

## 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, 90 untapped springs in 15 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 190,900 persons in the province will be served by additional water supply services, of which 53,800 persons or 28% of the total will be urban population and 137,100 persons or 72% will be rural population.

For Phase II period, a total of 416,600 persons, of which 301,300 persons or 72% in urban area and 115,300 persons or 28% 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 132,400 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		
Baungon	Urban	5,827	210	2,702	4,662	718	1,845	718	10,542	10,015	10,015	8,265									
	Rural	22,213	2,961	15,920	18,881	1,593	3,438	1,593	18,983	18,983	15,920	2,961	15,920	18,983							
	Total	28,040	3,171	18,622	23,543	3,311	5,283	3,311	29,525	28,996	28,996	11,231	28,996	18,983							
Cabanglasan	Urban	4,556	374	3,990	2,881	374	1,638	374	11,966	11,966	11,966	10,994									
	Rural	30,127	5,514	20,094	25,608	1,638	31,789	1,638	43,755	43,755	24,050	5,514	24,050	29,564							
	Total	34,683	6,288	24,088	28,490	3,312	33,427	3,312	55,710	55,710	38,016	7,032	38,016	49,128							
Danao	Urban	13,228	1,751	2,401	3,487	911	2,401	911	4,886	4,886	11,666	4,886	11,666	12,981							
	Rural	17,587	911	1,490	12,330	1,490	18,544	1,490	18,544	18,544	11,666	1,490	11,666	17,338							
	Total	30,815	2,662	3,891	15,817	2,901	21,988	2,901	23,430	23,430	23,232	3,376	23,232	35,319							
Dangayagan	Urban	14,852	1,023	1,359	14,828	156	547	156	6,039	5,737	747	13,428	14,175								
	Rural	20,084	9,405	9,722	21,099	7,222	29,666	7,222	31,227	29,666	13,428	747	13,428	14,175							
	Total	34,936	10,428	11,081	35,927	14,778	35,494	14,778	37,266	35,494	27,103	2,491	27,103	28,350							
Don Carlos	Urban	6,800	2,867	2,162	5,029	538	9,854	538	12,594	11,964	728	11,964	9,097								
	Rural	24,236	728	7,204	12,669	5,600	25,272	5,600	25,272	22,672	2,600	15,571	23,503								
	Total	31,036	3,595	9,366	17,698	11,200	30,544	11,200	37,866	37,636	28,272	7,204	35,467	32,597							
Impasugong	Urban	5,323	1,402	1,236	4,288	1,402	5,690	1,402	5,323	5,057	2,612	20,916	23,528								
	Rural	30,006	1,402	4,232	19,605	1,402	25,239	1,402	25,239	23,528	2,612	20,916	23,528								
	Total	35,332	2,804	5,468	23,893	2,804	30,869	2,804	30,869	28,556	5,224	21,832	27,056								
Kadugayan	Urban	19,922	3,953	540	11,445	2,797	14,870	2,797	21,444	20,372	1,072	16,419									
	Rural	12,760	193	897	9,756	1,931	14,870	1,931	14,870	13,829	1,041	12,788									
	Total	32,682	4,146	1,437	21,201	4,728	29,740	4,728	29,740	34,201	16,419	16,419									
Kaliangan	Urban	4,746	3,745	52	3,797	973	4,746	4,746	4,746	4,509	236	764									
	Rural	29,806	369	4,096	25,386	4,096	31,346	4,096	31,346	29,152	2,194	3,766									
	Total	34,552	4,114	4,148	29,782	8,192	35,092	8,192	35,092	33,561	764	3,766									
Kiatiao	Urban	11,260	2,199	1,008	5,801	2,199	6,946	2,199	11,260	10,697	563	8,498									
	Rural	34,389	2,585	2,646	29,231	2,585	34,389	2,585	34,389	33,124	1,265	3,893									
	Total	45,649	4,784	3,654	35,032	4,784	45,649	4,784	45,649	43,813	1,835	3,893									
Lantapan	Urban	16,551	1,885	197	11,159	870	14,664	870	17,133	16,276	857	14,391									
	Rural	26,485	667	5,325	16,520	2,512	22,512	2,512	22,512	20,763	1,749	10,119									
	Total	43,036	2,552	16,479	31,179	3,382	37,176	3,382	39,645	37,039	2,606	24,510									

Table 8.5.1 Population to be Served by Target Year (Water Supply) (Cont'd.)

