system with spring source development.

3) Establishment of planning conditions

a. Service level

It shall be noted that a national policy for urban water supply is a Level III system, in general, as the most suitable measure. Therefore, for the investment needs of the sector development, it is assumed in this PW4SP that underserved or unserved urban population at present and in the future will be provided with individual house connections. However, it does not intend to exclude from being implemented Level I and II facilities in urban area as individual cases in the future.

b. Utilization of existing facilities

The existing Level I and II facilities are considered to be utilized during the Phase I period. However, the population served by these facilities is assumed to be absorbed by Level III service in Phase II.

c. Water sources

Possibility/availability to utilize surface water and groundwater (spring and deep well) is evaluated as potential water sources for water supply development.

From the viewpoints of cost effectiveness and easy O&M of water supply system, utilization of spring sources is given due priority in the course of urban water supply planning. Application of deep wells for water source is regarded as the second priority in principle. Surface water is, on the other hand, not adopted at this moment, because of large capital investment requirements and complexity of surface water treatment.

Water source development study revealed that most of the municipalities in the planning area have high potential for spring development. Among various untapped spring sources identified during the course of PW4SP preparation, the untapped sources, located in Alabel, Maitum, Malapatan and Malungon are considered to have favorable conditions to be used for Level III service.

d. Number of systems

In principle, one (1) Level III system is considered for urban area of every municipality. In the municipalities with an existing Level III system/s, the expansion of the system was first considered. In case of no existence of Level III system/s, a new system was recommended. Existing plan/s on the development of Level III/WD are also taken into account to determine respective systems of the municipalities.

Possibility and necessity to merge service area of some neighboring municipalities to an urban water supply system were also studied from the viewpoint of:

- water source constraints, and
- economical development/scale merit of water supply system by cost reduction of water source development and other common facilities as well as O&M cost/minimized number of technical staff.

Any rural barangay/s being served by an existing urban Level III system are considered to continue throughout the future.

e. Rehabilitation

Rehabilitation of existing and future facilities is assumed to be undertaken by the operating bodies.

4) Overall development strategy

Individual systems by municipality shall be operated in the fact that the urban areas are geographically scattered each other.

The province has high potential in spring development as resulted a number of untapped spring sources favorable for urban water supply were identified during the course of PW4SP preparation. However, a detailed survey to ensure appropriate development of spring sources shall be conducted in the implementation of the projects.

(2) Rural water supply

1) Service level

Level I systems (deep and shallow wells) are generally planned for rural areas where houses are scattered. In the PW4SP, public investment for Level I facilities covers 20% of the total number of required facilities, considering the existing share of public facilities (16%) and private facilities (84%).

Level II systems are considered where houses are clustered and suitable untapped spring is available.

Service level standards are set forth as 15 households per source for Level I and 5 households per communal faucet for Level II, as defined in the national plan.

Application of Level III systems in rural areas may be considered in a case to case basis during actual implementation.

2) Utilization of existing facilities

The existing facilities/systems in all service levels are considered to be utilized throughout the future.

3) Water source

For Level I facilities, deep well construction is given priority wherever applicable considering safety against possible contamination and stable water supply. Standard specifications of shallow and deep wells are summarized in Table 8.4.2 based on the water source evaluation results presented in Chapter 7. Conventional construction method (driven well) may be employed under favorable substrata or hydrogeological conditions. The standard structure of wells in application of "open-hole drilling and gravel pack" is presented in Figure 8.4.1, Supporting Report. In addition to this, for deep well with high iron content, application of iron removal facility is recom-

mended. The standard structure of iron removal facility is presented in Figure 8.4.2, Supporting Report.

Spring development is also included in Level I planning adopting its share of 20%. This takes into account the existing percentage of developed springs (21%) among public Level I facilities as safe water sources.

Table 8.4.2 Standard Specifications of Level I Wells

Specification	Shallow Well	Deep Well
Construction Method	Open-hole drilling and gravel pack	
Casing Diameter	50mm	100mm
Borehole Diameter	150mm	200mm
Ranges of Well Depth	Standard Depth	
0 - 20m	20m	Not Applicable
21 - 50m	Not Applicable	40m
51 - 100m	Not Applicable	80m
101 - 150m	Not Applicable	120m

Profile between gravel packed well and natural gravel packed well for Level I water supply:

The open-hole drilling method is employed for the well construction to ensure yielding ground water from adequate aquifer in provision of proper screen location and specifications. The conventional "cased-hole driven well" shall be used only in cases where well specifications are established in the specified area with sufficient information on the hydrogeological condition including existence of natural gravel at the expected aquifer.

It is important to study on the potential area to adopt natural gravel method, which can perform the same level of function as gravel-packed wells. Such areas are usually limited to the upper stream of larger rivers in alluvial fans and alluvial plains. The arial proportion between those in application of gravel-packed and natural gravel pack wells will be worked out referring to the condition of the province.

Modification needs of riser pipe diameter according to the water level of deep wells:

The standard specification of deep well hand pump is set with a diameter of 2-1/2 inch in the plan. However, water level of the deep wells may range between 20 m and around 40 m, depending on the aquifer conditions.

Although, Malawi type deep well pump with a cylinder, currently used in the Philippines, has operation experience up to 40 m in pumping water level, the diameter of riser pipe shall be adjusted between 1" to 2-1/2" to mitigate required power at the pump handle (calculating required power under the specific pumping water level).

For Level II systems, only untapped springs suitable for water supply purpose are considered. Identified untapped springs are presented in Table 7.4.1, Supporting Report.

4) Number of systems/facilities

The number of Level I wells and spring development is estimated based on the service level standard; while the number of Level II systems coincides with the number of untapped springs.

5) Rehabilitation

Rehabilitation of existing Level I wells is not considered, since most of the existing wells constructed by driving method is not suitable for rehabilitation to recover their functions. However, minor repair work for handpump and concrete apron is a requisite.

8.4.2 Sanitation

The conditions and assumptions are established for the different sanitation components to serve as guides in the implementation of projects.

(1) Household toilets

Three types of sanitary toilet facilities for individual houses are considered for Phase I; flush, pour-flush and VIP/sanitary pit privy (dry-type). While for Phase II, flush and pour-flush are planned considering the improvement of living standard.

The type of toilet facilities is dependent on the existing or planned service level of water supply in the community. In urban and rural areas with Level I or II water supply facilities, only pour-flush and/or VIP are considered, while in urban areas with Level III water supply systems, flush type toilets requiring a piped water connection are included. Isolated rural areas where there is dearth of water supply, sanitary pit privy (dry type) is considered.

(2) School toilets

Standard service level currently used by DECS (40 students per unit facility) is employed for both phases.

The standard toilet facility (1 building) with 5 units of toilet bowl to serve for 200 students is adopted for the planning purpose, which is modified from FW4SP design to provide a shallow well as a water source.

(3) Public toilets

As a minimum requirement, at least 1 sanitary toilet facility is assumed to be provided for respective utilities: public market and bus/jeepney terminal.

The FW4SP standard design with 6-units of toilet bowl for the market is adopted. In this design, it is assumed that water supply will be tapped from the existing system, hence an elevated water tank is provided.

8.4.3 Urban Sewerage

The commencement of staged implementation of the sewerage program is planned in Phase II for the limited urban area (50% of urban population served by Level III system for the municipalities with urban population of more than 10,000). It is practical to start the program fully using the existing facilities to allow for lower initial investment cost than starting at once a conventional sewerage system (refer to Figure 8.4.2 Staged Improvement in Sewage Collection Method, Supporting Report).

Low cost off-site technologies such as small-bore sewer for collection of effluent from septic tank are to be adopted. Improvement of sewage collection method may be gradually achieved from combined sewer to separate sewerage system.

Sewage treatment facilities may range from community scale septic tank or Imhoff tank to aerated lagoon systems and to a more advanced treatment process such as oxidation ditch. For this PW4SP, aerated lagoons are assumed as a representative treatment facility for planning purpose. Daily average wastewater quantity is assumed to be 100L per capita per day.

8.4.4 Solid Waste

In terms of facility requirements, this PW4SP only studied the number of refuse collection trucks required for the year 2003. A rated capacity of 5 cu.m truck/vehicle is considered for calculation of required units of truck. Disposal of solid waste shall be studied in detail through investigations, F/S and D/D. Unit solid waste generation for urban area is assumed to be 0.418 kg. per capita per day.

8.5 Service Coverage by Target Year

8.5.1 Water Supply

The service coverage in terms of population to be served by target year was estimated by urban and rural area by municipality. The service coverage in rural area was further subdivided by service level (Level I & Level II) to finally come up with physical requirements.

Base figures applied to estimate the future service coverage and the additional population to be served are:

- provincial sector targets,
- population projection by target year, and
- base year service coverage (served population) by existing facilities.

Future requirements in terms of additional population to be served were then estimated by urban (Level III) and rural (Level I & II) area by municipality as a shortfall to meet the population to be served in each target year. The population served in base year is adopted as the population served in target year, when the former population exceeds the population to be served in the target year/s. Manner of calculation is specifically presented by phase.

(1) Phase I requirements

Additional service coverage was estimated as a shortfall of the population to be served in Phase I comparing with the population served in base year. In this connection, existing facilities both in urban and rural areas are assumed to be utilized during the Phase I period.

The utilization of untapped springs for Level II systems was given priority during Phase I period for rural water supply. At the time of this plan preparation, 17 untapped springs in 3 municipalities were identified.

(2) Phase II requirements

Additional service coverage was estimated as a shortfall of the population to be served in Phase II comparing with the population served in Phase I. In this regard, existing facilities in rural area were assumed to be utilized through the two Phases, while urban population served by Level I and II facilities in base year was assumed to be absorbed by Level III service during Phase II period.

Table 8.5.1 presents the service coverage by target year and by level of service as well as the additional population to be served (details are referred to Supporting Report).

Through Phase I development, approximately 65,100 persons in the province will be served by additional water supply services, of which 16,200 persons or 25% of the total will be urban population and 48,900 persons or 75% will be rural population.

For Phase II period, a total of 276,000 persons, of which 135,100 persons or 49% in urban area and 140,900 persons or 51% in rural area, will be further benefited by water supply services. This additional service coverage in urban area includes the upgrade of service level for 71,100 persons served by Level I and II facilities in 1997.

8.5.2 Sanitation

(1) Household toilets

The service coverage (number of households to be served) by different types of sanitary facility is estimated by urban and rural area by municipality for the years 2003 and 2010.

The future service coverage and additional households to be served are estimated to meet the provincial targets using the number of household served in the base year and the number of households in target years.

Additional number of households to be served by different type of facility by urban and rural area by municipality is the shortfall of the number of households to be served in target years comparing with either that in base year or in Phase I (details are referred to Supporting Report). However, when the number of households to be served in target year/s is less than or equal to that in base year, no additional number of households to be served is counted.

