REPUBLIC OF GHANA

MINISTRY OF WATER RESOURCES, WORKS AND HOUSING

COMMUNITY WATER AND SANITATION AGENCY

Board Draft

Update of the Strategic Investment Plan, 2008–2015 & The Medium-Term Plan, 2008-2012

June 2007

LIST OF ABBREVIATIONS

ADB	-	African Development Bank
AFD	-	Agence Francaise de Developpment
BH	-	Borehole
COM	-	Community Ownership and Management
CIDA	-	Canadian International Development Agency
CWS	-	Community Water and Sanitation (a description of the sub-sector)
CWSA	-	Community Water and Sanitation Agency
DA	-	District Assembly
DANIDA	-	Danish International Development Agency
DFID	-	Department for International Development (of the UK)
DP	-	Development Partners (also referred to as 'donors')
DWSP	-	District Water and Sanitation Plan
DWST	-	District Water and Sanitation Team (technical support group in the DA)
ESA	-	External Support Agency (another term for 'donors')
EU	-	European Union
GoG	-	Government of Ghana
GPRS	-	Ghana Poverty Reduction Strategy
GTZ	-	German Agency for Technical Assistance
GWCL	-	Ghana Water Company Limited
GWSC	-	Ghana Water and Sewerage Corporation
HDW	-	Hand Dug Well
HDWC	-	Hand Dug Well Contractor
HIPC	-	Highly Indebted Poor Countries
IDA	-	International Development Association (World Bank)
IGF	-	Internally Generated Fund

JICA	-	Japan International Co-operation Agency
KfW	-	Kreditanstalt für Wiederaufbau (German Aid Agency)
KVIP	-	Kumasi Ventilated Improved Pit (Latrine)
MLGRD&E	-	Ministry of Local Government, Rural Development and Environment
MWRWH	-	Ministry of Water Resources, Works and Housing
NCWSP	-	National Community Water and Sanitation Programme
NGOs	-	Non-Governmental Organisations
POs	-	Partner Organizations (such as NGOs and private consultants)
PS	-	Pipe System
RWST	-	Regional Water and Sanitation Team
SIP	-	Strategic Investment Plan
T/A's	-	Technical Assistance firms (same as PO's)
WATSAN	-	Water and Sanitation Committee
WSDB	-	Water and Sanitation Development Board
VIP	-	Ventilated Improved Pit (Latrine)

EXECUTIVE SUMMARY

Background

This report updates the Strategic Investment Plan (SIP) 2005– 2015 and presents a Medium-Term Plan for the period 2008 - 2012. Specifically, the update improves the design of the model, enhances the population and other data on which the model is based and offers a conservative coverage target. Though underlying relationships in the sector have not changed, a number of challenging developments require policy resolution. Therefore, where warranted, suggestions to resolve the financial and other challenges faced by the communities served by the CWSA are proposed.

The 2005 SIP had a number of limitations, including the design and specification of the model. The population data on which it was based relied not on a nationally-accepted Census, but a headcount conducted by the CWSA. The coverage statistics relied on unverified information supplied by the Districts of the number and technical functionality of facilities. The eleven-year implementation period was considered long. But to a number of Development Partners, the core issue was the financial implication of the 85 per cent coverage target, which was considered to be extremely ambitious and practically unattainable.

Updating Community information

A major objective of the update is to improve data reliability and consistency between the Regions and Head Office. Data accuracy requires that conceptual and methodological differences causing inconsistency in the coverage statistics are identified and resolved. To do this it was necessary to confirm data on facilities and their operational status. The task was to validate and incorporate District data information with the 2000 Population Census. Extensive work has been done to provide a sustainable basis for the data underlying the SIP update.

At the first stage of data consolidation, the task was to confirm the population database. The most current demographic information had to be harmonized with the facilities data in the communities. With the creation of new Districts, it was necessary to match the community data with the new administrative structure.

The population data, extracted from the report of the 2000 Census, was distributed to all RWSTs for confirmation that it covered their particular communities. In cases where the Census data could not be linked with the community, a working population (defined as the growth of the population Headcount for that community) was used. Country-wide workshops were organized for RWSTs, assisted by the IT Cordinator and Zonal Planners from Head Office, to update data (provided by the Districts) on facilities at the community level.

At the second stage, the development of detailed baseline information on the status and functionality of each water and sanitation facility in the CWSA's operational areas was undertaken.

The data was then captured into a database which formed the basis for the determination of the District facilities coverage and then aggregated for Regional and National coverage.

Support to community management

CWSA's major responsibilities for facilitation and promotion include the need to provide long-term support to WATSANs and Water and Sanitation Development Boards (WSDBs) to improve their management of community facilities and services. Updating the financial management skills of the WSDBs is crucial for this purpose.

Investments in the development of water facilities have been lower than anticipated in the two years since the SIP was formulated. Consequently coverage for rural communities and small towns did not increase to the extent anticipated. The National coverage rate at the end of 2006 was determined to be 52.86 per cent; lower than the 57.2 per cent projected in the SIP.

Millennium Development Goals

The application of the criterion for achieving the UN's Millennium Development Goal for water, using the 27 per cent water coverage estimated for 1990 as baseline suggests that national water coverage should be 63.5 per cent by 2015. However the CWSA has used a dynamic concept and attempts to halve the un-served population whenever data becomes available.

Using the 2006 national coverage rate, the new target for rural water supply to meet the modified Millennium Development Goal of halving the un-served population by 2015, is 76 per cent. In this report Regional and District goals, based on the MDG principle, have been set and it is this target that should challenge District Assemblies.

Sanitation

Unfortunately, because of the difficulties in confirming the current coverage levels, setting coverage targets for sanitation was not easy. The 2005 SIP attempted to measure CWSA's success in encouraging individuals and rural communities to invest in providing themselves with simple latrines with proven and sustainable technologies. These figures collated then were riddled with errors, therefore during the update these were verified.

The result of the information collected and processed by CWSA suggests that at the end of 2006, the CWSA's contribution to nationa sanitation coverage is about 10 per cent

CWSA's role in sanitation is limited and therefore to attempt to project sanitation coverage as was done in previous SIPs, could be seen as exceeding its mandate. Estimating coverage must properly be the responsibility of the MLGRD&E, an especially important issue since the introduction of the concept of community-led total sanitation.

CWSA sees its role properly as supporting the MLGRD&E to develop and apply international norms in the sector. For example it is internationally accepted that to achieve the maximum health benefit in the provision of potable water, at least 50 per cent of households in a community must have access to decent sanitation facilities.