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		
Libona	Urban	2,529	1,688	335	2,023	755	2,529	2,403	715	2,403	715	2,403	715	2,403	715	2,403	715	2,403	715		
	Rural	35,319	4,584	5,145	18,592	28,321	8,944	3,944	8,944	3,944	8,944	3,944	8,944	3,944	26,740	5,145	26,740	5,145	26,740		
	Total	35,848	6,272	5,145	30,344	753	8,944	9,697	41,743	6,987	5,145	26,740	38,872	715	38,872	715	38,872	715	38,872		
Malaybalay (Capital)	Urban	35,268	28,214	2,953	28,214	2,953	42,973	40,824	2,953	42,973	40,824	2,953	42,973	40,824	119,895	8,058	119,895	8,058	119,895		
	Rural	112,111	4,072	8,058	95,294	2,953	43,641	43,641	141,962	4,072	8,058	119,895	132,025	36,731	119,895	8,058	119,895	8,058	119,895		
	Total	147,379	32,286	8,058	123,408	2,953	43,641	46,594	134,955	44,896	8,058	119,895	172,849	49,341	119,895	8,058	119,895	8,058	119,895		
Maitbog	Urban	3,029	151	112	2,423	151	3,029	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455	3,455		
	Rural	16,064	6,848	6,806	13,654	5,330	16,763	16,763	5,330	16,763	5,330	16,763	5,330	16,763	8,742	6,848	8,742	6,848	8,742		
	Total	19,093	7,399	6,918	16,077	151	5,330	5,481	20,400	3,455	6,848	8,742	19,045	3,304	19,045	3,304	19,045	3,304	19,045		
Manolo Fortich	Urban	6,173	4,281	701	4,982		14,336	13,619		14,336	13,619		14,336	13,619	9,338		9,338		9,338		
	Rural	72,215	19,635	4,926	36,822	61,383	338	78,939	19,635	4,926	48,852	73,413	9,338	12,030	48,852	73,413	9,338	12,030	48,852		
	Total	78,388	23,916	4,926	37,523	66,365	338	83,275	33,254	4,926	48,852	74,756	40,583	21,368	48,852	74,756	40,583	21,368	40,583		
Maranao	Urban	61,404	34,183	3,557	49,123	28,304	28,304	28,304	28,304	28,304	28,304	28,304	28,304	28,304	74,766	7,254	74,766	7,254	74,766		
	Rural	14,957	558	7,254	4,901	12,713	2,124	6,438	2,124	6,438	2,124	6,438	2,124	15,020	558	15,020	558	15,020	558		
	Total	76,361	34,741	10,811	54,026	41,017	34,742	93,721	75,324	7,254	6,157	88,735	40,583	1,256	88,735	40,583	1,256	88,735	40,583		
Pangantucan	Urban	25,137	2,195	2,181	15,734	20,110	995	28,298	26,883		26,883	26,883	26,883	26,883	26,883	26,883	26,883	26,883	26,883		
	Rural	17,918	4,772	10,458	15,230	3,240	3,795	17,619	4,772	11,614	16,386	4,772	11,614	16,386	4,772	11,614	16,386	4,772	11,614		
	Total	43,055	6,967	12,649	30,964	23,350	21,314	45,917	26,883	4,772	11,614	21,314	21,314	21,314	21,314	21,314	21,314	21,314	21,314		
Quezon	Urban	15,341	7,639	5,930	13,569		60,406	1,889		1,909	54,592	58,290		13,634	1,909	54,592	58,290		13,634		
	Rural	64,901	1,889	1,909	60,522	71,959	2,297	82,799	23,162	1,909	54,592	79,663	13,634	1,909	54,592	79,663	13,634	1,909	54,592		
	Total	80,242	9,528	7,839	74,091	74,918	2,297	85,005	24,371	3,818	59,184	138,953	27,268	15,553	59,184	138,953	27,268	15,553	27,268		
San Fernando	Urban	16,024	2,297	3,60	10,162	12,819	2,297	16,864	16,021		16,021	16,021	16,021	16,021	16,021	16,021	16,021	16,021	16,021		
	Rural	28,711	2,297	5,792	18,612	24,404	5,360	31,602	5,360	5,792	23,598	29,390	4,986	4,986	23,598	29,390	4,986	4,986	4,986		
	Total	44,735	4,594	9,392	28,774	37,223	7,720	48,466	16,021	11,584	43,411	58,780	21,007	21,007	43,411	58,780	21,007	21,007	21,007		
Sumilao	Urban	12,988	3,881	3,224	3,559	10,604		18,398	17,478		17,478	17,478	17,478	17,478	17,478	17,478	17,478	17,478	17,478		
	Rural	6,818	4,874	921	5,795	3,306	3,306	6,555	3,306	4,874	1,222	6,096	301	301	4,874	1,222	6,096	301	301		
	Total	19,806	8,755	4,145	9,354	13,910	6,612	24,953	17,478	8,182	12,298	23,574	13,597	13,597	12,298	12,298	12,298	12,298	12,298		
Talakog	Urban	6,440	4,900	252	5,152	100		6,440	6,118		6,118	6,118	6,118	6,118	6,118	6,118	6,118	6,118	6,118		
	Rural	40,298	2,067	32,186	34,253	1,617	1,617	48,533	4,150	2,067	42,901	44,968	10,715	10,715	42,901	44,968	10,715	10,715	10,715		
	Total	46,738	4,990	32,518	39,405	100	1,617	54,795	6,118	2,067	42,901	51,086	12,18	12,18	42,901	51,086	12,18	12,18	12,18		
Valencia	Urban	41,208	20,552	13,883	34,435		92,383	87,954		87,954	87,954	87,954	87,954	87,954	87,954	87,954	87,954	87,954	87,954		
	Rural	110,301	11,053	5,984	78,256	99,293	85,520	11,053	99,293	5,984	78,256	95,293	67,402	67,402	78,256	95,293	67,402	67,402	67,402		
	Total	151,509	31,605	19,867	112,691	198,586	178,103	99,007	188,247	11,637	86,250	192,546	154,856	134,804	188,247	192,546	154,856	134,804	134,804		
Provincial Total	Urban	355,977	139,493	23,488	108,881	271,864	53,763	464,012	440,812		440,812	440,812	440,812	440,812	440,812	440,812	440,812	440,812	440,812		
	Rural	784,878	45,251	92,328	534,327	671,906	39,139	97,946	137,085	83,792	45,251	92,328	649,608	787,187	92,328	649,608	787,187	115,281	115,281		
	Total	1,120,855	184,746	115,816	643,208	943,770	92,902	245,858	681,947	127,577	137,137	1,092,420	1,092,420	1,092,420	1,092,420	1,092,420	1,092,420	1,092,420	1,092,420		

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 169,000. Additional households to be served totaled to 72,400, of which 33% is urban households and 67% is rural households. While at the end of Phase II period, the number of served households are 305,700 with an additional households to be served at 136,600. 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.

The projected number of served students at the end of Phase I period is 148,600. The additional students to be served are 74,600. While at the end of Phase II period, the projected

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

Name of Municipality	Area	Total Households	Phase I Coverage (2003)						Phase II Coverage (2010)									
			No. of Served Households			Add'l. No. of Households to be Served			No. of Served Households			Add'l. No. of Households to be Served						
			Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total				
Baungon	Urban	1,079	351	552	100	1,003	179	100	279	2,636	1,292	1,191	100	2,583	941	639	1,580	
	Rural	4,183	1,032	1,634	471	3,137	1,634	471	2,105	4,746	1,032	2,911	471	4,414	1,277	1,277	2,277	
	Total	5,262	1,383	2,186	571	4,140	1,799	1,634	571	2,384	7,384	2,324	4,102	571	6,997	941	1,916	2,857
Cabanglasan	Urban	808	263	413	75	751	263	98	436	2,992	1,466	1,391	75	2,932	1,203	978	2,181	
	Rural	5,518	12	3,506	621	4,139	3,461	3,461	3,461	7,947	12	6,758	621	7,391	3,252	3,252	3,252	
	Total	6,326	275	3,919	696	4,890	263	3,559	75	3,897	10,939	1,478	8,149	696	10,323	1,203	4,230	5,433
Damulog	Urban	872	284	446	81	811	284	416	700	1,147	562	481	81	1,124	278	35	313	
	Rural	2,579	1,644	290	1,934	1,644	1,644	1,644	1,644	3,490	2,936	2,936	290	3,246	1,312	1,312	1,312	
	Total	3,451	2,844	2,090	371	2,745	2,844	2,060	2,344	4,637	562	3,437	371	4,370	278	1,347	1,625	
Dangaguan	Urban	965	314	493	90	897	290	90	380	1,510	740	650	90	1,480	426	157	583	
	Rural	2,715	1,731	305	2,036	1,06	1,06	199	305	3,811	3,239	305	3,544	1,508	1,508	1,508		
	Total	3,680	314	2,224	395	2,933	290	1,06	289	685	5,321	740	3,889	395	5,024	426	1,665	2,091
Don Carlos	Urban	5,033	1,638	2,575	468	4,681	1,118	696	1,814	7,807	3,826	3,577	468	7,651	2,188	782	2,970	
	Rural	6,483	486	3,647	729	4,862	486	2,647	3,133	9,094	1,503	6,225	729	8,457	1,017	2,578	3,595	
	Total	11,516	2,124	6,222	1,197	9,543	1,604	3,343	4,947	16,901	5,329	9,582	1,197	16,108	3,205	3,360	6,565	
Impasugong	Urban	1,093	356	538	102	1,016	321	143	464	3,149	1,543	1,441	102	3,086	1,187	883	2,070	
	Rural	4,328	325	2,434	487	3,246	325	924	366	1,615	728	461	487	5,876	403	2,227	2,650	
	Total	5,421	681	2,992	589	4,262	646	1,067	366	2,079	9,467	2,271	6,102	589	8,962	1,590	3,110	4,700
Kadighian	Urban	1,056	344	540	98	982	344	98	442	1,331	652	554	98	1,304	308	14	322	
	Rural	4,710	3,003	530	3,533	2,403	2,403	2,403	2,403	6,325	5,332	530	5,882	2,349	2,349	2,349		
	Total	5,766	344	3,543	628	4,515	344	2,403	98	2,845	7,656	652	5,906	628	7,186	308	2,363	2,671
Kaliangan	Urban	3,689	1,201	1,887	343	3,431	679	87	766	3,718	2,627	2,284	343	5,254	1,426	397	1,823	
	Rural	2,385	179	1,342	268	1,789	179	142	3	324	3,718	193	2,987	268	3,458	14	1,655	1,669
	Total	6,074	1,380	3,229	611	5,220	858	229	3	1,090	9,079	2,820	5,281	611	8,712	1,440	2,052	3,492
Kibawe	Urban	913	297	467	85	849	210	85	295	1,187	582	496	85	1,163	285	29	314	
	Rural	5,833	369	3,350	656	4,375	369	1,350	200	1,919	7,837	369	6,263	656	7,286	2,913	2,913	
	Total	6,746	666	3,817	741	5,224	369	1,560	285	2,214	9,024	951	6,759	741	8,451	285	2,942	3,227
Kitaotao	Urban	2,322	756	1,187	216	2,159	756	216	972	2,815	1,380	1,163	216	2,759	624	3,292	624	
	Rural	6,652	4,241	748	4,989	2,513	2,513	2,513	2,513	8,904	7,533	748	8,281	748	8,281	3,292	3,292	
	Total	8,974	756	5,428	964	7,148	756	2,513	216	3,485	11,719	1,380	8,696	964	11,046	624	3,292	3,916
Lantapan	Urban	2,935	956	1,501	273	2,730	806	273	1,079	4,283	2,099	1,825	273	4,197	1,143	324	1,467	
	Rural	4,807	361	2,703	541	3,605	361	1,703	541	2,605	6,672	667	6,950	541	8,158	306	4,247	
	Total	7,742	1,317	4,204	814	6,335	1,167	1,703	814	3,684	13,055	2,766	8,775	814	12,355	1,449	4,571	6,020