Table 8.5.1 Population to be Served by Target Year (Water Supply)

Name of Municipality	Area	Phase I Coverage (2003)										Phase II Coverage (2010)											
		Total Population			Service Coverage			Additional Population to be Served				Total Population			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	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total
Alabei (Capital)	Urban	15,535	3,118	8,067	11,185	480				480	26,762	25,424			25,424				25,424	22,306			22,306
	Rural	41,789	350	24,499	25,689						48,198	350	840	43,634	44,824				44,824			19,135	19,135
	Total	57,324	3,468	32,566	36,874	480				480	74,960	25,774	840	43,634	70,248	22,306			70,248	22,306		19,135	41,441
Glan	Urban	20,257	5,683	8,794	14,585	1,583			1,583		30,742	29,205			29,205				29,205	23,522			23,522
	Rural	67,059	336	5,448	36,882	4,716			4,716		64,991	336	5,448	54,658	60,442				54,658			23,560	23,560
	Total	87,316	6,019	5,556	39,892	5,146			5,146		95,733	29,541	5,448	54,658	89,647	23,522			89,647	23,522		23,560	47,082
Kiamba	Urban	13,592	833	612	9,786	833			833		14,940	14,193			14,193				14,193	13,360			13,360
	Rural	32,797		3,438	16,510						35,816		3,438	29,871	33,309				29,871			13,361	13,361
	Total	46,389	833	4,050	24,851	833			833		50,756	14,193	3,438	29,871	47,502	13,360			47,502	13,360		13,361	26,721
Maasim	Urban	9,841	1,542	5,544	7,086	672			672		10,727	10,191			10,191				10,191	8,649			8,649
	Rural	25,943		1,938	14,821						26,454		1,938	22,664	24,602				22,664			7,843	7,843
	Total	35,784	1,542	1,938	20,365	672			672		37,181	10,191	1,938	22,664	34,793	8,649			34,793	8,649		7,843	16,492
Maitum	Urban	11,403		8,857	8,857						11,726	11,140			11,140				11,140	11,140			11,140
	Rural	28,190		2,640	15,775						28,734		2,640	24,083	26,723				24,083			8,308	8,308
	Total	39,593		2,640	24,632						40,460	11,140	2,640	24,083	37,863	11,140			37,863	11,140		8,308	19,448
Malapaan	Urban	28,840	3,366	90	17,309	1,776			1,776		30,241	28,729			28,729				28,729	23,363			23,363
	Rural	26,944		3,486	11,333			1,536			28,608		3,486	23,119	26,605				23,119			11,786	11,786
	Total	55,784	3,366	3,576	28,642	3,584			3,312		58,849	28,729	3,486	23,119	55,334	25,363			55,334	25,363		11,786	37,149
Malungon	Urban	33,604	10,850	390	12,955	24,195			10,850		43,776	41,587			41,587				41,587	30,737			30,737
	Rural	94,167		4,787	47,005			2,645			103,954	4,787	4,787	103,954	108,741				103,954			56,949	56,949
	Total	127,771	10,850	5,177	59,960	75,987			10,850		160,702	41,587	4,787	103,954	150,328	30,737			150,328	30,737		56,949	87,686
Provincial Total	Urban	133,072	25,392	1,200	69,459	16,194			16,194		168,914	160,469			160,469				160,469	135,077			135,077
	Rural	316,889	686	22,577	161,041	8,897			8,897		349,727	686	22,577	301,983	325,246				301,983			140,942	140,942
	Total	449,961	26,078	23,777	230,908	280,763			16,194		518,641	161,155	22,577	301,983	485,715	135,077			485,715	135,077		140,942	276,019

In the determination of the number of households to be served by flush type toilet, when the number of households to be served in the target year is higher than in base year, the target coverage is applied with conditions. When the target coverage is higher than Level III water supply coverage, the latter coverage is adopted, while in the other case, the target coverage is applied. In cases where the target coverage is less than that in base year, the base year coverage is adopted.

For Phase I, any type of existing sanitary facilities both in urban and rural areas is to be utilized during Phase I period. For Phase II, water-sealed toilet facilities in Phase I both in urban and rural areas are to be utilized.

The projected number of served households at the end of the Phase I period is 58,300. Additional households to be served totaled to 24,100, of which 31% is urban households and 69% is rural households. While at the end of Phase II period, the number of served households are 109,200 with an additional households to be served at 51,000. Table 8.5.2 provides the number of households to be served by target year for urban and rural areas by municipality.

(2) School toilets

The service coverage or the number of public school students to be served is estimated by municipality for the years 2003 and 2010.

The future service coverage and additional number of students to be served are estimated using the number of students served in the base year, the number of students in target years and the provincial sector targets.

Additional number of students to be served by municipality is the shortfall of the number of students to be served in targets comparing with either that in base year or in Phase I (details are referred to Supporting Report). However, when the number of students to be served in target/s is less than or equal to the base year, no additional number of households to be served is considered.

The existing facilities are to be utilized during Phase I period, while the facilities in Phase I are to be utilized during Phase II period.

Table 8.5.2 Additional Number of Households to be Served by Target Year (Household Toilets)

Name of Municipality	Area	Phase I Coverage (2003)										Phase II Coverage (2010)									
		Total Households			Number of Served Households			Additional Number of Households to be Served				Total Households	Number of Served Households			Additional Number of Households to be Served					
		Flush	VIP/Dry	Total	Flush	VIP/Dry	Total	Flush	VIP/Dry	Total	Flush		VIP/Dry	Total	Flush	VIP/Dry	Total	Flush	VIP/Dry	Total	
Alabel (Capital)	Urban	3,082	2,292	2,547			255			255			6,691	3,112	2,856	255	6,223	3,112	564		3,676
	Rural	8,511	4,987	6,234			1,247			1,247			12,050	350	8,043	1,247	9,640	350	3,056		3,406
	Total	11,593	7,279	8,781			1,502			1,502			18,741	3,462	10,889	1,502	15,863	3,462	3,620		7,082
Glan	Urban	3,697	2,070	2,958	569	261	296	1,126		296			7,686	3,574	3,278	296	7,148	2,982	1,208		4,190
	Rural	12,798	6,136	7,679	7,679	2,455	1,536	3,991		3,991			16,248	336	11,126	1,536	12,998	329	4,990		5,319
	Total	16,495	8,206	10,637	569	2,716	1,832	5,117		5,117			23,934	3,910	14,404	1,832	20,146	3,311	6,198		9,509
Kiamba	Urban	2,826	452	2,261	434	248	226	908		226			3,735	1,737	1,511	226	3,474	1,285			1,285
	Rural	6,546	4	3,928	3,928	786	786	786		786			8,954	4	6,373	786	7,163		3,235		3,235
	Total	9,372	456	6,189	434	248	1,012	1,694		1,694			12,689	1,741	7,884	1,012	10,637	1,285	3,235		4,520
Maasim	Urban	1,926	308	1,541	298		154	452		154			2,682	1,247	1,093	154	2,494	939	14		953
	Rural	4,951	2,377	2,971	2,971	488	591	1,079		1,079			6,614	1,247	4,697	594	5,291	939	2,320		2,320
	Total	6,877	3,08	4,512	298	488	745	1,531		1,531			9,296	1,247	5,790	748	7,785	939	2,334		3,273
Maitum	Urban	2,131	1,534	1,705		402	171	573		171			2,932	1,364	1,192	171	2,727	1,364			1,364
	Rural	5,463	2,622	3,278		115	655	770		655			7,184		5,091	656	5,747		2,469		2,469
	Total	7,594	4,156	4,983		517	826	1,343		826			10,116	1,364	6,283	827	8,474	1,364	2,469		3,833
Malapatan	Urban	5,421	867	4,337	867	248	434	1,549		434			7,560	3,516	3,081	434	7,031	2,649	45		2,694
	Rural	5,263	2,526	3,158		1,203	630	1,833		630			7,152		5,090	632	5,722		2,564		2,564
	Total	10,684	867	7,495	867	1,451	1,064	3,382		3,382			14,712	3,516	8,171	1,066	12,753	2,649	2,609		5,258
Malungon	Urban	6,235	3,491	4,988	998	1,070	491	2,559		491			10,944	5,089	4,590	499	10,178	4,091	1,099		5,190
	Rural	17,801	8,545	10,681		4,812	2,122	6,934		2,122			29,232		21,250	2,136	23,386		12,705		12,705
	Total	24,036	12,036	15,669	998	5,882	2,613	9,493		2,613			40,176	5,089	25,840	2,635	33,564	4,091	13,804		17,895
Provincial Total	Urban	25,318	3,217	20,337	3,166	2,229	2,027	7,422		2,027			42,230	19,639	17,601	2,035	39,275	16,422	2,930		19,352
	Rural	61,333	30,331	37,929		9,073	7,567	16,640		7,567			87,434	690	61,670	7,587	69,947	679	31,339		32,018
	Total	86,651	3,228	58,266	3,166	11,302	9,594	24,062		9,594			129,664	20,329	79,271	9,622	109,222	17,101	34,269		51,370

The projected number of served students at the end of Phase I period is 58,800. The additional students to be served are 26,200. While at the end of Phase II period, the projected number of served students are 111,100 with an additional students to be served at 52,300. Table 8.5.3 summarizes the number of public school students to be served by target year.

Table 8.5.3 Add'l. Number of Public School Student to be Served by Target Year (School Toilets)

Name of Municipality	Phase I Coverage (2003)			Phase II Coverage (2010)		
	Total No. of Public School Student	Std. No. of Public School Students to be Served	Add'l. No. of Public School Student to be Served	Total No. of Public School Student	Std. No. of Public School Students to be Served	Add'l. No. of Public School Student to be Served
Alabel (Capital)	13,122	7,873	4,953	19,304	17,374	9,501
Glan	19,970	11,982	4,942	24,631	22,168	10,186
Kiamba	9,516	5,710		11,800	10,620	4,910
Maasim	8,199	4,919	2,879	9,052	8,147	3,228
Maitum	7,987	4,792		8,706	7,835	3,043
Malapatan	12,571	7,543	4,223	14,090	12,681	5,138
Malungon	26,590	15,954	9,194	35,832	32,249	16,295
Provincial Total	97,955	58,773	26,191	123,415	111,074	52,301

(3) Public toilets

The service coverage of public utilities with sanitary toilet facility by municipality is estimated for the years 2003 and 2010.

The future service coverage and additional coverage are estimated using the existing number of public utilities with sanitary toilets in the base year, the number of public utilities in target years, and provincial sector targets.

The additional number of public utilities with sanitary toilets needed by municipality is the shortfall of the number of public utilities in target year comparing with either the existing coverage or Phase I coverage (details are referred to Supporting Report).

The existing sanitary facilities are to be utilized during Phase I period. The facilities in Phase I are to be utilized during Phase II period.

The number of served public utilities at the end of Phase I period is 94. The additional public utilities to be served are 43. While at the end of Phase II period, the number of served public utilities are 147 with an additional public utilities to be served at 53. Table 8.5.4 summarizes the additional number of public utilities to be served by municipality by target year.