The issue of providing subsidies for the construction of household latrines continues to be contentious. The National Sanitation Policy being led by MLGRD&E should include key implementation strategies that could be adopted by all stakeholders in the sanitation sub-sector.

Sector co-ordination

The establishment of the Water Directorate within MWRWH complements sector management and should help facilitate linkages with the other sub-sectors and key Ministries, Departments and Agencies such as the Ministry of Local Government, Rural Development

and Environment (MLGRD&E), which has responsibility for developing the DAs and for overseeing the sanitation sector.

With this development, the absence of a Sanitation Directorate in the MLGRD&E is felt. There is need for an entity within the MLGRDE that can respond effectively on sanitation, especially its link to water-related sanitation issues. The process of raising the EHSU to the level of a co-ordinating Directorate, which would be the counterpart to the Water Directorate in MWRWH, must be pursued.

Urban areas under Community management

As part of the Private Sector Participation (PSP) process in water, a number of small town systems, numbering about 124, were transferred from GWCL to the District Assemblies for community operation and management. This has led to the increase in the upper limit of small towns, much higher than the levels envisaged by the NCWSP and has drawn CWSA more towards the larger small town communities.

Costing of the SIP

The additional cost of meeting the SIP water coverage target of 85 per cent by 2015 is estimated to cost US$132.7 million. This is the cost additional to the currently estimated commitments by the Development Partners and must not be mistaken for the total funding requirements under the original SIP. Given the total donor commitments of approximately US$175 million for 2008 - 2012, the real cost of funding the updated SIP is slightly below US$310 million for the eight year period, 2008 – 2015.

The additional cost of the 76 per cent water coverage target should be US$125.2 million. The total cost of the water facilities (adding the already committed donor funds) will be approximately US$300 million.

Financing the new Medium-Term Plan

The viability of CWSA in terms of its core operations depends on the GoG fulfilling its obligations. The Government committed itself in 1999 to a certain minimum level of funding. The commitment has not always been met. It is demonstrated from an evaluation of the 1999 commitment that the accumulated shortfall in expected GoG funding over the last six years is approximately ¢15.5 billion (or 19 per cent).

Given that most investment in the rural water sector is funded by donors it is reasonable to expect that the GoG would meet its stated policy with regard to the funding of CWSA core costs.

Medium-Term target

The model estimates that the cumulative deficit to meet the GPRS II target of 72 per cent by 2012 is approximately 16.5 per cent. The model determines that by the application of the national costing norm, the additional cost of providing facilities is about US$ 82.4 million. The total cost of water facilities for the period should therefore be US$257 million.

To achieve the modified MDG target of 68 per cent target water coverage, US$ 71.4 million of new investments are required in facilities and training. That is the minimum challenge for the next five years. The medium-term costs are US$246 million.

Sanitation

The responsibilities of CWSA include support to Districts in facilitating sanitation and hygiene promotion. Four distinct aspects of sanitation promotion are included in the funding requirements of the CWSA for the period 2008 – 2012. It is intended to provide support to the Districts for credit schemes for sanitation. Other activities include a social marketing scheme, extensive hygiene promotion and finally support for technology development and creation of sanitation markets.

Costing for these four activities are broadly estimated to cost about 30 per cent of the water initiatives in the medium-term. Therefore the sanitation component for the target 72 per cent will cost approximately US$24 million.

With respect to the target of 68 per cent, the sanitation initiatives are broadly estimated to cost US$22 million.

Total investment requirement for 2008 - 2012

The total investment requirement of the CWSA to achieve the 68 per cent coverage target is in excess of US$ 271 million; made up of US$175 million of committed funds, US$74 million of new funding for water and US$22 million to meet the sanitation initiative.

To achieve the 72 per cent target, CWSA's medium-term funding requirement is estimated at US$281 million. US$175 million of this is to be financed under existing commitments. New water initiatives require about US$82 million and an additional US$24 million is required for sanitation.

Chapter 1

Purpose of the SIP update

This report is an update of CWSA's Strategic Investment Plan (SIP) 2005– 2015. It seeks to revise the assumptions underlying the SIP model, improve the population and other data on which the model is based, develop a modest, and achievable, financial target from the original report. A number of policy changes are proposed to address new challenges confronting the sub-sector.

To structure and discharge its responsibilities systematically, CWSA has developed an investment planning framework that determines the investments required to enable the provision of safe water and improved sanitation facilities to the rural communities and small towns covered by its mandate. This mandate, as expressed in Act 564, is to cover the rural population of Ghana (currently 11,625,334 people living in 23,052 communities). In addition, there are 2,756,011 people living in 286 small urban towns which have opted for community management. Thus the population the CWSA is charged to serve is approximately 14,368,530 people living in 23,365 communities.

The SIP has its basis in the National Community Water and Sanitation Programme (NCWSP). Operating under the framework of the NCWSP, a number of agencies interact to deliver the physical facilities required to increase access of rural communities and small towns to safe water and improved sanitation.

The 2005 SIP had certain design limitations, including the specification of the model. The population data on which the SIP was formulated was not based on a national census, but on a headcount conducted by the CWSA. The implementation time frame was considered unduly long while the coverage targets were felt to be too optimistic. The coverage statistics relied on unconfirmed information on facilities and their functionality supplied by the District Water and Sanitation Teams, through the Regional Directorate of CWSA.

The Agency has evaluated the deficiencies and is of the view that a revision will realise major improvements. The review thus aims to reconsider a number of crucial issues: (a) improving the population data on which the SIP is based by adopting the results of the 2000 census, (b) surveying the facilities to confirm their operational functionality, (c) model specification, (d) re-assessing the eventual coverage target, (e) re-considering the implementation time frame, and (f) incorporating the revised 2004 District administrative structure.

The target water coverage for 2015 adopted in this report is based on the principle of halving the un-served population. This is comparable to the criterion established in the Millennium Development Goals, which measures progress against a 1990 baseline. The measure adopted in the SIP modifies the MDG criterion by assuming the most current data as baseline to work out the target for 2015. With the expansion of national coverage to 52.86 per cent in 2006, the application of the norm suggests that the coverage level for the year 2015 should be approximately 76 per cent.