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

Name of Municipality	Area	Phase I Coverage (2003)										Phase II Coverage (2010)																			
		Total Households					No. of Served Households					Add'l. No. of Households to be Served					Total Households					No. of Served Households					Add'l. No. of Households to be Served				
		Total Households	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Total Households	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Total Households	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total			
Libona	Urban	474	154	243	44	441	79		44	123	632	310	263	44	619	156	22		178												
	Rural	6,025	28	4,215	749	4,992			577	577	9,804	1,824	6,545	749	9,118	1,796	2,330		4,126												
	Total	6,499	182	4,458	793	5,433	79		621	700	10,436	2,134	6,810	793	9,737	1,952	2,332		4,304												
Malaybalay (Capital)	Urban	6,471	2,106	3,310	602	6,018			2,292	602	2,894	2,292			4,072	26,633	2,302	33,007	2,538	15,125	17,663										
	Rural	20,458	1,534	11,508	2,302	15,344	344		8,447	10,338	35,491	4,072	26,633	2,302	33,007	2,538	15,125		17,663												
	Total	26,929	3,640	14,818	2,904	21,362	344		10,739	13,232	46,234	9,336	31,295	2,904	43,535	5,696	16,477		22,173												
Malibhog	Urban	592	151	345	55	551	141		55	196	909	446	390	55	891	295	45		340												
	Rural	3,014		1,922	339	2,261			398	398	4,191				3,898				1,637												
	Total	3,606	151	2,267	394	2,812	141		398	594	5,100	446	3,949	394	4,789	295	1,682		1,977												
Manolo Fortich	Urban	1,185	386	606	110	1,102			553	110	663	3,584	1,756	1,646	110	3,512	1,370	1,040	2,410												
	Rural	12,988	974	7,306	1,461	9,741			5,156	753	5,909	19,735	3,671	13,222	1,461	18,354	2,697	5,916	8,613												
	Total	14,173	1,360	7,912	1,571	10,843			5,709	863	6,572	23,319	5,427	14,868	1,571	21,866	4,067	6,956	11,023												
Maramag	Urban	11,520	3,750	5,893	1,071	10,714	2,542		1,634	4,176	19,675	9,641	8,370	1,071	19,282	5,891	2,677		8,368												
	Rural	2,817	211	1,585	317	2,113	106		321	106	333	3,753	558	2,617	317	3,492	347	1,032	1,379												
	Total	14,337	3,961	7,478	1,388	12,827	2,648		1,955	106	4,709	23,430	10,199	11,187	1,388	22,774	6,238	3,709	9,947												
Pangantucan	Urban	4,587	1,493	2,346	427	4,266	1,274		346	1,620	7,075	3,467	3,040	427	6,934	1,974	694		2,668												
	Rural	3,318		2,116	373	2,489			516	889	4,405				3,724				1,608												
	Total	7,905	1,493	4,462	800	6,755	1,274		862	2,509	11,480	3,467	6,764	800	11,031	1,974	2,302		4,276												
Quezon	Urban	2,895	942	1,481	269	2,692			600	269	869	5,598	2,743	2,474	269	5,486	1,801	993	2,794												
	Rural	12,131	353	7,997	1,473	9,823				1,473	1,473	15,102	1,889	10,683	1,473	14,045	1,536	2,636	4,222												
	Total	15,026	1,295	9,478	1,742	12,515			600	2,888	2,876	20,700	4,632	13,157	1,742	19,531	3,337	3,679	7,016												
San Fernando	Urban	3,099	1,009	1,585	288	2,882	982		1,606	1,606	7,901	2,066	1,778	288	7,348	3,350	3,330		3,330												
	Rural	8,456	1,009	5,000	891	6,900	982		1,606	2,888	12,117	2,066	8,523	891	11,480	1,057	3,523		4,580												
	Total	11,555	2,018	6,585	1,179	9,782	1,964		3,212	4,494	20,017	4,132	10,293	1,179	12,868	2,414	7,053		8,910												
Sumilao	Urban	2,332	739	1,193	217	2,169	699		771	1,470	4,600	2,254	2,037	217	4,508	1,495	844		2,339												
	Rural	1,237		789	139	928			471	139	610	1,639			1,385	139	596		596												
	Total	3,569	739	1,982	356	3,097	699		1,242	1,399	6,239	2,254	3,422	356	6,032	1,495	1,440		2,935												
Talakag	Urban	1,222	398	624	114	1,136	323			114	437	1,610	789		1,578	391	51		442												
	Rural	7,476		4,766	841	5,607			2,484	2,484	12,088				10,401	841	11,242		5,635												
	Total	8,698	398	5,390	955	6,743	323		2,484	114	2,921	13,698	789	11,076	955	12,820	391	5,686	6,077												
Valencia	Urban	7,790	2,536	3,984	725	7,245	2,216		438	2,654	23,146	11,342	10,616	725	22,683	8,806	6,632		15,438												
	Rural	20,890	1,567	11,751	2,350	15,668	1,466		45	1,511	21,380	3,977	13,556	2,350	19,883	2,410	1,805		4,215												
	Total	28,680	4,103	15,735	3,075	22,913	3,682		483	4,165	44,526	15,319	24,172	3,075	42,566	11,216	8,437		19,653												
Provincial Total	Urban	62,932	20,444	32,229	5,853	58,526	13,296		7,846	23,999	116,006	56,847	50,986	5,853	113,686	36,403	18,781		55,184												
	Rural	145,904	7,431	80,605	16,593	110,629	3,636		37,926	6,793	483,355	206,453	154,915	16,593	192,003	13,064	68,310		81,374												
	Total	208,836	27,875	118,834	22,446	169,155	16,932		45,772	9,650	72,354	332,459	205,901	22,446	305,689	49,467	87,091		136,558												

number of served students are 269,000 with an additional students to be served at 120,400.