Table 8.5.4 Additional Number of Public Utilities with Sanitary Toilets by Target Year

Name of Municipality	Type	Phase I Coverage (2003)		Phase II Coverage (2010)	
		Add'l. No. of Public Utility with Sanitary Toilets	No. of Public Utility with Sanitary Toilets	Add'l. No. of Public Utility with Sanitary Toilets	No. of Public Utilities with Sanitary Toilets
Alabel (Capital)	Public Market	2	4	3	7
	Bus/Jeepney Terminal	11	2	2	4
	Parks/Playground	1	2	2	4
	Total	4	8	7	15
Glan	Public Market	5	16	5	21
	Bus/Jeepney Terminal	1	2	3	5
	Parks/Playground	1	3	2	5
	Total	7	21	10	31
Kiamba	Public Market	1	4	1	5
	Bus/Jeepney Terminal	2	5	2	7
	Parks/Playground	5	5	6	11
	Total	8	14	9	23
Maasim	Public Market	2	4	3	7
	Bus/Jeepney Terminal	1	2	1	3
	Parks/Playground	2	3	2	5
	Total	5	9	6	15
Maitum	Public Market	2	4	2	6
	Bus/Jeepney Terminal	1	2	1	3
	Parks/Playground	2	2	2	4
	Total	5	8	5	13
Malapatan	Public Market	2	3	2	5
	Bus/Jeepney Terminal	1	2	2	4
	Parks/Playground	1	1	1	2
	Total	4	6	5	11
Malungon	Public Market	5	20	5	25
	Bus/Jeepney Terminal	2	2	3	5
	Parks/Playground	3	6	3	9
	Total	10	28	11	39
Provincial Total	Public Market	19	55	21	76
	Bus/Jeepney Terminal	9	17	14	31
	Parks/Playground	15	22	18	40
	Total	43	94	53	147

8.5.3 Urban Sewerage

The service coverage in 2010 (Phase II) is estimated for the municipalities with population of more than 10,000 in urban area provided by Level III water supply. It is assumed that half of the population in the area/s is to be served by the sewerage systems. Table 8.5.5 shows the population to be served in Phase II.

Table 8.5.5 Population to be Served by Urban Sewerage in Phase II

Name of Municipality	Urban Population in 2010	Level III Water Supply Coverage	Population to be Served
Alabel (Capital)	26,762	25,424	13,381
Glan	30,742	29,205	15,371
Kiamba	14,940	14,193	7,470
Maasim	10,727	10,191	5,364
Maitum	11,726	11,140	5,863
Malapatan	30,241	28,729	15,121
Malungon	43,776	41,587	21,888
Provincial Total	168,914	160,469	84,458

8.5.4 Solid Waste

Future requirements in the sub-sector are studied giving priority to urban area for the Phase I. Staged improvement for the rural area shall be studied in the future.

Service coverage in Phase I was assumed at 60% with reference to the present service coverage of 38% in urban area. Additional service coverage in Phase I is calculated as a shortfall of target coverage in Phase I comparing with current service coverage. Table 8.5.6 presents additional service coverage for Phase I in the urban area.

Table 8.5.6 Add'l. No. of Urban HHs to be Served by Municipal Solid Waste System in Phase I

Name of Municipality	No. of Urban Households Served in the Base Year	Phase I Coverage (2003)		
		No. of Urban Households	Urban Households Coverage	Add'l. No. of Urban Households to be Served
Alabel (Capital)	1,713	2,647	1,713	
Glan	1,021	3,257	1,955	934
Kiamba	1,200	2,515	1,509	309
Maasim	738	1,756	1,054	316
Maitum	900	1,944	1,167	267
Malapatan	2,731	4,836	2,902	171
Malungon		4,890	2,934	2,934
Provincial Total	8,303	21,845	13,234	4,931

8.6 Facilities, Equipment and Rehabilitation to Meet the Target Services

8.6.1 Water Supply

(1) Required facilities

Water supply facilities required by service level were estimated by urban and rural area by municipality based on the additional service coverage by target year and summarized in Table 8.6.1 (details are referred to Supporting Report).

Urban water supply:

Physical requirements of Level III systems were estimated as the number of required house connections. Mode of project indicates whether future urban water supply will be implemented as expansion of existing system or construction of a new system. The number of water sources was also estimated based on the water source evaluation results in Chapter 7.

Rural water supply:

Physical requirements of Level II systems were estimated as the number of systems and number of communal faucets, while that of Level I facilities were first estimated as the number of wells with classification of deep and shallow wells. Deep wells were further subdivided in terms of three different standard depths based on the water source evaluation results.

Furthermore, as for Level I facilities, in this PW4SP, 20% of the total required facilities will be implemented by public (LGUs) and 5% of these public Level I facilities will be allocated to spring development.

(2) Rehabilitation

Rehabilitation requirements were estimated as 10% of the total number of deep wells to be constructed under PW4SP. Rehabilitation work will be mainly redevelopment of wells by means of air surging, while minor repair of concrete apron and handpump will be undertaken by respective beneficiary organizations.

Table 8.6.1 Water Supply Facilities Required by Target Year

Name of Municipality	Phase I (2003) Requirements										Phase I (2010) Requirements						
	Urban Water Supply (Level III)					Rural Water Supply					Urban WS (Level III)			Rural Water Supply			
	Mode of Project	No. of Add'l. Deep Wells	No. of HHs Connection	Level II		Level I			No. of Add'l. Deep Wells	No. of HHs Connection	Level I						
				No. of System	No. of Communal Faucets	Number of Deep Wells		Number of Deep Wells			40 m	80 m	120 m	Sub-total			
Alabel (Capital)	Expansion	1	95	3						3	5,577	256			256	63	319
Glan	Expansion	1	289	9	180					4	5,881	276			276	117	393
Kiamba	New	1	173	4						2	3,340	45			45	178	223
Maasim	Expansion	1	132	7						2	2,162	92			92	39	131
Maitum	N/A			14						2	2,785		28		28	111	139
Malapatan	Expansion	1	334	3	60					4	6,341	158			158	39	197
Malungon	New	2	2,013	5	100			404		4	7,684		760		760	190	950
Provincial Total	Exp- 4 New- 2	7	3,036	45	340			404		21	33,770	827	788		1,615	737	2,352

(3) Equipment

Logistic support:

For rural water supply development, 1 unit each or set of the following equipment was considered necessary for the provincial government to conduct various activities of PW4SP implementation;

Transportation- service vehicle

Office equipment- computer with printer, typewriter, mimeo machine, scanning machine and copier

Field equipment- sound system, tape recorder and tools for maintenance

For urban water supply, no hardware was considered.

Well drilling and rehabilitation equipment:

As a reference information, necessary types and number of well drilling and rehabilitation equipment were studied considering the existing equipment of sector agencies in the province.

During Phase I, a total of 77 Level I deep wells shall be newly constructed by public (LGUs) and 10% of these deep wells shall be rehabilitated annually. Presently, one unit each of percussion and rotary type drilling rig, applicable for more than 8" of bore hole diameter is operational at DPWH-DEO in the province.

Therefore, the existing rigs shall be fully utilized for construction of deep wells. However, one unit each of well rehabilitation equipment and support vehicle shall be mobilized/procured either by the private sector or LGUs (details are referred to Supporting Report).

Selection of well drilling machine

An appropriate type of well drilling machine with its specifications shall be selected after comprehensive study on the technical requirements, local capability in O&M of the machine and cost effectiveness.

From the technical viewpoint, geological conditions in the province allow for the use of either rotary or percussion type drilling machine (no rock drilling is expected). While, in view of economical and O&M experience on the machine in the local area, a percussion type is recommendable. Although, the rotary type machine is quite effective to reduce construction period under soft soil condition, special training on mud-circulation, handling manner, etc. are required together with additional equipment and materials as com-

pared with percussion type. The drilling speed of the percussion type is rather slow, but has advantages in drilling boulder and cobble formations.

One unit of truck mounted percussion drilling machine was considered to be procured in the long-term development period.

(4) Laboratory

Required New Building:

To ensure periodic examination of the potability of drinking water supplies, 2 new laboratory facilities will be constructed in Alabel and Glan. Satellite laboratories are proposed to be set up in Kiamba and Glan to cover the western and eastern municipalities, respectively. Kiamba will utilize the existing municipal hospital to house the laboratory. The new building will have a floor area of 57m² to house an examining laboratory, an office space, a storage room and a toilet. Water and power supplies will be provided.

Instrument/Equipment and Other Laboratory Accessory:

Three (3) sets of instrument/equipment will be necessary to undertake regular water quality monitoring and surveillance activities. The distribution would be: 1 set for the upgrading of the existing provincial laboratory, and the other 2 sets, to the new laboratories. The following are the requirements:

Item	Unit	Upgrading of		
		PHO Laboratory	Satellite Laboratory Kiamba	Glan
1. Instrument/Equipment				
Turbidity meter	set	1	1	1
Color meter	set	1	1	1
PH/Residual chlorine checker	set	1	1	1
Incubator	set	0	1	1
Refrigerator	set	1	1	1
Sterilizer	set	1	1	1
Portable water quality testing kit	set	1	1	1
Electric stove	set	0	1	1
Range hood	set	1	1	1
2. Glassware/Chemical	set	1	1	1
3. Accessory				
Sink	set	1	1	1
Working table	set	1	1	1
Shelf	set	1	1	1
Office desk	set	1	1	1
Chair	set	1	1	1
File cabinet	set	1	1	1

Note: 0 = existing

1 = required number

8.6.2 Sanitation

This sub-section refers to physical requirements by target year covering household, school and public toilet facilities. Table 8.6.2 presents the required sanitation facilities by target year. Rehabilitation for the sanitation facilities is considered as part of recurrent cost.

(1) Household toilets

Future requirements in the number of household toilets by different type for urban and rural areas were estimated based on the additional households to be served by type of facility both for urban and rural areas by target year (details are referred to Supporting Report).

(2) School toilets

The future requirements in the number of toilet facilities were estimated based on the standard number of students to be served by a 5-unit standard facility and the additional students to be served by target year (details are referred to Supporting Report).

Total required facilities were further broken down into urban and rural areas by applying the percentage share of urban and rural population.

(3) Public toilets

Future requirements in the number of toilet facilities were estimated based on the additional number of toilets for public markets and bus/jeepney terminals located in urban areas (details are referred to Supporting Report).

8.6.3 Urban Sewerage and Solid Waste

Physical requirements for the sewerage facilities are not discussed in this sub-section. Further study shall be conducted in the future.

As reference information, the number of refuse collection trucks is estimated for the urban area in Phase I. Six (6) additional units of truck are required to meet assumed service coverage as reflected in Table 8.6.3.