Developments in rural water coverage

The Government of Ghana has since 2003 published two strategy documents aimed at tackling the problem of poverty. The first Ghana Poverty Reduction Strategy (GPRS) was published that year and in 2006 a successor programme, GPRS II, was presented, designed to re-focus the strategy. GPRS II confirmed the objectives of increasing access to potable water and sanitation and reinforced the need to accelerate interventions especially new investments

in guinea worm endemic areas. Specifically it committed the Government of Ghana to ensure the timely disbursement of the budget to the CWSA and the District Assemblies Common Fund as well as the need to strengthen public-private partnership and collaboration with NGOs in the provision of rural water.

The SIP for 2005 – 2015 aimed to cover 85 per cent of the target population by 2015. It was estimated to cost US$756 million with 60 per cent (or US$450 million) of the financing from ESAs. The total numbers of facilities to be developed in the period included 16,000 boreholes, 7,100 Hand Dug Wells and over 1,800 piped systems. In addition, substantial training was to be offered to the members of the community to empower them to plan for, develop and manage the various systems.

The ambition of the 2005 – 2015 SIP was clear, as it planned to exceed the modified MDG targets by tripling the rate of facilities provision during the period. This was to be made possible through increased allocation of budgetary funds by the Government of Ghana (GoG). Given the resource constraints facing the GoG, the major impediment to a successful SIP was the inability to elicit the levels of domestic financing expected from the MoFEP.

In the two years since 2005, investments in water facilities were lower than anticipated. Coverage for rural communities and small towns has increased but not to the extent anticipated. From 46.3 per cent in 2003, coverage increased to 51.1 per cent in 2004 and to 51.9 per cent in 2005. By 2006, coverage had increased to 52.86 per cent, but lower than the 57.2 per cent projected in the SIP.

To achieve the target of halving the un-served population by 2015, Ghana needs to reduce the un-served rural population by half (that is, 23.57 per cent). The target for rural water coverage is thus 75.43 per cent, approximated to 76 per cent.

CWSA's mandate on sanitation

District Assemblies are directly responsible for sanitation in the towns and communities. The co-ordinating Ministry that supervises District Assemblies, the Ministry of Local Government, Rural Development and Environment (MLGRD&E), is thus ultimately accountable for the state of national sanitation. CWSA's role is to promote and collaborate with District Assemblies with respect to water-related sanitation.

CWSA's function is one of facilitation and limited to water-related sanitation. It provides technical support to the District Assemblies for the planning and execution of projects for disposing of faecal matter. CWSA's thus promotes and creates awareness in the rural population for maximum benefits to be derived.

Hygiene promotion ensures the use and the application of appropriate hygiene practices. In this role, CWSA is expected to collaborate with the Ministries of Education, Science and Sports (MESS) and Local Government, Rural Development and Environment (MLGRD&E) in creating public awareness in school children and rural communities towards improving their sanitation practices and thereby reduce the health hazards associated with poor hygiene.

In the SIP, sanitation coverage seeks to measure CWSA's success in encouraging individuals and rural communities to invest in providing themselves with simple latrines with proven and sustainable technologies.

Because of the cost of extending subsidies and the direct internal benefit to households, the provision of public subsidies for household latrines has become unsustainable with our

Development Partners, especially with the development of the concept of community-led total sanitation. However it is argued that the provision of institutional latrines can continue to benefit from subsidies.

CWSA's role in sanitation is limited and therefore to attempt to project sanitation coverage as was done in previous SIPs, could be seen as exceeding its mandate. Estimating coverage must properly be the responsibility of the MLGRD&E which has direct responsibility for executing investment projects in the sector.

CWSA sees its role as supporting the lead Ministry to develop and apply international norms in the sector. For example it is internationally accepted that to achieve the maximum health benefit in the provision of potable water, at least 50 per cent of households in a community must have access to decent sanitation facilities. In this report the norm applied for financing sanitation activities is 30 per cent. The funds will be used to finance the following activities

i. Support to District credit schemes for sanitation

ii. Social marketing

iii. Extensive hygiene promotion

iv. Support for technology development and creation of sanitation markets

Sanitation coverage

CWSA has attempted to measure its success in encouraging individuals and rural communities to invest in providing themselves with simple latrines with proven and sustainable technologies. During the exercise to update the SIP it was concluded that it was necessary to focus on estimating the contribution of CWSA to national sanitation coverage.

The result of the information collected and processed by CWSA suggests that at the end of 2006, CWSA's contribution to national sanitation coverage was about 10 per cent.

	Population	POPULATION				Population	Coverage
	Growth Rate	2000	2006	VIP	KVIP	Served	
Ashanti	3.40%	1,935,271	2,365,184	5,304	367	199,840	**8.45%**
Brong Ahafo	2.50%	1,509,136	1,750,135	3,052	176	100,920	**5.77%**
Central	2.10%	1,321,737	1,497,268	1,088	95	48,880	**3.26%**
Eastern	1.40%	1,652,928	1,796,725	7,294	431	245,340	**13.65%**
Greater Accra	4.40%	457,599	592,500	4,484	385	198,840	**33.56%**
Northern	2.80%	1,573,462	1,857,013	10,099	106	143,390	**7.72%**
Upper East	1.10%	942,138	1,006,054	716	50	27,160	**2.70%**
Upper West	1.70%	587,895	650,467	229	52	23,090	**3.55%**
Volta	1.90%	1,278,179	1,430,991	9,938	832	432,180	**30.20%**
Western	3.20%	1,192,339	1,440,383	971	16	16,110	**1.12%**
Total		**12,450,684**	**14,386,720**	**43,175**	**2,510**	**1,435,750**	**9.98%**

The issue of providing subsidies for the construction of household latrines continues to be contentious. A decision needs to be made quickly if subsidies are the most effective means of encouraging households to improve sanitation. Because of the huge externalities they generate, it can be argued that institutional latrines must continue to benefit from public subsidies. The determination of a lasting policy on the provision of public subsidies for household latrines is necessary to focus attention.

Effective Delivery of Water and Sanitation Services

A number of challenges face rural communities and small towns in the sub-sector:

- The continuous movement of trained persons to the cities after benefiting from capacity building programmes at the District level limits capacity improvement and

the ability of the community level private sector to deliver water and sanitation services,

- Increasing official domestic contribution; by District Assemblies and Government;
- Improving the coordination of water and sanitation activities among the different stakeholders, especially in streamlining the contribution of NGOs in the sector.