Table 8.5.3 summarizes the number of public school students to be served by target year.

**Table 8.5.3 Additional Number of Public School Student to be Served by Target Year  
(School Toilets)**

Municipality/City	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
Baugon	5,478	3,287	2,407	6,153	5,538	2,251
Cabanglasan	8,160	4,896	1,376	10,295	9,266	4,370
Damulog	4,186	2,512	1,072	4,181	3,763	1,251
Dangcagan	4,199	2,519	599	4,711	4,240	1,721
Don Carlos	13,041	7,825	4,025	15,353	13,818	5,993
Impasugong	7,394	4,436	2,756	9,173	8,256	3,820
Kadingilan	6,542	3,925	1,045	7,069	6,362	2,437
Kalilangan	7,857	4,714	3,874	8,271	7,444	2,730
Kibawe	7,072	4,243		8,296	7,466	3,223
Kitaotao	9,817	5,890	1,650	10,674	9,607	3,717
Lantapan	9,383	5,630	1,430	12,056	10,850	5,220
Libona	8,698	5,219	4,019	10,690	9,621	4,402
Malaybalay	31,873	19,124	9,004	42,348	38,113	18,989
Malitbog	4,615	2,769	1,089	4,931	4,438	1,669
Manolo Fortich	18,132	10,879	1,599	22,845	20,561	9,682
Maramag	17,004	10,202	9,282	22,098	19,888	9,686
Pangantucan	9,636	5,782	4,822	10,882	9,794	4,012
Quezon	17,939	10,763	1,603	19,600	17,640	6,877
San Fernando	10,621	6,373	4,933	11,507	10,356	3,983
Sumilao	4,723	2,834	2,754	6,281	5,653	2,819
Talakag	10,246	6,148	2,548	12,718	11,446	5,298
Valencia	31,012	18,607	12,767	38,734	34,861	16,254
<b>Provincial Total</b>	<b>247,628</b>	<b>148,577</b>	<b>74,654</b>	<b>298,866</b>	<b>268,981</b>	<b>120,404</b>

### (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 89. The additional public utilities to be served are 3. Table 8.5.4 summarizes the additional number of public utilities to be served by municipality by target year.

### **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.

### **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 90% with reference to the present service coverage of 75% 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.

## **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).

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
Baungon	Public Market		2		2
	Bus/Jeepney Terminal		2		2
	Parks/Playground				
	Total		4		4
Cabanglasan	Public Market		1		1
	Bus/Jeepney Terminal		1		1
	Parks/Playground				
	Total		2		2
Damulog	Public Market		2		2
	Bus/Jeepney Terminal		2		2
	Parks/Playground				
	Total		4		4
Dangcagan	Public Market		2		2
	Bus/Jeepney Terminal		2		2
	Parks/Playground				
	Total		4		4
Don Carlos	Public Market		4		4
	Bus/Jeepney Terminal		4		4
	Parks/Playground				
	Total		8		8
Impasugong	Public Market				
	Bus/Jeepney Terminal				
	Parks/Playground				
	Total				
Kadingilan	Public Market		1		1
	Bus/Jeepney Terminal		1		1
	Parks/Playground				
	Total		2		2
Kalilangan	Public Market	1	2		2
	Bus/Jeepney Terminal		1		1
	Parks/Playground				
	Total	1	3		3
Kibawe	Public Market		4		4
	Bus/Jeepney Terminal		4		4
	Parks/Playground		1		1
	Total		9		9
Kitaotao	Public Market		2		2
	Bus/Jeepney Terminal				
	Parks/Playground				
	Total		2		2
Lantapan	Public Market	2	6		6
	Bus/Jeepney Terminal		4		4
	Parks/Playground				
	Total	2	10		10
Libona	Public Market				
	Bus/Jeepney Terminal				
	Parks/Playground				
	Total				

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

Part 2 of 2

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
Malaybalay (Capital)	Public Market		1		1
	Bus/Jeepney Terminal		2		2
	Parks/Playground		1		1
	Total		4		4
Malitbog	Public Market		1		1
	Bus/Jeepney Terminal		1		1
	Parks/Playground				
	Total		2		2
Manolo Fortich	Public Market		5		5
	Bus/Jeepney Terminal		1		1
	Parks/Playground		1		1
	Total		7		7
Maramag	Public Market		6		6
	Bus/Jeepney Terminal		2		2
	Parks/Playground				
	Total		8		8
Pangantucan	Public Market		1		1
	Bus/Jeepney Terminal		2		2
	Parks/Playground				
	Total		3		3
Quezon	Public Market		2		2
	Bus/Jeepney Terminal		2		2
	Parks/Playground				
	Total		4		4
San Fernando	Public Market				
	Bus/Jeepney Terminal				
	Parks/Playground				
	Total				
Sumilao	Public Market		1		1
	Bus/Jeepney Terminal				
	Parks/Playground				
	Total		1		1
Talakag	Public Market		1		1
	Bus/Jeepney Terminal		1		1
	Parks/Playground				
	Total		2		2
Valencia	Public Market		5		5
	Bus/Jeepney Terminal		5		5
	Parks/Playground				
	Total		10		10
Provincial Total	Public Market	3	49		49
	Bus/Jeepney Terminal		37		37
	Parks/Playground		3		3
	Total	3	89		89

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

Municipality/City	Urban Population in 2010	Level III Water Supply Coverage	Population to be Served
Baungon	10,542	10,015	5,271
Cabanglasan	11,966	11,368	5,983
Don Carlos	31,227	29,666	15,614
Impasugong	12,594	11,964	6,297
Kalilangan	21,444	20,372	10,722
Kitaotao	11,260	10,697	5,630
Lantapan	17,133	16,276	8,567
Malaybalay (Capital)	42,973	40,824	21,487
Manolo Fortich	14,336	13,619	7,168
Maramag	78,701	74,766	39,351
Pangantucan	28,298	26,883	14,149
Quezon	22,393	21,273	11,197
San Fernando	16,864	16,021	8,432
Sumilao	18,398	17,478	9,199
Valencia	92,583	87,954	46,292
<b>Provincial Total</b>	<b>464,012</b>	<b>440,812</b>	<b>215,359</b>

Table 8.5.6 Additional Number of Urban Households to be Served by Municipal Solid Waste System in Phase I

Municipality/City	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
Baungon	98	919	828	730
Cabanglasan		712	641	641
Damulog	548	774	697	149
Dangcagan	801	839	801	
Don Carlos	1,050	4,417	3,976	2,926
Impasugong		952	857	857
Kadingilan	1,258	951	1,258	
Kalilangan	3,320	3,194	3,320	
Kibawe	396	836	753	357
Kitaotao	4,033	2,039	4,033	
Lantapan		2,617	2,356	2,356
Libona		434	391	391
Malaybalay (Capital)	10,000	5,277	10,000	
Malitbog		528	476	476
Manolo Fortich	450	1,058	953	503
Maramag	3,208	9,934	8,941	5,733
Pangantucan	1,305	4,211	3,790	2,485
Quezon	1,114	2,728	2,456	1,342
San Fernando	1,477	2,540	2,286	809
Sumilao		1,953	1,758	1,758
Talakag	3,500	1,075	3,500	
Valencia	8,410	6,889	8,410	
<b>Provincial Total</b>	<b>40,968</b>	<b>54,877</b>	<b>62,481</b>	<b>21,513</b>