Table 8.6.2 Sanitation Facilities Required by Target Year

Name of Municipality	Phase I (2003) Requirements														Phase II (2010) Requirements																
	Urban Sanitation							Rural Sanitation							Urban Sanitation							Rural Sanitation									
	No. of Households			No. of Public Toilets		No. of Public Toilets		No. of Households			No. of Public Toilets		No. of Public Toilets		No. of Households			No. of Public Toilets		No. of Public Toilets		No. of Households			No. of Public Toilets		No. of Public Toilets				
	Flush	Pour Flush	VIP/ Dry	Total	No. of Public Sch. Toilets	Public Market	Jeepney Terminal	Parks/ Playground	Flush	Pour Flush	VIP/ Dry	Total	No. of Public Sch. Toilets	Public Market	Jeepney Terminal	Parks/ Playground	Flush	Pour Flush	VIP/ Dry	Total	No. of Public Sch. Toilets	Public Market	Jeepney Terminal	Parks/ Playground	Flush	Pour Flush	VIP/ Dry	Total	No. of Public Sch. Toilets		
Alabell (Capital)			255	255	7	2	1	1			1,247	1,247	18							3,112	564	3,676	17	3	2	2	350	3,056		3,406	56
Clan	569	261	296	1,126	6	5	1	1		2,455	1,536	3,991	19						2,982	1,208	4,190	16	5	3	2	329	4,990		5,319	75	
Kiamba	434	248	226	908		1	2	5			786	786							1,285		1,285	7	1	2	6		3,235		3,235	37	
Maasin	298		154	452	4	2	1	2		488	591	1,079	10						939	14	953	5	3	1	2		2,320		2,320	29	
Mshum		402	171	573		2	1	2		1,364	655	770							1,364	45	2,694	4	2	1	2		2,469		2,469	28	
Malapatan	867	248	434	1,549	11	2	1	1		1,203	630	1,833	10						4,091	1,099	5,190	13	2	2	1		2,564		2,564	31	
Malungon	998	1,070	491	2,559	12	5	2	3		4,812	2,122	6,934	34						16,422	2,930	19,352	22	5	3	3		12,705		12,705	117	
Provincial Total	3,166	2,229	2,027	7,422	40	19	9	15		9,073	7,567	16,640	91					16,422	2,930	19,352	84	21	14	18	679	31,339		32,018	373		

Table 8.6.3 Number of Refuse Collection Trucks Required in Phase I

Name of Municipality	Additional Urban Households to be Served	Estimated Daily Amount of Refuse to be Generated, (Kg)	Number of Collection Truck Required
Alabel (Capital)			
Glan	934	391	1
Kiamba	309	130	1
Maasim	316	133	1
Maitum	267	112	1
Malapatan	171	72	1
Malungon	2,934	1,227	1
Provincial Total	4,931	2,065	6

8.7 Identification of Priority Projects for Medium-Term Development Plan

The present service coverage by municipality with reference to the target coverage indicates the direction of development effort for implementing PW4SP with municipal priorities.

Specific projects shall be selected subject to detailed studies and will not be discussed in the provincial master plan. In addition, pertinent information to identify priority projects is not available both at provincial and municipal level during this PW4SP preparation, except some future expansion work for WDs.

The general criteria for identifying priority projects as guide for implementing the PW4SP are summarized below.

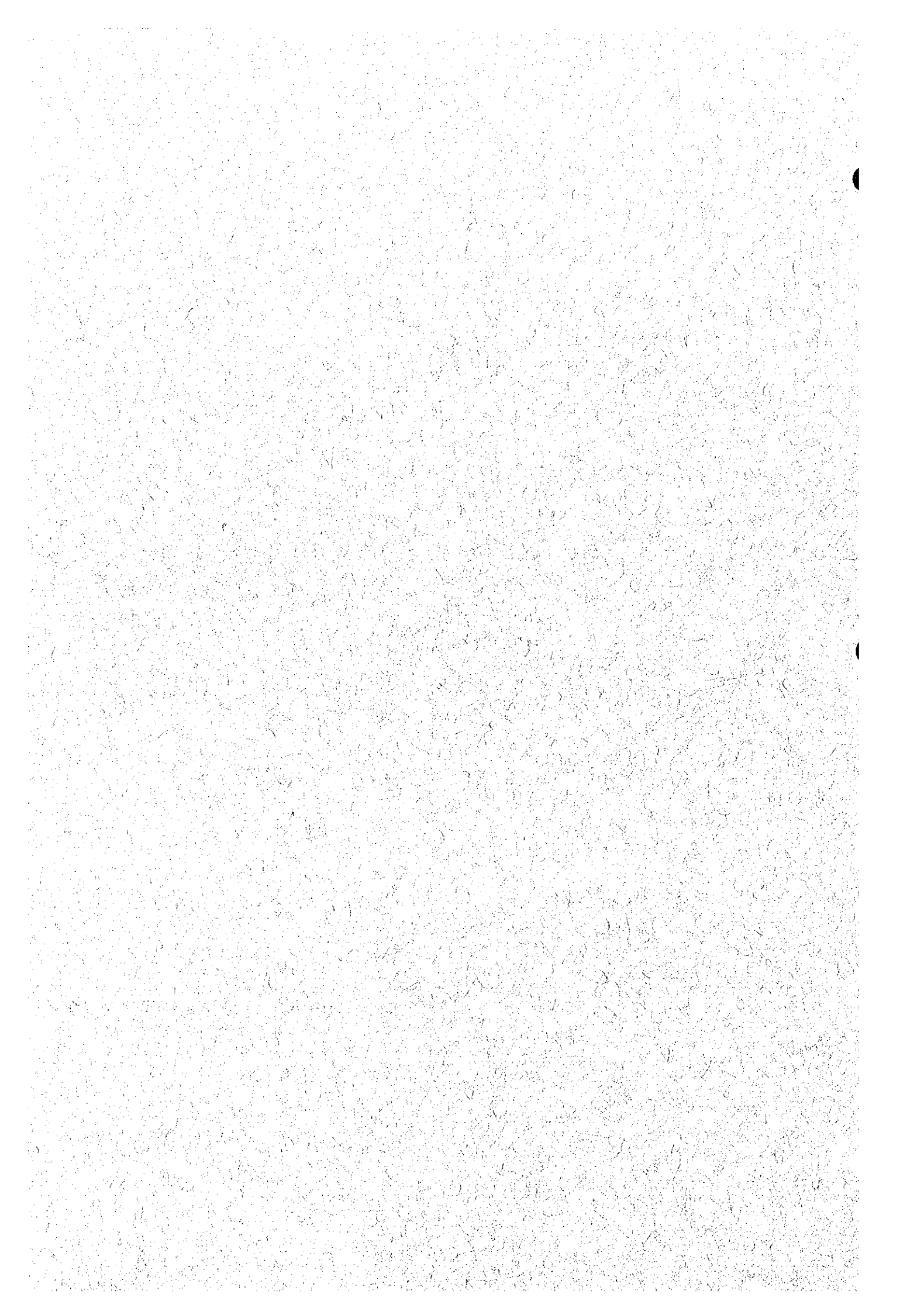
The first level of priority should be given to projects with positive feasibility studies and identified funding. Next level of priority should be given to projects with positive feasibility studies, although no funding source has been identified. The third level should be for which feasibility study has been made. Within each level, if funds were insufficient, a ranking could be carried out applying some factors, i.e., willingness to pay, water-related diseases status and per capita cost. Under the above conditions, the implementers must prepare a list of projects.

Due attention shall be paid on the importance of integrated development of relevant sub-sectors to maximize the effects and benefits through simultaneous implementation of water supply and sanitation projects. On a municipal level priority, synthetic evaluation of sector components for concerned municipalities (which is studied in the financial arrangements, Chapter 11) may be used for implementation arrangements.

Chapter

9

**SECTOR MANAGEMENT FOR
MEDIUM-TERM DEVELOPMENT**



9. SECTOR MANAGEMENT FOR MEDIUM-TERM DEVELOPMENT

9.1 General

In order to manage the water and sanitation sector effectively, the provincial and municipal governments will have to make some adjustments in their current structures and policies. This Chapter proposes the mechanisms, processes and structures needed in the medium-term to achieve the coverage targets with sustainability. Not all recommendations can be laid out with the same level of detail at this time as some are dependent on further policy guidelines being formulated at the national level. These include the on-going study on access of LGUs to external financing assistance and the sector devolution process.

9.2 Sector Management

(1) Development of the vision

One glaring institutional need at the local level is a common vision and mission statement for the sector. A critical mass of people and resources that share in the vision must be identified and harnessed for project implementation. Local planners need to focus on the long-term requirements i.e., beyond forming users' associations, drilling wells, distributing bowls, etc. Based on a realistic assessment of constraints, opportunities and demand, the province has set its vision and mission for the sector.

Initial vision statement: The province will adopt a two-phased plan, which seeks to dramatically improve the provision of water supply and sanitation. In the medium-term (1999-2003) plan, the province seeks to increase water supply coverage in urban areas to 72% and in rural areas to 55%. On the other hand, household toilets will be made available to 80% of the urban population and 60% of the rural population; 60% of the students in public schools will have adequate sanitary toilet facilities; 100% of public utilities will have sanitary toilets; and 60% of the urban population will be covered by solid waste collection services. For its long-term (2004-2010) plan, the province will pursue a more vigorous program to increase water supply coverage in urban areas to 95% and in rural areas to 93%.

For the sanitation sub-sector, individual household toilets will increase up to 93% in urban areas and 80% in rural areas; public school toilets will rise up to 90%; public utilities will have 100% sanitary toilet coverage; while sewerage service will cover 50% of the urban population.

(2) Sector management

A Sector Management Model is presented in Figure 9.2.1 for sector management and project development. It is envisaged that this PW4SP will be used as a basis for the Annual Sector Plan and/or as an input into Loan or Grant Negotiations in the future. The Annual Sector Plan, together with the budgets, will be reviewed by the Governor and passed upon by the legislation as part of the annual provincial budget approval process.

The sector level implementation activities consist principally of three broad areas: social marketing; technical assistance; and monitoring. Project selection follows on from a self-selection process. The identification of a responsible community-based association and technical studies, as needed, will be done. Construction or rehabilitation will take place only after the institutional, financial and technical studies have been done. Operation and maintenance, including arrangements for finances of the system, will be the responsibility of the community organization. The Monitoring Function, on the other hand, will be augmented with water quality surveillance by the Provincial Health Office (PHO) and operational audits done by the LGU.

(3) Service provision policies and objectives

The LGU seeks to provide an adequate level of water and sanitation facilities defined as follows:

- Level I facilities serve at most 15 (fifteen) households per source; Level II public taps serve 5 (five) households per faucet; and Level III systems provide individual household connections.
- Water supply provision will be at least 20 lpcd for Level I; 60 lpcd for Level II; and 100 lpcd for Level III.
- A critical mass of 90% of the individual households in every barangay has sanitary toilet facilities.
- All schools shall have adequate water supply and at least one sanitary toilet facility for every 40 students.