Financing constraints

The role of the Development Partners in financing service and investment activities in water has been consistently high over the years. In the 2005 SIP it was shown that in 2003 ESAs contributed about 90 per cent of the cost of rural water and sanitation facilities. The Government of Ghana's contribution (Budget and District Assemblies Common Fund) was 8.3 per cent, with beneficiary communities contributing 0.5 per cent. In our 2005 Annual Report the share of Development Partners in project funding increased to 92.7 per cent with the GoG share just under 7 per cent. In the 2006 Quarterly Reports assembled for the update, the DPs are shown to contribute over 88 per cent of investment funding. The share of the Government of Ghana exceeds11 per cent and beneficiary communities and District Assemblies provided less than 0.5 per cent.

Progress in Institutional Development

Over the last ten years the required institutional arrangements have been put in place for the delivery of CWSS. The CWSA is fully established in the Head Office and in all the ten Regions. A full complement of core staff has been recruited and trained. By the end of 2006, District Water and Sanitation Teams (DWSTs) had been established in 134 Districts.

The concept of community management through Water and Sanitation Committees (WATSANs) and Water and Sanitation Development Boards (WSDBs) is fully accepted. The Committees have supervised community water and sanitation delivery, including operation and maintenance.

The principles of contributing to the capital cost of facilities and meeting full operation and maintenance costs have been accepted, and in many communities tariffs have been set above levels paid by urban consumers, to ensure that supply is not disrupted through lack of funds.

Roles and responsibilities in the Water and Sanitation sub-sector

Probably the most significant change since 2004 in the institutional relationships in the water and sanitation sector, described in Chapter 2 of the SIP, has been the creation of the Water Directorate in the re-named Ministry of Water Resources, Works and Housing.

The following summarizes the functions assigned to the Water Directorate:

- Co-ordinating water sector policies and sector investment plans at the Ministry;
- Monitoring and evaluating sub-sector activities;
- Co-ordinating donor and NGO activities at the national level;
- Identifying funding sources and coordinating the budgets of agencies under the Ministry;
- Providing a source of advocacy for the sector in the Government system.

For the CWSA, the introduction of the Water Directorate provides an important point of contact for policy discussion and coordination. The creation of the Directorate should enable Head Office to concentrate on operational activities in planning, monitoring and coordinating sub-sector activities, including the formulation of guidelines and standards and the promotion of best practice through the carrying out of quality assurance.

The responsibility for building capacity and supporting the work of the DAs will continue to be performed by the CWSA Regional Offices.

The introduction of the Water Directorate should help facilitate linkages with the other sub-sectors and key Ministries, Departments and Agencies (MDAs) such as the Ministry of Local Government, Rural Development and Environment (MLGRD&E), which has responsibility for developing the DAs and for overseeing the sanitation sector.

Sanitation is appropriately combined with water supply in the CWSS approach, as the health impact of combined water and sanitation interventions is fully recognized.

There is need for an entity within the MLGRD&E that can respond effectively on sanitation issues. The process of raising the EHSU to the level of a co-ordinating Directorate, which would then be an equal counterpart to the Water Directorate in MWWH, must be vigorously pursued.

Urban areas under Community management

As part of the Private Sector Participation (PSP) process in water, a number of small town systems, numbering about 124, were transferred from GWCL to the District Assemblies for community operation and management. This has led to the increase in the upper limit of small towns, much higher than the levels envisaged by the NCWSP and has drawn CWSA more towards the larger small town communities.

Chapter 2

The National Community Water and Sanitation Programme

As stated previously, the main responsibility of the CWSA is the management of the National Community Water and Sanitation Programme (NCWSP). The NCWSP originated from consultations that started in 1991 between Government, Development Partners and NGOs operating in the rural water sector. Subsequently referred to as the Kokrobite meeting, its conclusion was an agreement to establish an agency to manage the implementation of the NCWSP. In 1998, the Community Water and Sanitation Agency (CWSA) was formally established by Act 564.

The NCWSP aims to:

- Provide basic water and sanitation services for communities that contribute towards the capital cost;
- Ensure sustainability through community ownership and management of facilities, with the active participation of women;
- Maximise health benefits through integration of water, sanitation and hygiene education interventions.

The institutional arrangement envisaged for implementing the NCWSP assigned CWSA responsibility for planning, coordination, regulation, supervision, quality control, support, training and capacity-building within the sub-sector. Other tasks were distributed as follows:

- The Communities were to plan, partly fund, own and manage their water and sanitation facilities.
- Management was to be exercised through WATSANs and WSDBs which were composed of community representatives;
- Private companies and NGOs were to provide services in community organisation, planning, design, construction, operation and maintenance;
- District Assemblies (DAs) were to manage and coordinate programme implementation at the District level.

The guiding policy for the NCWSP is to enhance the effectiveness of investments in the water supply and sanitation sector by making sustainability a primary goal. The strategy is designed to promote community empowerment and reduce the Government's role (i.e. CWSA) to facilitation and monitoring. The programme concept is based on a demand-responsive approach where communities participate in making choices and decisions on the type and technologies of the services that fit their needs and contribute to capital costs and take responsibility for operation and maintenance.

Capacity constraints

At the inception of the NCWSP, it was acknowledged that sector management capacity was weak. It was expected that the DAs would quickly develop critical capacity in project implementation and assume responsibility for the planning, design, supervising construction and financing of rural water and sanitation contracts.

The DAs have been slow in developing the capacity originally envisaged, and still require assistance to enable them to manage the various stages of construction and operation of water and sanitation facilities. Capacity is also lacking in some of the areas reserved for the private sector.

However, unlike the DAs and the private sector, the lead agency in the rural water and sanitation sector, CWSA, has built extensive capacity in project planning, community management and in the selection of suitable technologies. This capacity has to be nurtured and sustained in the coming years if coverage is to be increased.

Table 1 shows the summary of the annual targets and achievement of the NCWSP from 2001 to 2006.