Table 8.6.1 Water Supply Facilities Required by Target Year

Name of Municipality	Phase I (2003) Requirements										Phase II (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	No. of System	No. of Communal Faucets	Level I			Total No. of Wells	No. of Add'l. Deep Wells	No. of HHs Connection	Level I			Total No. of Wells	
						40 m	80 m	120 m				40 m	80 m	120 m		40 m
Baungon	Expansion	1	133	3	60	17	17	6	23	2	2,066					
Cabanglasan	New	1	66	3	60					2	2,749			66	66	
Damulog	New	1	182			1	1		1	1	862		29		29	
Dangcagan	Expansion	1	29	1	20	80	80	34	114	1	1,179		19	7	26	
Don Carlos	Expansion	1	1,388	1	20	124	124		124	3	5,065		77		77	
Impasugong	Expansion	1	94	10	200					2	2,274		20	29	49	
Kadangilan	New	1	278	3	60	67	67		67	1	914		43		43	
Kaliangaran	Expansion	1	518			14	14	53	67	3	4,105		10	40	50	
Xibawe	Expansion	1	187	8	160					1	191		51	12	63	
Kitaotao	New	1	453	5	100	28	28	28	56	2	2,125	33	33	32	65	
Lantapan	Expansion	1	154			13	13		18	2	3,598		119	50	169	
Libona	Expansion	1	141			87	87	21	108	1	179		109	27	136	
Malaybalay (Capital)	Expansion	1	542			160	160	371	531	2	3,153		184	429	613	
Malibgo	New	1	29	10	200					1	826		27	6	33	
Manolo Fortich	N/A					4	4		4	2	2,335		181	20	201	
Maramag	Expansion	4	5,310	4	80	33	33	21	54	6	10,146		13	8	21	
Pangasinan	Expansion	1	182	6	120	3	3	4	7	4	6,172		6	14	20	
Quezon	N/A			17						2	3,409					
San Fernando	New	1	444	10	200					2	3,431		6	6	84	
Sumilao	N/A			6	120					2	3,399				6	
Talakeg	Expansion	1	19	3	60	25	25	6	31	1	305		144	35	179	
Valencia	N/A									9	16,851					
Provincial Total	Exp- 12 New- 6	21	10,149	90	1,460	28	628	656	549	52	75,334	33	1,038	1,071	859	
									1,205						1,930	

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, 10% of the total required facilities will be implemented by public (LGUs) and 30% 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.

(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 48 Level I deep wells shall be newly constructed by public (LGUs) and 10% of these deep wells shall be rehabilitated annually. Presently, the Waterworks Division of the province has a rotary type drilling rig and the DPWH-DEOs have 4 units of percussion type drilling rigs (2 units are necessary for overhaul) and one unit of rotary type drilling rig applicable for more than 8" of bore hole diameter.

Therefore, one set of drilling rig (medium size percussion type) together with 1 set of well rehabilitation equipment, 1 unit of support vehicle for well rehabilitation and 6 units of service truck for deep well construction 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 compared 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

##### Instrument/Equipment and Other Laboratory Accessory:

Two (2) 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 in Malaybalay City, and the other set, to the new laboratory in Maramag Provincial Hospital. The new laboratory will also be provided with laboratory accessories such as sink, working table, etc. The following are the requirements:

Item	Unit	Upgrading of	
		Existing Laboratory	New Laboratory
1. Instrument/Equipment			
Turbidity meter	set	1	1
Color meter	set	1	1
pH/Residual chlorine checker	set	1	1
Incubator	set		1
Refrigerator	set	1	1
Sterilizer	set		1
Portable water quality testing kit	set	1	1
Electric stove	set	1	1
Range hood	set	1	1
2. Glassware/Chemical	set	1	1
3. Accessory			
Sink	set	X	1
Working table	set	X	1
Shelf	set	X	1
Office desk	set	X	1
Chair	set	X	1

### 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).



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 Households			No. of Public Toilets	No. of Households			No. of Public Toilets	No. of Households			No. of Public Toilets	No. of Households			No. of Public Toilets					
	Flush	Pour Flush	VIP/ Dry	Public Market	Bus/ Jeepney Terminal	Parks/ Playground	Public Sch. Toilets	Flush	Pour Flush	VIP/ Dry	Total	Public Sch. Toilets	Flush	Pour Flush	VIP/ Dry	Total	Public Market	Bus/ Jeepney Terminal	Parks/ Playground	Public Sch. Toilets	Flush	Pour Flush	VIP/ Dry	Total	
Bauregon	179	100	279	3			1,634	471	2,105	10	941	639	1,580	4							1,277			1,277	18
Cabuglasan	263	98	75	436			3,461		3,461	6	1,203	978	2,181	6							3,252			3,252	34
Damulog	284	416	700	1			1,644		1,644	4	278	35	313	2							1,312			1,312	14
Danagayan	290	90	380				106	199	305	2	426	157	583	2							1,508			1,508	15
Don Carlos	1,118	696	1,814	9			486	2,647	3,133	11	2,188	782	2,970	14							1,017	2,578		3,595	37
Impassugong	321	143	464	3			325	924	1,249	11	1,187	893	2,070	6							403	2,227		2,630	28
Kadangyan	344	87	431				2,403		2,403	4	308	14	322	2							2,349			2,349	26
Kalilangan	679	210	889	12	1		179	142	321	8	1,426	397	1,823	8							14	1,655		1,669	15
Kibawe	756	210	966				369	1,350	1,719		285	29	314	2							2,913			2,913	32
Kilaosao	806	273	1,079	3	2		361	1,703	2,064	6	624		624	4							3,292			3,292	36
Lantapan	79	44	123	1			344	847	1,191		156	22	178	1							306	4,247		4,553	36
Litbona	2,292	602	2,894	11			398	398	796		3,153	1,332	4,510	22							1,796	2,330		4,126	45
Mayabunay (Capital)	141	55	196				5156	753	5,909	7	1,370	1,040	2,410	7							2,697	5,916		8,613	87
Maitubog	2,542	1,634	4,176	37			106	321	427	9	5,891	2,677	8,568	41							347	1,032		1,379	16
Mariano Fortich	1,274	346	1,620	14			516	373	889	10	1,974	694	2,668	12							1,536	2,688		4,222	19
Miramao	982	600	2,699	2			1,606	1,606	3,212	6	1,501	993	2,794	9							3,330			3,330	34
Pangantucan	699	771	1,470	9			471	139	610	5	1,495	844	2,339	10							596			596	7
Quizon	323	114	437	2			2,484		2,484	11	391	51	442	3							5,635			5,635	51
San Fernando	2,216	438	2,654	17			1,466		1,466	46	8,806	6,632	15,438	42							2,410	1,805		4,215	84
Sumitao	13,296	7,846	21,142	135	3		3,636	37,926	41,562	234	36,403	18,781	55,184	214							13,064	68,310		81,374	862
Talbakag																									
Valencia																									
Provincial Total																									

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. Fifteen (15) additional units of truck are required to meet assumed service coverage as reflected in Table 8.6.3.