(4) Operating policies

The following policy and strategy statements are adopted by the Provincial Government. These may be reviewed and revised from time to time by the Provincial Government. The key policy statements include the following:

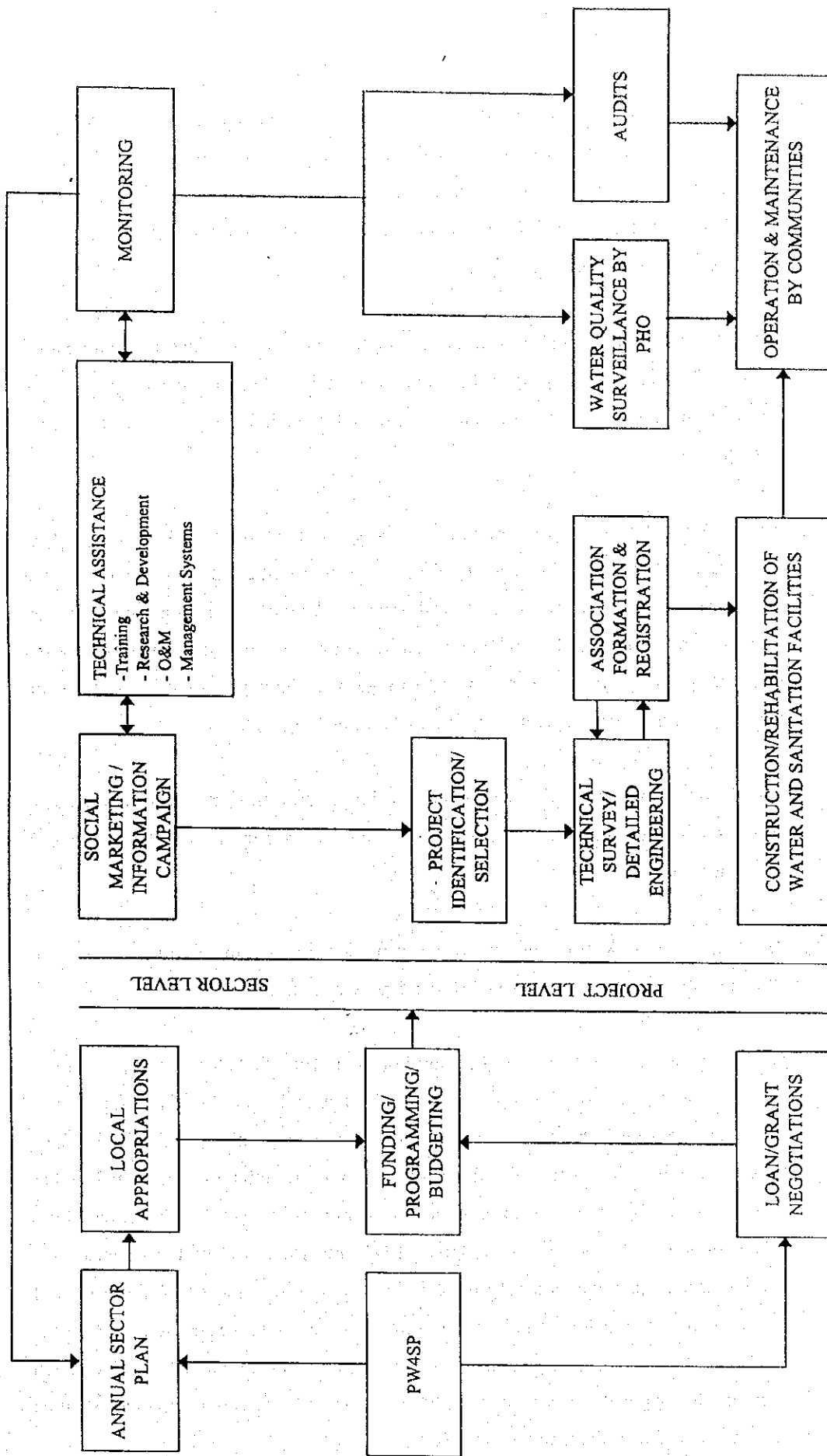


Figure 9.2.1 Sector Management Model

- 1) Sustainability shall be promoted through increased community responsibility for management of facilities. Unless potential users demonstrate initiative and commitment (beyond making the request for assistance) to maintain the systems, no support shall be provided by the LGUs. To the extent possible, the LGUs should utilize existing local resources (self-reliance).
- 2) Selection and prioritization of projects shall be based on demonstrated commitment of the beneficiaries to participate in the project and their willingness to pay; the current water, sanitation and overall health conditions; potentials for growth; and cost implications.
- 3) Technology to be used for the projects shall be appropriate to the local conditions and resources. However, construction of economical facilities shall be pursued not necessarily insisting on low-cost. Phased upward integration and future upgrading of systems and facilities shall also be promoted utilizing to the extent possible previously constructed facilities. In urban centers, a range of technologies may be adopted for wastewater collection and treatment, as well as for drainage.
- 4) An integrated approach to the provision of potable water supply, sanitation and hygiene education shall be promoted. All projects to be developed by the LGU must involve these three elements.
- 5) The LGU shall seek to provide water and sanitation in an equitable manner between rural and urban areas; between wealthy and depressed areas.
- 6) Cost Recovery and Cost Sharing (Subsidy Policies): The LGU shall enforce a rational and consistent policy on the application of subsidies and loans for water supply and sanitation. In May 1996, the Investment Coordination Committee (ICC) of the NEDA adopted a policy "to support the financing of devolved activities with social and/or environmental objectives" based on three considerations namely: Equity, Externalities and Economies of Scale. Accordingly, NEDA advised DILG of the revised cost-sharing arrangement which clearly limited the national government subsidy to Level I water supply systems for 5th and 6th class municipalities up to a maximum 50% of the total project cost. No subsidy from GOP is provided for Level II and III. For sanitation facilities, the national government subsidy for the 3rd to 6th class municipalities shall be from 50% to 70% of the total project cost.

- 7) Private Sector Participation: The government shall give the private sector a substantial and preferential role in the attainment of the PW4SP objectives. In harnessing their participation, less government intervention shall be exercised in areas where the private sector is or can be a key player. An environment designed to empower them to absorb new social responsibilities and proactively convey to the government their aspirations and interests shall be established. The formation of private sector groups, NGOs, community organizations, cooperatives and people's organizations shall be encouraged. The implementation of programs to develop their capabilities in the sector development programs shall be promoted.
- 8) The province's fiscal management, in terms of capital funds generation capability, budget and disbursement, shall be improved. The assistance of the legislative branch in the enactment of the proposed revenue-generating measures shall be sought. Financing through the private sector will also be encouraged.
- 9) Sector development shall be consistent with broader concerns for environmental protection and management. Pollution control, conservation and proper utilization of water and land resources are critical issues. An environmentally responsive management approach to resource use shall be pursued.
- 10) Disaster Response and Emergency Coordination: The LGU shall formulate, as part of its contingency plans, a program to address emergency conditions. The program shall include maintenance of stocks of chlorine, organization and training of local communities on restoration of water supplies and provision of emergency sanitary facilities. The LGU should coordinate closely and regularly with the local officials of the Regional Disaster Coordinating Council (RDCC).

(5) Regulatory policies

In coordination with appropriate national and local agencies, the LGU shall endeavor to set up an effective regulatory framework considering the following:

- 1) Water allocation and water rights policies (conflict resolution) which are within the mandate of the National Water Resources Board. The LGUs or the concerned water utility shall apply for water rights from the Board, prior to implementing a project that would require extraction of water.

- 2) **Water Rate Review:** While the rate setting and approval functions remain largely as a concern of the associations or the Water Districts (and LWUA), a vehicle for resolving grievances against unrealistic tariffs (or other practices) can be instituted by the LGUs. The court system, of course, remains as the final arbiter in conflicts.
- 3) **Association Registration:** The LGUs shall likewise adopt a registration and franchising system for associations responsible for water supply facilities outside the WD franchise areas. Annual reporting requirements will have to be established for monitoring and possibly, auditing purposes.
- 4) **Water Quality:** The National Drinking Water Standards have been established. The LGUs will have to establish a viable mechanism, including water testing and standards enforcement, to ensure that water delivered meets the potability standards. The DOH currently has the responsibility and the regulatory power to stop the operations of water systems not delivering potable water.

6) **Financing system**

In financing water supply investments, the LGUs may tap their Internal Revenue Allotment and/or locally generated revenues, or leverage these resources to borrow from government and private financial institutions. Overall, it is the LGU's responsibility to raise funds to support capital development sector projects and to ensure that adequate O&M reserves are raised by the beneficiary communities.

In the medium-term, the primary sources of funds are envisaged to be provincial & local taxes, allocation from the IRA 20% Development Fund and Municipal Development Fund. Also, in the medium-term, it is envisaged that national & external funds will, although diminishing, continue to be channeled through local offices of central agencies.

Studies are underway to look into the feasibility of direct access of LGUs to external funds. The LGU will continue to monitor the developments and policy decisions to be established as these will invariably affect local financing mechanisms.

To support sanitation activities, housing improvement loans for installing in-house sanitary facilities should be studied and instituted by the LGU. Such a mechanism can be organized with the rural banks or the existing credit cooperatives. Seed funding for this revolving fund also needs to be raised. Upon agreement by the parties, the enabling local legislation establishing the sanitation revolving fund will have to be enacted.

9.3 Institutional Arrangements

This section of the report discusses both existing and proposed roles and responsibilities of agencies involved in WATSAN sector projects. Agencies that are presently involved include national government offices precisely because the devolution of functions related to WATSAN activities is not yet complete. As the province's capability to implement WATSAN projects is enhanced in the medium term, there will be a need for a unit that will coordinate WATSAN project implementation activities between and among national and local office. This coordinating body is the proposed PWSU.

9.3.1 Roles and Responsibilities of Agencies Concerned

In the implementation of WATSAN sector projects, respective governmental agencies from national to barangay levels shall play their roles as described below.

(1) National government agencies

1) Department of the Interior and Local Government

The DILG, through its Water Supply and Sanitation Program Management Office (WSS-PMO) shall coordinate with the funding agency, LGUs and other national government agencies involved in the project implementation. It shall be responsible to:

- a) develop the capacity of PWSU (Provincial Water Supply and Sanitation Unit) and MSLT (Municipal Sector Liaison Team) members in planning, training and organizing, WATSAN technologies, health and hygiene education, gender responsiveness, implementing, monitoring and evaluation of water and sanitation projects. The formation and tasks of PWSU and MSLT are discussed in the following section (9.3.2).
- b) provide staff and administrative support for the project. A Coordinator in each province shall be assigned to ensure project coordination at the provincial level. Its field personnel at the regional, provincial and municipal offices shall be utilized to assist in the capability building programs for LGUs. Monitoring of WATSAN projects shall be integrated in their regular functions.
- c) execute a Memorandum of Agreement (MOA) with the concerned LGUs. MOA shall include cost sharing arrangements with concerned province and municipality, utilization of vehicle and equipment support and possible allocation of LGU's amount out of their internal revenue allotment for the operation, repair and maintenance in the future.

- d) select NGOs to assist its capability building and community management programs for the LGUs and project beneficiaries to improve the delivery of project services and ensure sustainability.
- e) conduct orientation and information dissemination for the provincial officials on the project including requirements and strategies to obtain their support and commitment in pursuing the project;
- f) coordinate and utilize the technologies of DPWH and DOH including equipment and existing facilities; and
- g) procure vehicle, well rehabilitation equipment, maintenance tools, and water quality testing kits by means of bulk contract.

The other national government support agencies concerned and their respective functions in the project are:

2) Department of Public Works and Highways

The DPWH shall be responsible to:

- a) set and/or update, as and when necessary, technical standards for engineering surveys, design, construction, operation and maintenance of water supply system.
- b) upon agreement with the LGUs, assist in the conduct of engineering surveys and in the preparation of plans, specifications and programs of work, through its District Offices.
- c) upon agreement with the LGUs, assist in construction management, through its District Offices.
- d) conduct technical researches in coordination with the LGUs

3) Department of Health

The DOH shall be responsible to:

- a) set and/or update, as and when necessary, standards on water quality testing, treatment and surveillance, and sanitary practice.
- b) provide technical assistance to the LGUs in the conduct of periodic water quality control (once in every three months as stipulated in the Philippine National Standards for Drinking Water) and surveillance-related activities.
- c) monitor and evaluate, on a regular basis, health and hygiene education programs implemented by local health officers, particularly in areas where waterworks systems are expected to be constructed.

4) National Water Resource Board

The NWRB shall be responsible to:

- a) regulate the use of water resources through the issuance of water rights (for the Level I water supply projects, water right permit shall be confirmed upon the site selection is completed);
- b) establish and manage a user-friendly water resources data management system.

(2) Province

The province, through its PWSU that is to be newly organized, shall handle all activities related to the development of the sector in the province. The PWSU shall engage the services of private contractors, and undertake construction supervision and administrative arrangements of the projects with the assistance from DILG and Consultants.