Table 1: Facilities and service: Targets and delivery: 2001 to 2006

System type	2001 Target	2001 Actual	2002 Target	2002 Actual	2003 Target	2003 Actual	2004 Target	2004 Actual	2005 Target	2005 Actual	2006 Target	2006 Actual
Boreholes – new	550	198	1,500	622	1,600	1,290	2,000	2,098	1,647	1,112	1,152	1,325
Hand dug wells – new	50	629	240	65	220	61	100	64	35	1	49	9
Total – new water points	**600**	**827**	**1,740**	**687**	**1,820**	**1,351**	**2,100**	**2,162**	**1,682**	**1,113**	**1,201**	**1,334**
Small Communities pipes –	10	92	20	4	15	19	10	40	1	2	-	5
Small Towns pipes – new	10	63	20	25	48	46	40	57	27	2	89	12
Total – new pipe systems	**20**	**155**	**40**	**29**	**63**	**65**	**50**	**97**	**28**	**4**	**89**	**17**
Hand dug wells – rehab	-	6	-	2	-	-	-	-	-	6	-	9
Boreholes – rehab	500	606	140	407	100	115	130	85	49	31	118	77
Conversions	20	932	5	362	-	-	-	-	-	31	-	4
Total – rehabilitation	**520**	**1,544**	**145**	**771**	**100**	**115**	**130**	**85**	**49**	**68**	**118**	**90**
Sanitation												**-**
Household latrines	3,400	10,295	8,000	4,275	10,000	10,485	10,000	5,501	4,655	3,092	6,179	5,295
Institutional latrines (KVIP)	150	679	260	144	-	246	5,000	465	539	77	500	230
Total – latrines	**3,550**	**10,974**	**8,260**	**4,419**	**10,000**	**10,731**	**15,000**	**5,966**	**5,194**	**3,169**	**6,679**	**5,525**

Achievements of the NCWSP

From an estimated 27 per cent in 1990, rural water coverage increased to 30 per cent in 1999. Coverage expanded to 46.3 per cent in 2003 and to 51.1 per cent and 51.9 per cent in 2004 and 2005 respectively.

The application of the criterion for achieving the UN's Millennium Development Goal for water, using the 1990 data as baseline suggests that national water coverage should be 63.5 per cent by 2015. However the CWSA has used a dynamic concept and attempts to halve the un-served population whenever data becomes available.

After the thorough review of the population data and survey of operational status of facilities it can be confirmed that at the end of 2006 the rate of community water coverage is 52.86 per cent, distributed across the Regions, as follows.

Table 2: National water coverage at end-2006

National coverage							
Region	Communities	Relevant Population	Boreholes	HDW	Pipe Systems	Population Served	Coverage (%)
Ashanti	2,428	2,365,244	3,483	830	73	1,491,619	**63.06**
Brong Ahafo	2,639	1,750,114	2,250	503	18	909,993	**52.00**
Central	3,091	1,497,292	1,053	479	25	694,189	**46.36**
Eastern	3,211	1,796,739	2,078	1,078	18	846,645	**47.12**
Greater Accra	848	592,489	212	65	7	301,918	**50.96**
Northern	3,848	1,857,022	3,197	516	21	1,079,392	**58.12**
Upper East	1,912	1,006,078	1,633	434	6	515,855	**51.27**
Upper West	929	650,464	1,534	77	9	436,991	**67.18**
Volta	2,722	1,430,999	1,756	52	85	729,721	**50.99**
Western	1,739	1,440,399	1,037	418	26	598,155	**41.53**
National	**23,367**	**14,386,840**	**18,233**	**4,452**	**288**	**7,604,478**	**52.86**

The comprehensive database created for this update enables the differentiation of coverage rates for the rural and small towns under community management. The following tables show the rural and small town populations covered by CWSA.

Table 3: Rural water coverage, 2006

Rural coverage							
Region	Communities	Projected Relevant Population	Boreholes	Hand-Dug Wells	Pipe Systems	Population Served	Coverage (%)
Ashanti	2,369	1,772,003	3,235	774	50	1,138,688	**64.26**
Brong Ahafo	2,593	1,322,612	2,033	472	5	651,849	**49.28**
Central	3,056	1,071,319	1,039	405	13	538,858	**50.30**
Eastern	3,173	1,545,536	1,985	1,057	10	715,645	**46.30**
Greater Accra	831	440,018	206	65	6	253,487	**57.61**
Northern	3,821	1,573,222	2,997	499	5	847,353	**53.86**
Upper East	1,903	940,067	1,618	433	2	482,200	**51.29**
Upper West	922	533,295	1,461	77	4	391,362	**73.39**
Volta	2,704	1,264,516	1,723	52	75	617,716	**48.85**
Western	1,709	1,168,241	983	402	15	429,592	**36.77**
National	**23,081**	**11,630,829**	**17,280**	**4,236**	**185**	**6,066,750**	**52.16**

Table 4: Small Towns under community management, 2006

Small Towns coverage							
Region	Communities	Projected Relevant Population	Boreholes	Hand-Dug Wells	Pipe Systems	Population Served	Coverage (%)
Ashanti	59	593,241	248	56	23	352,931	**59.49**
Brong Ahafo	46	427,502	217	31	13	258,144	**60.38**
Central	35	425,973	14	74	12	155,331	**36.46**
Eastern	38	251,203	93	21	8	131,000	**52.15**
Greater Accra	17	152,471	6	-	1	48,431	**31.76**
Northern	27	283,800	200	17	16	232,039	**81.76**
Upper East	9	66,011	15	1	4	33,655	**50.98**
Upper West	7	117,169	73	-	5	45,629	**38.94**
Volta	18	166,483	33	-	10	112,005	**67.28**
Western	30	272,158	54	16	11	168,563	**61.94**
National	**286**	**2,756,011**	**953**	**216**	**103**	**1,537,728**	**55.80**

A comprehensive summary of the annual achievements in facilities delivery for 2005 and 2006 are presented in Table 5 below.

Table 5: Achievement in facilities delivery, 2005 and 2006

	2005		2006	
ACTIVITY	Targets	Achieved	Targets	Achieved
A. Physical/Economic Indicators				
i) WATER SYSTEMS				
Boreholes Construction	1,647	1,112	1,152	1,325
Boreholes Construction-without pump		236		
Boreholes Rehabilitatioin	49	31	115	77
Hand Dug Well Construction	35	35	49	9
Hand Dug Well Rehabilitatioin			-	9
Small Communities Piped System	1	2	-	5
Small Towns Piped System	27	27	93	12
Rain Harvest	14	14	9	
No. Communities Converted to COM		31	11	4
ii) SANITATION FACILITIES				
Household Latrines	4,655	3,092	6,179	5,295
Schools/Institutional Latrine	539	77	500	230
B. DYNAMIC INDICATORS				
i) Districts				
Fully Participating Districts	128	132	132	134
DWSTs to be Formed	91	15	3	23
DWSTs to be Trained	-	46	38	45
EHA's to be trained	16	-	-	-
ii) COMMUNTIES				
New Communities in Program	689	587	48	782
WATSAN to be Formed	1,121	769	1,004	813
WATSAN to be Trained	461	464	1,004	1,195
WSDB to be Formed	36	28	53	3
WSDB to be Trained	32	25	49	7
Pump Caretakers to be trained	-	820	649	641
Communities with Facilities converted	-	-	-	49
iii) SCHOOL'S PROGRAM				
School Health Committees to be Trained	160	21	275	149
Program Teachers to be Trained	424	58	649	641
iv) PRIVATE SECTOR				
Technical Assistance Firms operating	54	29	45	19
HDW contractors Operating	10	2	9	-
Drilling Contractors to Operate	32	-	23	-
Area Mechanic to be trained	90	10	21	42
Latrine Artisans to Operate	135	143	210	
Latrine Artisans to be Trained	207	-	62	327
Small Town Operators to be Trained	42	8	20	
Contractors-Water to operate	28	22	40	42
Contractors-Sanitation to operate	130	-	528	92