Table 8.6.3 Number of Refuse Collection Trucks Required in Phase I

Municipality/City	Additional Urban Households to be Served	Estimated Daily Amount of Refuse to be Generated, (Kg)	Number of Collection Truck Required
Baungon	730	306	1
Cabanglasan	641	268	1
Damulog	149	63	1
Dangcagan			
Don Carlos	2,926	1,224	1
Impasugong	857	359	1
Kadingilan			
Kalilangan			
Kibawe	357	150	1
Kitaotao			
Lantapan	2,356	985	1
Libona	391	164	1
Malaybalay (Capital)			
Malitbog	476	199	1
Manolo Fortich	503	211	1
Maramag	5,733	2,397	1
Pangantucan	2,485	1,039	1
Quezon	1,342	561	1
San Fernando	809	339	1
Sumilao	1,758	735	1
Talakag			
Valencia			
<b>Provincial Total</b>	<b>21,513</b>	<b>9,000</b>	<b>15</b>

## 8.7 Identification of Priority Projects for Medium-Term Development Plan

In general, 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 conducted. Within each level, if funds were insufficient, a ranking could be carried out applying some factors, such as willingness to pay, water-related diseases status and per capita cost. Under the above-mentioned conditions, the implementors should 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

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**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 80% and in rural areas to 85%. On the other hand, household toilets will be made available to 93% of the urban population and 75% 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 98% in urban areas and 93% 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 in-put 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.

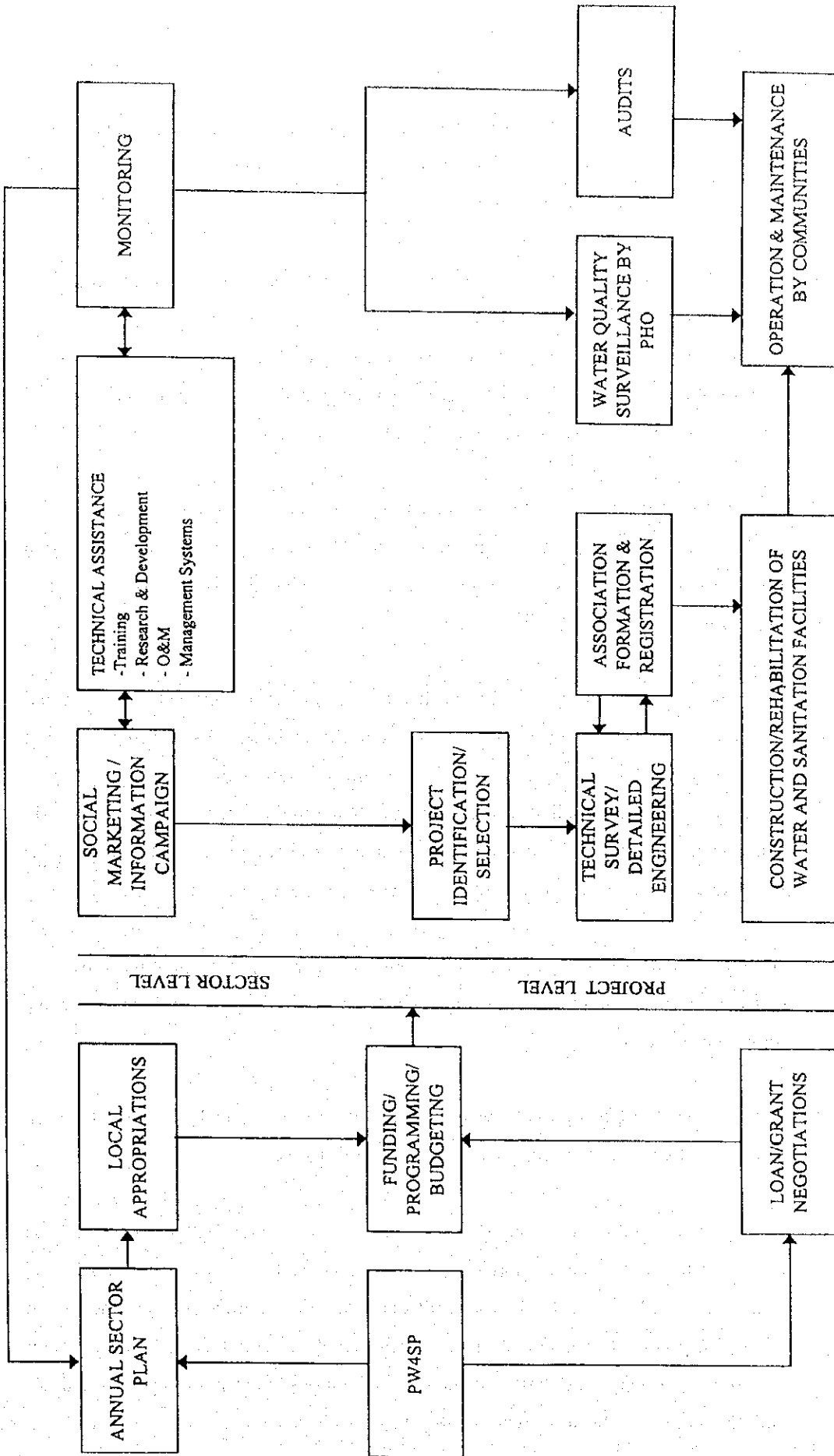


Figure 9.2.1 Sector Management Model

(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:

- 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 5<sup>th</sup> and 6<sup>th</sup> 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 3<sup>rd</sup> to 6<sup>th</sup> 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 form 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 (Provincial Water Supply and Sanitation Unit; tentative name). Existing Waterworks Division may be the core organization being harnessed with all functions required in the implementation of sector projects.

#### **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 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 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 augmented organization of the existing Waterworks Division, 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 have combined functions of PPDO, PEO and PHO in the implementation of the sector projects. The role and responsibility of each member as well as the joint tasks to be undertaken among them shall be clearly defined. The head of the unit shall decide 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 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 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 operating 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), the base core of which is Waterworks Divisions shall be operational. This is because of the expected large volume of work that will be required by the PW4SP and other ODA- and locally-funded WATSAN projects. 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 current LGC is necessary.

The provincial government should ensure that the unit will be provided with 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 province.

The initial professional-level staffing of the proposed PWSU (modification/augmentation of the Waterworks Division) 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

(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.
- e) 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 show 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: 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 should always be a community decision.

- 2) Organization: There are several viable Level III models, which may be adopted: the Water District Concept; an LGU-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, reveal many difficulties because of numerous government controls and restrictions. The private sector may be a viable option. It may use the BOT mechanism or it may invest on a long-term basis in larger systems.
- 3) Technology and Technical Design Specifications: Regardless of the type of 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 rules on bidding and award of contracts using public funds. The LWUA uses standard formats and procedures for this process and the LGUs may adopt this.
- 5) Construction by a private contractor is preferred. Inspection will be conducted 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 and 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 un-

dertake 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.

#### **9.5.5 Approaches to Participatory Community Development**

##### **(1) Manner of Participation in Sector Development**

There are three levels of service where both the LGUs and the beneficiaries can participate in sector development. These are the following:



- Level 1 – Participation in (1) planning and implementing sector projects in the province/municipality/barangay; (2) the formation, management, operation and maintenance of the WATSAN association, usually a BWSA or a water cooperative.
- Level 2 – Participation in (1) planning and implementing sector projects in the province/municipality/barangay; (2) the formation, management, operation and maintenance of the WATSAN association, usually a RWSA or a water cooperative.
- Level 3 – Participation in the formation of water districts or LGU-operated waterworks, and in determining acceptability of new projects and corresponding water rates, among others.

#### LGU Participation

The LGUs, to be able to participate fully in all the phases of the sector project, should be made to decide on the type of project and its scope to be implemented in the province that would be appropriate to its ability to support in the long term.