The PWSU shall be composed of staff representatives from PPDO, PEO and PHO. The role and responsibility of each member as well as the joint tasks to be undertaken among them shall be clearly defined. The PPDC shall act as a head of the unit and decides on WATSAN project issues and problems arising therein. The Team member shall work hand in hand with the CO/NGO supervisor who shall be primarily responsible for the coordination of project activities at the municipal level. A focal person shall be designated from the PWSU members, preferable from PPDO, to serve as understudy of the CO/NGO to ensure social technology transfer before the phase out of the NGO intermediary. The PWSU, together with the Municipal Sector Liaison Team (MSLT) shall be primarily responsible to:

- a) annually update the PW4SP;
- b) prepare the program of work and implementation schedule;
- c) conduct information dissemination and consultation with the municipal and barangay officials;
- d) select and prioritize project sites using the selection criteria developed for the project;
- e) assist in organizing BWSAs for Level I water supply and skills training for the BOD/officers, bookkeeper and caretakers of the operating body on operation, repair and maintenance;
- f) periodically apprise the Governor of the project developments;
- g) manage and monitor the utilization of vehicle and equipment procured under the project;

- h) monitor, evaluate and prepare reports on the progress of project implementation for submission to WSS-PMO in case of ODA assisted projects; and
- i) provide continuing technical and institutional assistance to the MSLT and project beneficiaries.

(3) Municipality

Each municipality shall create a Municipal Sector Liaison Team (MSLT) from MPDO, MEO and MHO. The role and responsibility of each member as well as the joint tasks to be undertaken among them shall be clearly defined. A focal person shall be designated among them, preferable from MPDO, to serve as understudy of the CO/NGO to ensure social technology transfer before the phase out of CO/NGO intermediary. The MSLT shall work hand-in-hand with the CO/NGO and with the PWSU support. It shall be responsible to:

- a) select the priority sites/barangays in close coordination with the municipal development council;
- b) conduct consultation meetings with the barangay officials/development councils and community members;
- c) facilitate the barangay water and sanitation survey and spot map, and prepare the survey summary report and spot map;
- d) organize BWSAs for Level I water supply, if necessary, and conduct skills training for the BOD/officers, bookkeeper caretakers of the operating body on operation, repair and maintenance;
- e) assist the operating body in the establishment of proper systems and procedures for the collection of water charges, sanction for delay and non-payment, opening and operating bank accounts and budget allocation for the operation, repair and maintenance and cost recovery of the facilities;
- f) through its MHO/RHU and its network of barangay health workers and volunteers, conduct information campaign on proper health and hygiene education in the community;
- g) periodically apprise the Mayor of the project development;
- h) manage and monitor the maintenance tools and water quality testing kits procured under the project;
- i) monitor and prepare report on the status of project implementation for submission to the PWSU; and
- j) provide continuing technical and institutional assistance to the project beneficiaries.

(4) Barangay

The barangay acts as a basic unit for the development. Barangay officials and development councils serve as the entry point for all development activities in the community.

The barangay officials will play an important role in planning and implementation of WATSAN projects. They shall collaborate with the PWSU/MSLT in gathering data/information and in undertaking various activities in the barangay such as in conducting survey and spot mapping by men and women volunteers, general assembly meetings and mobilization of resources in the community. The barangay officials/development council shall serve as advisor/facilitator of the operating body and community members.

Upon completion of the Level I water supply project, the facilities shall be turned-over to the operation body. A certificate of acceptance serves as a document of ownership of the beneficiaries and acceptance of their responsibility in the project. Upon decision of the community members, existing people's/community based organization, otherwise, a new water association (BWSA) shall be formed as an operating body.

The operating body shall own the project and shall undertake the responsibility for the operation, repair, maintenance and cost recovery of the facilities. Specifically, it shall be responsible to:

- a) regularly collect contributions from member-users for the operation, repair, maintenance and cost recovery of the facilities;
- b) maintain proper and updated financial records and transactions of funds;
- c) undertake minor repair of the facilities for Level I and II water supply facilities and in case of major repair, request assistance from the MSLT/PWSU members;
- d) encourage members to attend meetings and training activities mainly for Level I water supply;
- e) implement policies and procedures approved by the BOD/officers; and
- f) encourage members to observe proper health and sanitation practices.

The duties and responsibilities of member-users include the following:

- a) pay monthly water charge contribution to the operating body;
- b) attend meetings and training activities designed for members;
- c) observe rules and regulations and policies approved by the BOD/officers;
- d) remind other water users to use the facility properly, especially for Level I and II water supply;

- e) keep the premises of the water facility clean, sanitary and free from excess water which may cause contamination of the water source; and
- f) adopt proper health and sanitation practices.

9.3.2 Institutional Arrangements

In the medium-term, it is recommended that a full-time Provincial Water Supply and Sanitation Unit (PWSU) be set up possibly under the PPDO. The main functions of the PWSU will be:

- to coordinate the planning and implementation activities related to the PW4SP, among the concerned national, provincial and municipal agencies; and
- to continue to implement, assist and monitor all water supply and sanitation services in the province in coordination with the municipalities.

Over the long –term, the PWSU may be elevated to the same level as the PPDO to underscore the importance of the WATSAN sector in the development of the province, although modification of the LGC may be necessary.

The Sarangani provincial government has limited WATSAN project implementation capabilities among its office (e.g. PEO, PPDO, PHO, etc.). It will be the principal task of the proposed PWSU to coordinate and harness any existing capabilities of both national and local offices for future large WATSAN projects such as the PW4SP, and other ODA – and locally –funded initiative.

During the formation years of the proposed PWSU, the provincial government should ensure that the unit will be provided adequate logistical and financial support. The DILG – PMO should also continue providing technical and managerial assistance to the unit. Upon agreement with the LGU concerned, the DPWH – DEO should also continue to lend its water supply facility development capability with the provinces.

The initial professional-level staffing of the proposed PWSU will be as follows:

Provincial Water Supply & Sanitation Coordinator	1
Assistant Provincial Water Supply & Sanitation Coordinator	1
Community Development & Training Specialist	2
Water Supply & Sanitation Engineer	2
Monitoring Specialist	1
Total Personnel Required	7

The Governor will make the appointment based on the short list. The draft Terms of Reference for the various posts is proposed as follows:

(1) The Provincial Water Supply & Sanitation Coordinator (PWSC) will lead an interdisciplinary PWSU Team. The PWSC will ensure timely preparation, implementation and reporting of sector and project progress based on the annual sector plan. For day to day operations, the PWSC will report to the Governor. The PWSC will also liaise with all project implementors at the municipal level. The PWSC shall be the key contact person of the DILG-PMO. Specific duties include:

- 1) Prepare guidelines, work plans and schedules for project implementation work at the municipal level; coordinate the work of consultants and NGOs in their various tasks.
- 2) Prepare a detailed work plan and program of activities for project implementation at the provincial level (including technical, financial and organizational aspects) and ensure regular reports on the progress of activities.
- 3) Guide the conduct of sector and project management and the supervision, and coordination of the PWSU; ensure the quality and timeliness of the outputs of the other agencies and consultants.
- 4) Assess all future inputs required for project planning, design, supervision of construction and monitoring in subsequent phases of project implementation.
- 5) Take steps to ensure that adequate financing is available to support the sector capital development requirements.
- 6) Assist in the negotiations for external grants and loans.
- 7) Recommend policy and policy revisions to govern sector and project management activities.

(2) An Assistant Provincial Water Supply and Sanitation Coordinator will likewise be appointed to assist the PWSC in discharge of his/her duties and responsibilities of the PWSU.

(3) The Community Development and Training Specialist (CDTS) will be particularly responsible for implementing the community development and involvement aspects of the project. His/her task will include frequent contact with the municipal liaison staff and barangays to ensure that all project activities are demand-driven and sustainable. The CDTS will report to the PWSC. Specific duties include:

- 1) Identify initial areas and develop implementation arrangements for launching the project in the various municipalities.
- 2) Conduct regular dialogue and disseminate information among local leaders on water, sanitation and health issues.

- 3) Assist municipalities in overseeing the organization (or accreditation) of associations which will be responsible for water supply and sanitation facilities.
 - 4) Coordinate the health and hygiene education program province-wide.
 - 5) Review past training programs for water supply and sanitation, hygiene and sanitation education, and community organization and development, including any manuals or other training materials used.
 - 6) Guide municipal liaison staff in developing/adapting a community training strategy and methodologies based on the principles of participation, adult education, experiential learning and task specific activities, including the review and development of training materials.
 - 7) Prepare the overall provincial training plan enhancing management skills, institutional strengthening, improving technical skills, and community promotion, awareness and development. This should include: training methodologies; types and numbers of training events for staff and communities; training of trainers; training packages, manuals and audio visuals; management aspects of training program; and staff requirements and cost estimates for all categories of training including equipment and materials.
 - 8) Assist municipal staff in identifying and selecting target communities and sites based on agreed upon criteria; develop methodologies and coordinate preliminary village surveys and gender analysis.
 - 9) Assist in coordinating activities of the municipal liaison.
- (4) The Water Supply and Sanitation Engineer (WSSE) will be responsible for all the technical aspects of the project including feasibility studies, design, construction, operation and maintenance. The WSSE will report to the PWSC. Specific duties include:
- 1) Review the existing technical and environmental situation relating to water supply and sanitation facilities and assess the needs for new facilities and rehabilitation.
 - 2) Prepare and update criteria and process for the selection of water supply and sanitation facilities appropriate to the conditions prevailing in the project areas focusing on systems that can be operated and maintained by the community.
 - 3) Review design standards for water supply and for on-site sanitation (human excreta disposal) facilities for individual households, communal and school latrines.
 - 4) Establish appropriate design standards and technical specifications for water and sanitation materials and equipment applicable to systems proposed in the project. Establish quality control mechanisms for the procurement of materials and equipment as appropriate.

- 5) Prepare standard contract documents, specifications and cost estimates for civil works and procurement.
 - 6) Ensure proper construction supervision and monitoring in coordination with the municipal liaison. Ensure timely transport of LGU-provided materials to project sites.
 - 7) Provide for adequate maintenance of LGUs equipment and tools for water and sanitation facilities, including drilling rigs and vehicles.
 - 8) Supervise major repair or rehabilitation work beyond the capacity of communities to undertake.
 - 9) Implement, in coordination with the PHO, the water quality surveillance system. Assist the PHO in enforcing sanctions or remedial measures in controlling drinking water quality.
- (5) The Monitoring Specialist (MS) will be responsible for ensuring that the status of sector projects and outputs are properly reported and fed back to management. His/her task will include frequent contact with the municipalities to ensure that all project activities are demand-driven and sustainable. The MS will report to the PWSC and liaise closely with the PPDO who has the responsibility for monitoring all development activities and needs in the province. Specific duties include:
- 1) Draft all project reports and documents including the quarterly and annual Sector Report.
 - 2) Maintain the Registry of associations responsible for water and sanitation in their respective communities.
 - 3) Coordinate and develop indicators for monitoring and evaluating the achievement of project objectives.
 - 4) Monitor actual costs for typical water supply and sanitation systems.
- (6) At the municipal level, a Municipal Sector Liaison (MSL) will be appointed by the respective mayors. Staff appointed may be the municipal development coordinator, the municipal engineer, the municipal health officer or any other qualified staff selected by the mayor. The role of the MSL will be very critical at all stages of sector and project management. The MSL should ensure that the activities guided by PWSU are implemented at the barangay level, particularly information dissemination about funding opportunities. The MSL receives all requests for water and sanitation facilities including the commitment of the barangays to provide counterpart funds or labor for the projects. The MSL also programs the municipal funds (from municipal IRA allocation or other sources) to provide counterpart support or to fully finance the projects.