Source: CWSA: 2005 Annual Report, Draft Annual Report for 2006

Chapter 3

Strategic Planning and the SIP process

Prior to the creation of the CWSA, there was limited co-ordination in the rural water and sanitation sector. Facilities development was supply-driven and projects were determined separately by different Development Partners, each operating according to its internal dynamic. Consequently operations and maintenance of facilities and the sustainability of supply depended on continued contribution by External Support Agencies.

Considerable progress has been made since 1994 in establishing the demand-driven approach, the principle of community ownership and management, and the creation of capacity in the District Assemblies (DAs) for the implementation of water and sanitation projects. The donor-supported programmes have adopted the integrated approach evolved from the principles underlying the NCWSP.

Table 6: Overview of Regional targets, 2005

ACTIVITY	ASH	BAR	CR	ER	GAR	NR	UER	UWR	VR	WR	TOTAL
WATER SYSTEMS											
Boreholes Construction	530	-	68	350	-	473	-	-	76	150	**1,647**
Boreholes Rehabilitatioin	-	-	36	13	-	-	-	-	-	-	**49**
Hand Dug Well Construction	-	-	22	11	-	-	-	-	2	-	**35**
Hand Dug Well Rehabilitation	-	-	-	5	-	-	-	-	-	-	**5**
Small Communities Piped System	-	-	-	-	1	-	-	-	-	-	**1**
Small Towns Piped System	9	-	-	5	4	-	-	-	9	-	**27**
Conversion of STWS (GWCL Transferred)	-	-	-	-	-	-	-	-	-	-	**-**
Pipe Connections	-	-	-	-	1	-	-	-	23	-	**24**
Rain Harvest	2	-		4		-		-	8		**14**
SANITATION FACILITIES			-								
Household Latrines	700	-	-	170	-	3,670	-	-	52	63	**4,655**
Schools/Institutional Latrine	120	20	72	136	30	-	-	24	123	14	**539**
ST Household Latrine	-	20	58	-	-	-	-	-	-	-	**78**
Health Centre Latrine	-	-	-	-	-	-	-	-	-	-	**-**

Table 6 is a summary of the Regional targets for water and sanitation facilities the CWSA committed to deliver in 2005. Table 7, below shows the level of achievement for the targets stated in Table 6. It confirms that while in most instances the targets were not attained, substantial progress was made.

Table 7: Regional achievements in facilities delivery, 2005

AVTIVITY	ASR	BAR	CR	ER	GAR	NR	UER	UWR	VR	WR	Cumulative Output
Water Systems											
Borehole Construction- completed	184	-	-	189	17	222	185	128	39	148	**1,112**
Borehole Construction-without pump	-	-	-	-	-	236	-	-	-	-	**236**
Borehole -Rehabilitated - completed	-	-	-	-	-	31	-	-	-	-	**31**
HDW Constructed - completed	-	-	-	-	-	-	-	-	1	-	**1**
HDW Rehabilitated - complete	-	-	-	6	-	-	-	-	-	-	**6**
Small/Rural Comm. Pipe Schemes	-	-	-	-	2	-	-	-	-	-	**2**
Small/Towns Pipe Systems Complete	-	-	-	-	-	-	-	-	2	-	**2**
Rain Harvest Tanks	-	-	-	-	-	-	-	-	8	-	**8**
No. of Communities Converted to COM	-	-	-	-	-	31	-	-	-	-	**31**
Schools/Institutional Water	-	-	-	-	-	-	-	-	-	-	**-**
GWCL Pipe Connections	-	-	-	-	-	-	-	-	-	-	**-**
Sanitation											**-**
Household VIP Latrines	250	-	-	55	-	2,678	-	-	27	-	**3,010**
Household KVIP Latrines	-	-	-	-	28	-	-	-	54	-	**82**
No. Sch / Inst. Latrines Completed	-	-	-	56	17	-	-	-	-	4	**77**

The Regional targets for facilities delivery for 2006 are shown in Table 8.

Table 8: Regional overview of 2006 performance targets

ACTIVITY	ASH	BAR	CR	ER	GAR	NR	UER	UWR	VR	WR	TOTAL
Water systems											
Boreholes Construction	530	-	70	65	-	387	-	-	60	40	**1,152**
Boreholes Rehabilitatioin	-	-	39	6	-	-	-	-	70	-	**115**
Hand Dug Well Construction	-	-	18	9	-	20	-	-	2	-	**49**
Hand Dug Well Rehabilitation	-	-	-	-	-	-	-	-	-	-	**-**
Small Communities Piped System	-	-	-	-	-	-	-	-	-	-	**-**
Small Towns Piped System	9	13	-	5	2	14	10	15	5	20	**93**
Conversion of STWS (GWCL Transferred)	-	-	-	-	-	-	-	-	-	-	**-**
Pipe Connections	-	-	-		1	-	-	-	8	-	**9**
Rain Harvest	2			3			-				
Sanitation facilities											
Household Latrines	700	-	-	35	-	4,454	-	160	90	-	**5,439**
Schools/Institutional Latrine	120	130	78	74	30	107	20	-	75	-	**634**
ST Household Latrine	-	130	-	-	-	-	500	68	-	-	**698**
Health Centre Latrine*	-	-	-	5	-	-	-	-	-	-	**9**

Table 9 shows that most of the rural water performance targets of 2006 (shown in Table 8) were exceeded. In the sanitation sub-sector there was failure to reach the targets.