To attain this, the LGU must encourage active community participation for the sector and open venues that will allow the beneficiary communities actual involvement in all the phases of project development such as in planning and design, monitoring and evaluation. These include activities as project identification, site selection, water rate setting, managing the WATSAN association, and the operation and maintenance of the constructed facilities.

It is recommended, therefore, that the LGUs utilize the following approaches to facilitate various levels of community participation:

- a) Information Sharing. In community projects where external assistance is provided, project planners and implementors should not only share information with beneficiaries to facilitate collective and individual action but should share information as a means to assess the demand of the beneficiaries as they disclose their felt-needs and experience to the planners and implementors. This arrangement enables both sides come to understand and perform their tasks better. Information sharing/demand assessment can be achieved through formal and informal meetings, house-to-house visits or surveys and/or barangay meetings.
- b) Consultation. The LGUs should consult the beneficiaries on key issues during all the stages of a project cycle in order to increase their level of community participation. The beneficiaries are the people to be actually served by the WATSAN improvement or project, including their locally elected leaders, sectoral representatives and other

acknowledged informal leaders. This broad-based consultation gives the beneficiaries the opportunity to interact freely and provide valuable feedback to the planners and implementors. In WATSAN projects, the people should be consulted as early as the planning/study period when level of service, facilities sites, costs and other important data are determined. Consultation will be crucial during the construction of facilities, as it is in this stage that participation is most needed through the provision of free labor and donation of locally available materials.

- c) **Decision-making Role.** The LGUs should give the beneficiaries and their leaders a genuine decision-making role in planning and implementing sector projects, exclusively by the beneficiaries alone or jointly with others on specific issues or aspects of a project. Decision-making implies greater control or influence on the project and, therefore, a higher level of community participation.
- d) **Initiative or Action.** The LGUs should provide the beneficiaries and their leaders ample room to take initiative in terms of actions and/or decisions pertaining to a project, such as initiating the organization of a WATSAN association, requesting for training, and upgrading its system from one service level to another.

#### Beneficiaries' Participation

There are many ways that the beneficiaries participate in sector projects. These can be categorized into four ways, namely:

- a) **The Provision of Free Labor and/or Materials.** The beneficiaries should continue to contribute needed labor and materials, as this is one way of increasing the people's identification with the system being built. But, contributing labor or donating materials as a demonstration of participation should not be the only form of participation available because pride of ownership is also dependent on what the people's other priorities might be.
- b) **The Sharing of Costs.** Project beneficiaries should also be made to contribute in cash or in kind in maintaining the system – an indication that they value the service and are committed to keeping the system in good working order. This sharing of costs, through cost recovery schemes or O&M agreements, may not in themselves be a reliable indicator of local commitment, if the average community members and, in particular, women have not been involved in decisions concerning the system. Thus, other forms of participation are recommended to be explored.

c) Participation through Contractual Obligation like MOAs. The participation of the beneficiaries in the project can be detailed in a listing of the roles and responsibilities that apply to each partner in the project, that is, national government with the LGU, and the LGU with the community. To make these requirements more formal and binding, a contract or a Memorandum of Agreement may be drawn. The elements to be considered in the MOA should be the how to solicit the continuous support of the community's leadership, the WATSAN association's leadership, and the maintenance volunteers in order to keep the WATSAN association and its facilities functioning.

It is recommended that the participation of the beneficiary community should, therefore, shall be demonstrated through: (1) the organization of water and sanitation committee in all BDCs that would coordinate and monitor local contributions in the sector; (2) the organization of a WATSAN association that will promote, manage, operate and maintain the system; (3) the training of volunteer mechanics, pump operators and other technicians.

It should be noted, however, that this approach might not sufficiently involve the average person in the community or barangay, since agreements made with the community leadership and presented at large meetings may not be fully understood by the mass community. So, this must still be augmented by other forms of participation.

d) Participation through Community Decision-Making. This is the most highly recommended form of participation because it creates a strong sense of local responsibility for using the improved WATSAN resources well and sustaining these in good order. The community's participation, therefore, must evolve and be developed through participatory community development and education processes (explained later in this report) which must involve both the male and women members of the community in decision making right from the start.

The measure of success can be confirmed by: (1) the collective decision to organize the community WATSAN association where the members can articulate what responsibilities they are willing to assume in the general management, operation and maintenance of the WATSAN facilities; (2) the collective decision on matters pertaining revisions in project plans and designs and the type of training required that shall reflect the demands of the people in the community; (3) the collective decision on the type of WATSAN organization and level of service suitable for the community; and (4) the collective decision for the criteria on site selection and water fees to be charged, among others.

(2) The CD-CO Process

For Levels I and II service, it is suggested that the Province should utilize and/or adopt the Community Development Process developed from the recent WATSAN UNDP-PHI assisted project, and modify this to suit local conditions and requirements. The recommended typical CO-CD process or manner for Levels I and II comprises three phases of community activities.

The first phase, called Formation of Organization Phase, consists of activities intended to mobilize the members of the community. The second phase, Development of Organization, involves activities aimed at building the capability of the user's group that includes training. The third phase, Consolidation of Organization, consists of activities that strengthen the capacity of the user's group to sustain the operation of the association (refer to Supporting Report for the Detailed Community Development Process.)

As entry point of all development activities, the BDC is primarily responsible for the identification and prioritization of sector projects/needs. The decision whether to accept Level I or II facility and the council's counterpart shall emanate from the BDC with a parallel consultation with other community leaders. In this way, the community demand could be assessed and the support and commitment of the entire community secured.

Once an agreement is reached with all concerned, and the BDC decides to undertake the WATSAN project, the Barangay CD Coordinator, with assistance coming from the provincial and municipal CD Specialists and/or the NGOs hired for the purpose, must undertake a barangay survey to validate the assessment of the BDC as compared with the beneficiaries' demand for the level of service. The survey will also provide the information on the users' willingness to take the responsibility for the O&M of the facilities, willingness to pay and to be trained on O&M as well as the provision of local counterpart. Such discussions will generate a demand assessment from the barangay officials to be validated and/or confirmed against the results of the barangay survey. The survey results, together with the spot map, must be presented to the community for further validation and/or confirmation (refer to Supporting Report for the Community Organizing Handbook for Water Supply and Sanitation).

In forming the water districts, LWUA, in coordination with the LGUs concerned, conducts a series of sectoral consultations with the community. Since water districts are formed at the option of the LGU, LWUA first consults the people, through a succession of public hearings, to arrive a consensus on whether or not to form the water district. LWUA also

encourages the community to participate in the selection of the WD's' five-man board of directors, who are nominated from various sectors. Once formed and operating, the water district conducts regular dialogues with its concessionaires on issues such as water rates formulation and adjustment, expansion program and other matters that may affect the people-WD relationship.

#### **9.5.6 Information, Education, and Communication (IEC)**

In the long term, it is the power of information, education and communication programs that would sustain the gains of the sector. Proper attitudes and values towards water and sanitation would be developed only if the LGUs and the users are fully informed of sector developments, opportunities and projects and made thoroughly aware of their responsibilities towards sustaining the operation and management of WATSAN facilities. Thus, IEC should be looked upon as a long-term activity, which should ideally start as a foundation activity even before a project begins.

It is recommended, therefore, that conceptualizing a comprehensive and systematic IEC program be undertaken from the national levels, down to the provincial, municipal and barangays. For the sector planners and implementors, an IEC program would foster interest and support needed from local officials and thus pave the way to a smoother implementation of projects in the national, provincial, municipal and barangay level. On the side of the people, an IEC program would promote better awareness and understanding of the benefits and responsibilities, thus giving them a basis for better decisions for the sector.