Supported by the PWSU, the MSL ensures that a viable organization is set up or appointed to handle the operation, maintenance and fee collection for the water system. The MSL also reviews the detailed project plan and design. During implementation, the MSL monitors the construction and drilling activities. The activities of the MSL will be closely coordinated and reported to the PWSU. If warranted, the mayor should establish a municipal water and sanitation office in the long-term future to handle all the above functions when the level of activities shall have become substantial.

- (7) At the barangay level, the Barangay Council (BC), through its Committee on Health, and the Rural Health Unit (RHU) plays a major role in concretizing the community aspiration for improved water and sanitation services.

The BC is the entry point for all development activities in the community. Particularly, it will play an important role in preparatory stage before setting up the association (or appointment of the responsible group). The BC prepares the request for assistance and assembles available local resources (funds, manpower, materials) to serve as initial community counterpart to demonstrate barangay commitment.

The RHUs and their network of barangay health workers (volunteers), on the other hand, have established an effective primary health care delivery system in the province. The system will continue to provide, among others, health and hygiene education services focusing on the interdependence of safe water supplies and sanitary toilet facilities to achieve overall health and environmental benefits. The RHUs will be the principal data collectors to monitor the conditions in access and coverage of water supply and sanitation services.

- (8) At the national level, DPWH, DOH and DILG will continue to provide technical assistance to LGUs per NEDA Resolution No. 4, either directly or through their local field offices. In addition, mandated government agencies, such as LWUA, will continue to provide technical and managerial services and loans to duly-organized water districts and RWSAs. Through the DOF and DBM, the IRA allocations will continue to be provided, from which a portion can be allocated for sector projects. Since this IRA allocation for water and sanitation projects will likely be very limited, the LGU will have to coordinate with appropriate national agencies to gain access to external funds. Regulations, promulgated and enforced by national regulatory bodies, like the NWRB, will have to be complied with by the LGU.

9.4 Project Management Arrangements

In implementing specific WATSAN projects, there are several approaches / strategies which are recommended that will increase the likelihood for success and sustainability over the long term.

These general approaches/strategies should be treated as minimum project requirements, which can be enhanced or improved upon to further ensure the project's success and sustainability.

9.4.1 Project Approach/Strategy

(1) Capacity Enhancement

- a) Creation of support structure at the provincial and municipal levels (PWSU and MSLT, respectively) with clearly delineated roles and responsibilities of each member as well as the joint tasks to be undertaken by them.
- b) Improving information dissemination to and consultation with local officials at the provincial, municipal, and barangay levels to secure full support and cooperation in the execution of the project.
- c) Tapping NGO intermediaries to assist in the capability building and community management programs for the LGUs and project beneficiaries.
- d) Capability building shall be undertaken at various levels, from the national to the beneficiary levels. A Consultant shall develop the capacity of the WSS-PMO and NGOs, who in turn shall be responsible to develop the capacity of LGUs (PWSU, MSLT) and CO/NGOs). Finally, LGUs shall develop the capacity of the project beneficiaries who are to operate and manage the projects.
- e) Consultancy services shall be availed of to assist the executing and implementing agencies' capabilities in the successful implementation of the project.

(2) Service Level Determination

- a) The appropriate service level for a geographical area shall be determined in the following manner:
 - at the initial stage of the project, the people will already be consulted regarding their needs, desires, and willingness to pay;
 - before construction begins, all parties will sign an agreement acknowledging their respective roles and responsibilities;
- b) Communities with no existing water system will be encouraged to adopt level II systems instead of Level I systems, subject to a validation of the technical

feasibility and the prospective users' willingness to participate in the construction, operation and maintenance of the system

- c) Existing Level III systems will be encouraged to expand their coverage to the fringe areas, subject to the results of studies on prospective demand, technical feasibility, and financial feasibility.
- d) Existing Level III systems that are in close geographical proximity to other existing Level III systems will be encouraged to merge in order to achieve economies of scale.

(3) Community Participation

- a) The selection criteria for the priority sites will be the community demand for the level of service. Demand assessment shall be made through participatory beneficiary assessment prior to construction of facilities in the barangays.
- b) Tapping existing people's/community-based organizations as operating body of the project. Merger or consolidation with the existing water association in the barangay shall be considered before forming a new one.
- c) Community participation shall be incorporated in all phases of the project -- from planning to evaluation. Community participation shall be undertaken through consultation and interactive participation with the community members.
- d) A greater participation of women shall be required in the planning, implementation, management, and monitoring of WATSAN projects.
- e) Integration of water supply, sanitation and hygiene education and provision of information, education and communication materials to the community members.

(4) Cost Recovery

- a) LGUs shall adopt commercial principles in the operation and management of water utilities in order to provide cost effective and reliable services to consumers.
- b) Community equity contributions and LGU counterpart shall be required and will serve as an indication of willingness and commitment to participate in the project.
- c) Cost recovery through regular water charge collection from the end-users shall be a requisite of the project.
- d) Funds collected from the end-users shall be utilized for operation and maintenance and future rehabilitation and reconstruction.

- c) Merging of small Level III systems into one operating body may be studied to save on O&M cost and maximize the utilization of limited manpower resources.

(5) Feedback Mechanism

- a) A participatory monitoring and evaluation system shall be installed in partnership between the LGUs and beneficiaries.
- b) Monitoring and evaluation shall start during the project implementation. The system must have clear objectives and the right indicators - sustainability, effective use, and replicability.

The success of water and sanitation projects in most cases depends on the strength of the institutional arrangement and mechanism that was adopted. Therefore, it is imperative that each institution as well as those personnel involved in the project should have a clear grasp of their respective responsibilities in the various stages of project implementation. Figure 9.4.1 and Figure 9.4.2 in the Supporting Report shows the project implementation arrangement and procedure for Level I water supply and sanitation from the national to barangay levels. These have been designed to encourage active participation of implementers and beneficiaries in undertaking the project.

9.4.2 Project Implementation Arrangement

(1) Level I

- 1) Project Selection: Self-selection and local initiative should be the basis. All barangays should be well-informed about sector opportunities and policies. The barangays should take the first step by assessing their needs, deciding that they want to improve their water and sanitation above all other needs and expressing their aspiration. The initial tasks of LGUs will be social marketing and information dissemination. The barangay should also decide desired service level/s, with a full understanding of the cost recovery aspects and other responsibilities.
- 2) Organization of associations: More flexibility is needed in order to tap local community resources. The issue of the necessity of forming BWSAs has been raised on several occasions. The proliferation of single-purpose associations for every government-sponsored project tends to divide barangay resources and complicate barangay structures. Many socio-civic groups have in fact "adopted" facilities and are looking after their maintenance voluntarily. Actual success rate seems to be higher in areas where water supply is extremely difficult regardless of whether there is monitoring or not.

The basic principle is that the community agrees that a particular group at the local level will be responsible. Existing local groups with other socio-civic objectives, an active track record and which are ready, willing and able to take on the BWSA functions may be tasked with the responsibility for the facilities. LGUs will assess the situation and, if justified, approve alternative non-BWSA arrangements. BWSA formation, of course, remains an option. An "institutional accreditation" system can be organized. If the association fails to live up to its responsibilities, it can lose its accreditation to another group.

The association can decide how to organize itself internally in coordination with the municipal sector liaison. The important condition is that all functions have to be attended to. Thus, an association may subdivide itself by "puroks" or it may choose to operate as one institution.

- 3) Technology and Technical Design Standards: The former Rural Waterworks Development Corporation (whose functions were absorbed by LWUA) and the DPWH have developed a simplified procedure for conducting the initial data gathering. The formats, which are appended (Table 9.4.1 Supporting Report), may be adopted and used by the LGUs. If necessary, these forms can be revised to suit the specific needs of the barangay or municipality.
- 4) Bidding of works and procurement of services and materials should follow provision of PD 1594 and other appropriate government policies and practices. Where possible, major capital procurement shall be sourced within the province.
- 5) Construction and Drilling: Drillers and civil work contractors will be needed for any major rural water supply and sanitation undertaking. Construction inspection shall be done with the municipal sector liaison.
- 6) Right of Way Acquisition: Deed of Donation (or written permits to grant use of land) for proposed facility sites should be executed in favor of the municipal government/barangay prior to project approval.
- 7) Major rehabilitation work, beyond the capacity of the associations, shall be referred to the municipality for action. Clear definition of "major rehabilitation work" is needed. All costs incident to the rehabilitation shall be to the account of the

association O&M reserve fund. The municipality supported by PWSU will assist, if needed, the association in securing soft loans, if the reserve funds are inadequate.

- 8) Operation & Maintenance will generally be the responsibility of the association. To support the caretakers, a franchising system for major O&M activities may be instituted by the municipality (through a private firm, a major Water District in the area or any other competent group). Mechanics and plumbers can organize well-equipped "mobile service centers" which visits all the facilities monthly to check-up facilities and provide technical advice on behalf of the LGUs.

With standardization, local hardware stores will find it more profitable to stock up on needed spare parts. The LGUs should not maintain spare parts, although it is expected to maintain a ready stock of fast-moving spares.

- 9) Water Rate Setting: Fees and rates shall be established and approved by the community prior to construction. The fees shall be sufficient to cover all monthly operation, maintenance and administration costs, as well as to establish a reserve fund.
- 10) Fees Collection and Funds Management: The association shall collect monthly fees. All funds of the association shall be deposited in a bank to be selected by the association.

Project implementation for Level I water supply and sanitation, 9.4.2, Supporting Report refers to the phased approach to the implementation of Level I.

(2) Level II

- 1) Project Selection: Guidelines similar to that of Level I project selection shall be followed, i.e., self-selection and local initiative. Two or more barangays (or puroks) may agree to have a joint water and sanitation project.
- 2) Organization: The RWSA model may be followed by the participating communities. Again, flexibility will be followed and alternative models for managing the system may be considered.
- 3) Technology and Technical Design Standards: Technical standards have been in use by LWUA for RWSAs and by DPWH for Level II systems. (refer to Table 9.4.2 with

annexes, Supporting Report). As these are considered as national standards, they will be adopted by the LGUs.

- 4) Bidding of works and procurement of services and materials should follow provision of PD 1594 and all other applicable national and local legislation on bidding and award of contracts using public funds. LWUA uses standard formats and procedures for this process, which may be adopted by the LGUs.
- 5) Construction would usually be done by a contractor: Inspection would be undertaken by the RWSA; by the cooperative or the private developer; or by the LGUs depending on the institutional arrangement adopted.
- 6) Right of Way Acquisition. The association shall negotiate for the purchase of land on which facilities will be constructed. Should negotiations fail, the government may exercise the power of eminent domain to secure needed land.
- 7) Operation & maintenance and rehabilitation will be the responsibility of the association. It shall ensure that adequate tools and spare parts are available. It shall employ needed staff and caretakers.
- 8) Water Rate Setting: All fees shall be subject to public hearing and approval by the appropriate regulatory authority.
- 9) Fees Collection and Funds Management: Same policies for Level I shall apply. However, fee computation shall include provision for debt service and possibly a higher reserve requirement.