Table 9: Achievements in Regional facilities delivery, 2006

Activity	AR	BAR	CR	ER	GAR	NR	UER	UWR	VR	WR	Total
Water Systems											-
Borehole Construction- completed	462	-	-	71	-	614	87	28	53	10	1,325
Borehole Construction-without pump	-	-	-	-	-	202	-	-	-	-	202
Borehole -Rehabilitated - completed	-	-	-	28	-	49	-	-	-	-	77
HDW Constructed - completed	-	-	-	5	-	4	-	-	-	-	9
HDW Rehabilitated - complete	-	-	-	9	-	-	-	-	-	-	9
HDW Constructed - without pump	-	-	-	-	-	-	-	-	-	-	-
Small/Rural Comm. Pipe Schemes	-	-	-	-	4	-	-	-	1	-	5
Small/Towns Pipe Systems Complete	-	2	-	2	-	-	-	-	8	-	12
No. of Comm. Converted to COM	-	-	-	-	-	-	4	-	-	-	4
											-
Sanitation											-
Household VIP Latrines	289	-	-	50	155	4,569	-	-	232	-	5,295
No. Sch / Inst. Latrines Completed	-	-	-	67	44	55	-	-	57	7	230

Source: CWSA Annual Reports, 2005 and Draft Annual Report for 2006

According to the 2006 draft Annual Report of the CWSA, approximately 88 per cent of investment finance originated from External Agencies. Less than 12 per cent originated from Domestic sources. Table 10 provides the detail, by Regional distribution.

Table 10: Contributions to Funding of Facilities and Capacity, 2006

Investment Funding(¢million)	AR	BAR	CR	ER	GAR	NR	UER	UWR	VR	WR	HQ	Total
ESAs												
AfD	-	-	-	-	-	25,752	-	-	-	-	-	25,752.06
CIDA	-	-	-	-	-	15,765	-	-	-	-	-	15,765.38
DANIDA	-	-	16,433.91	19,571.99	34,908	-	-	-	27,139	-	3,041.60	101,094.53
DFID	-	-	-	-	-	-	-	710.80	-	-	-	710.80
EUROPEAN UNION	-	-	-	-	-	14,757	-	-	-	-	-	14,757.32
IDA	539.04	382.55	94.10	-	-	-	400.41	18,772.20	-	219.00	46,974.49	67,381.79
JICA	-	-	-	-	-	-	-	-	-	-	-	-
KfW	-	-	-	**24.20**	-	-	-	-	-	-	**1,675.60**	1,699.80
NGOs	-	-	-	-	-	0	-	-	-	4.00	-	4.00
HIPC	-	-	-	-	-	0	-	-	-	25.60	-	25.60
Domestic												
GoG	2,425.39	1,779.38	2,296.67	432.15	1,632	5,539	1,879.06	1,870.10	1,428	1,641.30	10,189.95	31,113.40
DISTRICT ASSEMBLIES	-	-	-	-	-	0	-	-	-	20.00	-	20.00
COMMUNITIES	-	-	-	1,121.96	-	0	-	-	-	-	-	1,121.96
GWCL	-	-	-	-	-	-	-	-	-	-	896.70	896.70
TOTAL	2,964.43	2,161.93	18,824.67	21,150.30	36,540.34	61,813.85	2,279.47	21,353.10	28,567.00	1,909.90	62,778.34	260,343.34

Data Availability

A major objective of the SIP update is to improve data reliability and reporting consistency between the Regions and Head Office. Data accuracy requires that conceptual and methodological differences causing inconsistency in the coverage statistics are identified and removed. To do this it is necessary to confirm data on facilities and their operational status.

The first stage of the data exercise verified the population database. The second stage was the development of detailed baseline information on the status and functionality of each water and sanitation facility in the communities served by the CWSA.

As described in Annex A, extensive work has been done to provide a sustainable basis for the data underlying this update.

With the publication of the results of the 2000 Census, a major issue of the credibility of the population data used in the SIP was removed. The difficult part was matching the Census report to the specific communities in CWSA's operational area. The census had conducted on the basis of Enumeration Areas, not towns and communities as they are known. Considerable effort was made to confirm the population stated for each of the communities. When information was non-existent, or inadequate, Census data was replaced by data from the Community Headcount.

To summarise, the cleaning up of the coverage statistics involved the following:

- The adoption of common definitions and uniformity of treatment across the Regions and Districts
- Confirmation of the Operational status of each facility and its location;
- Matching the Census data to the Communities (or failing that using the Headcount).

The Structure of the SIP model

The Strategic Investment Program (SIP) is a component of the system that was designed to determine or monitor the facility coverage of CWSA at the National, Regional, District and Community level. The system is therefore a dynamic tool that can also be used to monitor actual performance of the Strategic Investment Plan (SIP) when it is put in place. Whenever facilities are installed or any of the determinant factors in the model changes, the system responds to reflect the new changes. The system from which the SIP is derived is therefore a tool that management and stakeholders can also use iteratively during the delivery process.

It has been designed with the communities as its base and therefore can be used at the district, regional or national level. This means that all calculations in the model are done at the community level and the results that come from the SIP model at the district, regional and national levels are only the aggregation of the community values.

The reasons for focusing the model on the communities are various:

i. The communities are the actual level for the delivery of the facilities. Therefore a measure of coverage should be community based.

ii. The system can be disaggregated into the regions, districts and communities for verification and update.

iii. The calculations in the model could be more accurate since beneficiaries of a facility are within the community. It is not possible to transfer excess capacity of a facility to other communities.

iv. For the sustainability and dynamism of the system, it is important to make the system very portable and a management tool. By disaggregating the system it can be used as a management tool at various levels.

v. Data gathering is broken down into very small units that can be easily managed and verified and thus provide a sustainable system.

vi. The aim is that the SIP could be disaggregated to the lower levels of management for easy implementation.

vii. Implementing agencies have their priority areas. This SIP is to provide all the stakeholders with the information on area location of choice.

Chapter 4

Design of the SIP

The 2007 update of the SIP model incorporates the committed financing from Development Partners as an input in the model and determines the additional investments required to meet the targeted coverage level. In the 2005 report, facilities delivery target was a gross concept and did not take prior account of the commitments of Development Partners.

Table 11 is indicative of the process for determining the investments needed to achieve the 76 per cent water coverage target. Starting from the actual coverage rate at the end of 2006 and the target coverage rate, an implementation path is derived, referred to in the table as 'Projected Coverage'. The next stage is to determine the 'Existing Coverage' rate, defined as the annual course of facility coverage if no new investments are made but population grows at normal rates.