##### **(1) National**

As an interim measure, the DILG's WSS-PMO should periodically provide information on sector policies, plans, initiatives and programs for regular dissemination to the public, as well as to its regional and provincial offices. It can do so by utilizing the Department's Public Information Office (PIO) and other existing communication linkages with the LGUs, as well as the government information and mass media networks, such as the Philippine Information Agency, Philippine Broadcasting System, and PTV-4.

In the medium term, the DILG's WSS-PMO should work for the creation of a public information unit within the PMO to take care of multifarious IEC tasks, such as, but not limited to: (1) planning and execution of a nationwide comprehensive public information and education program on water supply and sanitation utilizing the print, broadcast and

television; and (2) undertaking capability and capacity building programs on IEC for provincial and municipal counterparts.

In the long term, the WSS-PMO should introduce WATSAN education formally into the school system, as an enhancement in both the grade and high school curricula. Simultaneously, it should attract national and local vocational schools to offer courses in support of the operation and maintenance of WATSAN facilities. As such, it should officially come into agreements with the Department of Education, Culture and Sports (DECS) and the Technical Education and Skills Development Authority (TESDA).

In order to maximize existing IEC programs on the national level, it is recommended that the DILG link or tie-up with the Local Water Utilities Administration (LWUA) which already has a nation-wide IEC program on water utilizing all communication media.

(2) Provincial

The proposed Provincial Water Supply and Sanitation Office, through the CD Specialist, shall be responsible for filtering down information on sector developments to the municipalities, barangays, as well as the general public utilizing all forms and channels of communication. As an interim measure, the CD Specialist shall utilize the provincial public information officer for the purpose of information dissemination only. However, it should slowly develop its own expertise in information and communications planning so that the comprehensive IEC program can be further improved and better executed in the long term.

It is suggested that relevant provincial events (meetings, fora, training programs, etc.) be utilized to discuss sector projects and distribute informational/educational materials. General information, that is, news on current projects, technologies, health and hygiene tips – can be channeled through local radio stations. These strategies should be replicated at the municipal levels. The Province, assisted by the DILG-WSS PMO, should sponsor an IEC seminar workshop among the municipal CD Specialists.

(3) Municipal

It is suggested that the IEC strategies of the province be adopted by the Municipal Sector Liaison Team, particularly the assigned CD Specialist. If broadcast media facilities are absent in the municipality, it is also recommended that the CD Specialist employ the inter-personal approach in communication, such as group discussions, community meetings, dialogues, household visits, and one-on-one talks with the barangay officials and people. Furthermore, the municipality should maximize the use of non-traditional media in

disseminating information, such as school exhibits, fiestas, special town events and the local movie houses. The CD Specialist may seek the assistance of the water districts in their respective localities. The water districts generally implement comprehensive IEC programs.

#### (4) Barangay

Aside from CD work, the barangay CD Coordinator shall also disseminate all sector information to the barangay officials and constituents. Thus, the CD coordinator should endeavor to attend all regular barangay council meetings to discuss relevant sector information. For urgent information, the coordinator can call special dialogues or meeting to announce important messages. He/she can also take advantage of special community gatherings such as civic and religious group meetings, PTA (school) meetings, to distribute informational/educational materials. The coordinator can also print messages on posters that can be placed in strategic places.

### 9.5.7 Health and Hygiene Education

In the medium term, the proposed Provincial Water Supply and Sanitation Office can adopt the health and hygiene education program of the Department of Health (DOH) which already has a comprehensive program planned at the central level and executed by its local health offices. This Office should ask the assistance of the PHO in the implementation of a province-wide health and hygiene education program, utilizing existing channels and methods as well as available materials. It should also include health education information in its training programs for WATSAN associations.

As revealed in the group surveys, the people learned about health and sanitation mostly from health workers and from the radio. The province can, therefore, take a cue from this by giving emphasis on the utilization of health personnel to undertake health education and on airing health education materials over the radio.

## 9.6 Gender

### 9.6.1 General

The LGUs must recognize and give vital emphasis on the role of gender sensitive participation as critical factors in ensuring the project's success. Sustainability of water supply and sanitation services and hygiene programs depend on responding to the demands of men and women in communities. Use, maintenance and financing of water supplies and sanitation systems require the participation of both the men and women in the planning, implementation and monitoring

and evaluation of projects.

This section presents the recommendations on how to harness the equal participation of the men and women 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.

### **9.6.2 LGUs and Gender**

The LGUs should always conduct gender sensitivity analysis when determining water supply and sanitation projects that are appropriate for the men and women members of the beneficiary community. This means that the difference between men's and women's activities, roles and resources will have to be identified in order to determine their development needs.

Through this, the constraints and opportunities of both men and women within the water and sanitation sector can be ascertained, a process that can help in the provision of services that men and women want which are appropriate to their circumstances. Thus, data collected, such as, but not limited to, population, type of participation, morbidity and mortality rates, shall be gender-disaggregated. Among others, the following data shall be collected:

- National-level policies and programs on gender;
- LGU-level policies and programs on gender;
- Local NGOs and their programs in promoting gender and development;
- Experiences of sector agencies in mainstreaming gender in sector projects;
- Actual views of women and men regarding their demands and their perceived roles and responsibilities.

It is important to note that since gender issues are usually localized, all concerned LGU staff be equipped with knowledge of gender and development as well as gender analysis skills prior to making any approaches to the target community. In this connection, to ensure the gender responsiveness of WATSAN projects, the province should be trained through a Trainors' Training Program on Gender, and later on transfer what has been learned to municipal/barangay staff involved in sector projects.

### **9.6.3 Gender Participation in WATSAN Projects**

It is recommended that both the men and women of the beneficiary communities must be given equal opportunity to be appointed in (1) the water supply and sanitation committee in the



barangay; (2) the Board of the WATSAN association to be organized; (3) and other committees/task forces that may be formed in order to realize sector projects and goals.

On WATSAN training, both genders should be given equal chances in articulating the type and duration of training they would like to attend. The same should be done in determining the functions that the men and women would like to assume in the WATSAN association, especially in operation and maintenance. In other words, the roles traditionally held by men or women should be made available to the opposite genders as well.

A simple checklist, developed from the OECF-funded Special Assistance for Project Sustainability of the Rural Water Supply Project III, of the issues to be considered for gender responsiveness is presented below:

- a) For construction of Level I facilities and sanitary latrines:
  - Are the designs (specifications) of Level I facility and sanitary latrines friendly to both sexes and based on their needs?
  - Do system/procedures allow both sexes to participate in construction?
  
- b) Capacity enhancement program:
  - Are all project personnel aware of gender issues?
  - Is gender training incorporated in the capacity enhancement program?
  
- c) Community development program:
  - Can both women and men participate in any kind of meeting?
  - Can both sexes freely express their opinion in the meeting?
  - Is all uncompensated work shared equally among women and men?
  - Do both women and men participate in the decision process for determining construction equity (fees and labor)?
  - Do both women and men participate in the WATSAN association's formation process?
  - Are both sexes represented in WATSAN association as board members?
  - Do both sexes participate in a pre-construction/formation training?
  - Is all training opportunity shared by both sexes?
  - Do both sexes participate in O&M activities?
  - Do both sexes participate in monitoring and evaluation activities?
  - Will the project effects be shared equally among women and men?