(3) Level III

- 1) Project Selection: Most Level III systems are to be initiated by the municipal governments. In principle, all communities, including rural areas, may request Level III services, provided that they are willing and able to take on the financial and managerial obligations for higher service levels. The point is that service level selection is community decisions.
- 2) Organization: There are several viable Level III models, which may be adopted: the Water District Concept; a LGUs-managed system; a cooperative-run system; or a privately-owned and managed system (refer to 5.2 Data Report). The LWUA-water

district concept was briefly described in the preceding chapters. For detailed information, the LGUs should contact and coordinate with LWUA. The second option for the LGUs is to maintain operational control over the utility. Current experiences, however, revealed many difficulties because of numerous government controls and restrictions. The private sector may be a viable option using the BOT mechanism or even as a longer term investment for private entrepreneurs for larger systems.

- 3) **Technology and Technical Design Specifications:** Regardless of the institutional model adopted, the technical design standards to be enforced should be uniform. Technical standards used by the water districts and LWUA will be adopted and enforced by the LGUs.
- 4) **Bidding of works and procurement of services and materials** shall follow the provision of PD 1594 and all other applicable national and local legislation on bidding and award of contracts using public funds. LWUA uses standard formats and procedures for this process, which may be adopted by the LGUs.
- 5) **Construction** would usually be done by a contractor. Inspection would be undertaken by the water district; by the cooperative or the private developer; or by the LGUs depending on the institutional arrangement adopted.
- 6) **Right of Way Acquisition:** The waterworks will have to negotiate for the purchase of land on which facilities will be constructed. Should negotiations fail, the government may exercise the power of eminent domain to secure needed lands.
- 7) **Operation & maintenance and rehabilitation** will be the responsibility of the waterworks. It shall ensure that adequate tools and spare parts are available. It shall employ needed staff and caretakers.
- 8) **Water Rate Setting:** All rates are subject to public hearings and approval by the appropriate regulatory authority.
- 9) The waterworks shall establish a formal billing and collection system. In addition, business practice systems shall be adopted. The LWUA has established a comprehensive commercial practice system, which may be adopted by the organization.

9.5 Community Development

9.5.1 General

The success and sustainability of water and sanitation projects largely depend on the active participation of the users and unwavering commitment of the beneficiary community. Past WATSAN projects have failed because government planners and implementors gave only cursory attention to the felt needs and demands of the beneficiary communities. Thus, the lack of involvement and participation of the people led to the steady deterioration and/or non-operation of the WATSAN facilities.

This section presents the recommendations on how to harness the participation of the individual members of the beneficiary community in sector projects in order to ensure that the gains derived from WATSAN projects are sustained long after these have been constructed. In proffering these recommendations, it is necessary to take on the side of the project planners/ implementors from the central government, the provincial and local government units, down to the barangay level so as to complete the cycle where both the supply side and demand side of the planning approach to this sector study are linked.

For the WATSAN sector, greater involvement of both the LGUs and the people shall be promoted not only in service delivery and implementation but also in project prioritization, identification and in the decision-making process. Their contribution to development efforts shall be in terms of articulating their demands to guide concerned government and private institutions and of initiating community-based activities. In this way, they shall not just be passive recipients of projects and services but shall be harnessed as active partners in the identification and solution of community problems.

9.5.2 CD Structure and Linkage for Sector Projects

Participatory community development is a process that enables the members of the community to become action-oriented and self-reliant. This process is not easy to start, much less complete, because it takes time and resources. It also requires the genuine involvement, participation and collaboration of all the parties involved in sector development – from the national agencies, to the provincial governments, down to the municipal and barangay levels. It is only through having set the proper structures and linkages among these parties that participatory CD can take off as an important part of the entire sector.

(1) National

The Department of the Interior and Local Government (DILG), through its Water Supply and Sanitation Program Management Office (WSS-PMO), shall retain the role as the central government agency that will promote the community development component of water supply and sanitation projects with its regional offices providing close coordination with the LGUs in this fundamental sector activity.

To attain this, DILG shall develop the capacity of the provincial and municipal sector teams in undertaking (1) community development/management programs, particularly in the areas of community mobilizing and organizing and in capacity building; and (2) information, education and communication management programs. It should also be able to identify national NGOs that can assist its capability building and community management programs for the LGUs and project beneficiaries.

The Local Water Utilities Administration shall continue to provide assistance to the LGUs in the formation of LGU-WS into water districts, particularly in community participation on (1) the decision on whether or not to form a water district in the locality; and (2) the nomination of representatives to the five sectors that will compose the WD Board of Directors.

The LWUA shall also continue to provide regular CD assistance to the water districts particularly in consultation with the community on new projects, (called project hearings), the information/approval of new loans, and the approval for adjustments or increases in water rates (called water rate hearings).

(2) Provincial

Since WATSAN projects would be on-going in the long term, it is recommended that a CD Unit should be established within the proposed "Provincial Water Supply and Sanitation Office," discharging functions as important as the technical, financial, administrative units. The CD Unit will serve as the coordinating arm for all CD activities for WATSAN projects in the Province. It will mainly be responsible for establishing an over-all Comprehensive CD Management Plan for the province and implement this together with the LGUs. It will also be equally responsible for the conceptualization or the over-all Comprehensive IEC Plan for province and execute this together with the LGUs. The CD Unit shall also closely coordinate with NGOs/CBOs/POs in the province to augment their manpower and experience in doing community organizing and mobilization work. It will also

obtain/furnish the inputs articulated by the people in all the phases of the project – that is, from project planning, implementation, operation and maintenance, monitoring to evaluation – thus contributing significantly in extending the life of the facilities as well as in promoting the health and productivity of the community as a whole.

Appointment of a Provincial CD Specialist

The province shall, within one year, provide for a regular plantilla position for at least one CD Specialist who will be appointed to take charge of the CD Unit. The CD Specialist will plan, implement and/or coordinate CD management programs, IEC programs, and the capacity building activities for sector projects. He/she shall also be responsible for the assisting in the training of municipal CD specialists and barangay CD coordinators. Within two years, or when the specific projects under this sector materialize, another CD Specialist position shall be opened, if resources permit. If not, said NGOs/CBOs/POs can be tapped for the purpose (refer to the Supporting Report for the Responsibilities and Qualifications of a CD Specialist).

(3) Municipal

The municipality is the next link in the delivery of services to the people. There may be a need to establish a more permanent office/unit, such as a “Municipal WATSAN Office” in the long term; but for the medium term, the Municipal Sector Liaison Team (MSLT) concept will do. Among this team’s multi-functions are to undertake and/or coordinate all CD and IEC work for the sector. It shall also collaborate with the water district on their CD-IEC programs, when and where practicable. It shall also coordinate with the NGOs/CBOs/POs that find their presence in the municipality. It will obtain/furnish the inputs articulated by the people in all the phases of the project – that is, from project planning, implementation, operation and maintenance, monitoring to evaluation to be utilized by those concerned.

Assignment of a Municipal CD Specialist

Within the medium term, the municipal government shall endeavor to assign a CD Specialist to the MSLT who shall undertake and/or coordinate actual CD and IEC work, together with the CD Specialist of the province. The CD Specialist shall closely coordinate CD work with NGOs/CBOs/POs and the private sector. He/she will also be responsible for assisting the Province in capacity building/training programs for barangay CD coordinators.

(4) Barangay

Not all barangays have established water supply and sanitation committees. It is recommended, therefore, that each BDC should establish a WATSAN Committee that will undertake and/or coordinate all WATSAN projects in the barangay. The committee, to be headed by the BDC's infrastructure committee chairman, shall have four members, preferably coming from the health, education, socio-civic and NGO sectors of the barangay. They shall be responsible for coordinating all the activities/phases in the project, including community development, such as but not limited to barangay meetings, surveys, mapping, project identification and planning, formation of a suitable WATSAN association/organization and other decisions regarding the acceptance of the water facility and the barangay counterpart in the construction of WATSAN facilities.

Designation of Barangay CD Coordinator

The barangay council should designate one person, preferably a member of the BDC or the WATSAN committee, who can be trained on CD work, particularly community organizing. Once trained, he/she will be the permanent CD coordinator of all CD activities related to WATSAN projects. The Barangay Health Worker can be an ideal candidate since he/she is already familiar with the work and the whole community.

9.5.3 Training on CD

The DILG WSS-PMO should immediately develop a capacity-building program on CD and IEC for LGUs, utilizing existing training institutions such as the Local Government Academy (LGA). While the importance of CD is acknowledged by the LGUs, there is an urgent need to raise the general level of CD awareness of the officials who would be involved in making decisions for the sector. For those who have a direct hand in the planning and implementation of sector projects, there is also a pressing need to upgrade their knowledge on CD-CO processes and approaches because methods being currently applied have been found to be very limited in scope, coverage and effectivity.

In this connection, it is recommended that the following measures be done in the medium term: (1) conduct a training needs assessment to determine the appropriate type of training program suited and relevant to the proposed participants' level of attainment; (2) upgrade the knowledge of the PPDO and PHO staffs, the MPDO and the MHO staffs, as well as the members of the BDC's WATSAN committees of improved CD frameworks available as well as CO approaches developed from the experience gained from other WATSAN projects; and, (3) develop other

training programs to enhance CD and IEC as shown from the result of the training needs assessment.

Suggested seminar workshops are the following: (1) Trainors' Training on CD – duration, 4-5 days; to be conducted by the DILG WSS-PMO, with the proposed participants as select PPDO/PHO staff and CD Specialists of the municipalities who belong to the priority list for the medium-term; (2) Seminar Workshop on Community Organizing – duration, 4-5 days; to be conducted by the Province with the assistance of the DILG WSS-PMO, the proposed participants being the barangay CD coordinators; and (3) Seminar Workshop on IEC – duration, 4-5 days; to be conducted by the DILG WSS-PMO with the assistance of the Philippine Information Agency (PIA), the proposed participants being CD Specialists of the LGUs.

These training programs should be conducted on a regular basis until the all the municipalities/barangays are covered. Each of the parties/participants to the training will shoulder their own costs, such that the DILG will be financially responsible for its trainors, the instructional materials, and the training venue. The LGUs, on the other hand, will pay for their own participants' expenses such as transportation and room and board. Eventually, when the Province has been fully trained and equipped to be the trainor, it shall conduct said CD/IEC training programs and will charge the LGUs and the barangays their proportionate share in the training costs.

9.5.4 Utilization of NGOs

On the national level, the DILG should screen and select national NGOs, with local networks or offices, that specialize in community management programs and tap these to assist the LGUs in organizing project beneficiaries to be more active partners in sector development.

The province, through the proposed Provincial Water Supply and Sanitation Office, must harness the participation of the private sector in community organizing and training of project beneficiaries. Initially, the provincial CD Specialist should make an updated inventory of all NGOs, CBOs and POs that do work in the province. It must identify and categorize these organizations according to the following: (1) expertise in community organizing and training; (2) sector-related experience in water supply, sanitation, solid waste; (3) expertise in communications planning, information dissemination and education.