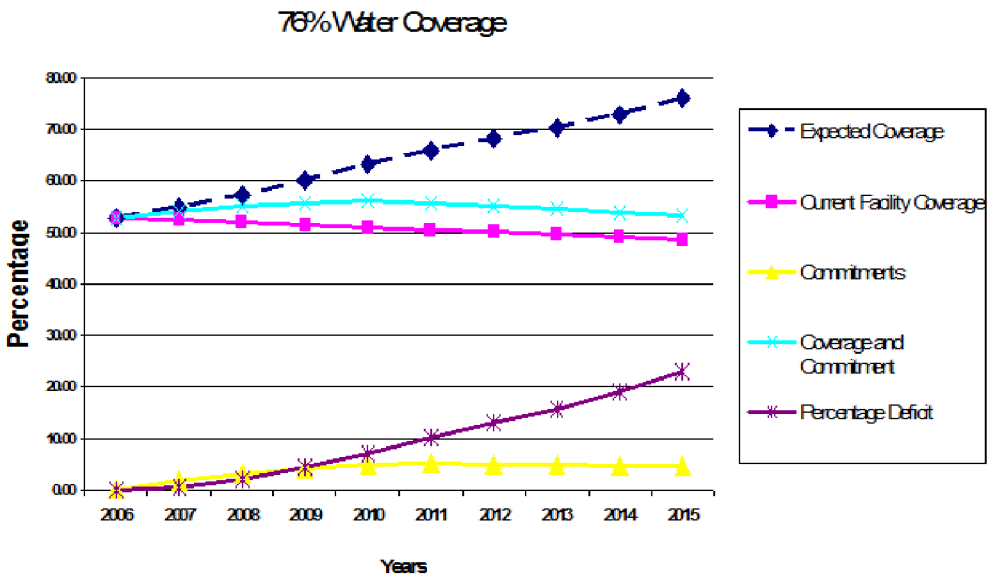
The next stage introduces the levels of 'Committed' donor support into the model. The 'Expected Coverage' is therefore the sum of the 'Existing Coverage' and the 'Commitments' from development partners. The difference between 'Projected Coverage' and 'Expected Coverage' is the target rate of investment that must be found if the target coverage is to be achieved.

This is the MDG scenario, derived from the application of the MDG criterion. The implementation path is derived, and is as shown below.

Table 11: Projected Coverage (76 per cent)

Year	Projected Coverage	Existing Coverage	Commitments	Expected coverage	Deficit
2006	52.86	52.86	0.00	52.86	0.00
2007	54.73	52.40	1.75	54.15	0.58
2008	57.07	51.94	3.17	55.11	1.97
2009	60.00	51.47	4.23	55.70	4.30
2010	63.16	50.99	5.06	56.05	7.12
2011	65.80	50.51	5.16	55.67	10.13
2012	68.00	50.01	5.04	55.05	12.95
2013	70.10	49.52	4.91	54.43	15.67
2014	72.72	49.02	4.79	53.81	18.91
2015	76.00	48.51	4.67	53.19	22.81

Figure 1: The Implementation path



Costing for the 76 per cent target

The model determines the mix of facilities that must be provided if the 76 per cent target is to be achieved by 2015. The model allows for the substitution of superior technical solutions when growth in community size occurs. In those instances the model reduces the number of simple solutions (such as Hand Dug Wells) and converts these into more robust solutions. Table 12 below provides the number of physical facilities that are deemed necessary to achieve the target coverage rate.

Table 12: Facilities requirement for the 76 per cent coverage target

Facility Type	Facility	2008	2009	2010	2011	2012	2013	2014	2015	TOTAL
WATER	Borehole	531	593	789	691	583	675	727	976	5565
WATER	Hand-Dug Wells	76	94	80	28	108	46	78	96	606
WATER	Pipe System (Rural)	65	64	45	60	44	43	75	54	450
WATER	Pipe System (Small Town)	6	19	14	19	18	15	19	11	121
SOFTWARE	Water and Sanitation Committee	836	1003	1203	1444	1733	2079	2495	2994	13787
SOFTWARE	District Water and Sanitation Teams	8	9	11	14	16	20	23	28	129
SOFTWARE	Technicals Assistants	16	19	23	27	33	39	47	56	260
SOFTWARE	Small Towns Consultancy Services	8	9	11	14	16	20	23	28	129

Applying the national average cost of delivering facilities, the estimated cost for achieving 76 per cent water coverage for rural populations and small towns under community management is approximately US$ 125.1 million. The facilities cost is about $112 million, with software, costs of about $12 million. The annual distribution of costs is shown below:

Table 13: Cost of facilities for the 76 per cent coverage target

Facility	Facility @ 76%	2008	2009	2010	2011	2012	2013	2014	2015	**TOTAL**
WATER	Borehole	3,451,500	3,854,500	5,128,500	4,491,500	3,789,500	4,387,500	4,725,500	6,344,000	**36,172,500**
WATER	Hand-Dug Wells	228,000	282,000	240,000	84,000	324,000	138,000	234,000	288,000	**1,818,000**
WATER	Pipe System (Rural)	3,900,000	3,840,000	2,700,000	3,600,000	2,640,000	2,580,000	4,500,000	3,240,000	**27,000,000**
WATER	Pipe System (Small Town)	2,100,000	6,650,000	4,900,000	6,650,000	6,300,000	5,250,000	6,650,000	3,850,000	**42,350,000**
	Sub-total Water	9,679,500	14,626,500	12,968,500	14,825,500	13,053,500	12,355,500	16,109,500	13,722,000	**107,340,500**
	Project Management	483,975	731,325	648,425	741,275	652,675	617,775	805,475	686,100	**5,367,025**
	Hardware sub-total	**10,163,475**	**15,357,825**	**13,616,925**	**15,566,775**	**13,706,175**	**12,973,275**	**16,914,975**	**14,408,100**	**112,707,525**
SOFTWARE	Water and Sanitation Committee	501,600	601,800	721,800	866,400	1,039,800	1,247,400	1,497,000	1,796,400	**8,272,200**
SOFTWARE	District Water and Sanitation Teams	4,000	4,500	5,500	7,000	8,000	10,000	11,500	14,000	**64,500**
SOFTWARE	Technical Assistance	16,000	19,000	23,000	27,000	33,000	39,000	47,000	56,000	**260,000**
SOFTWARE	Small Towns Consultancy Services	240,000	270,000	330,000	420,000	480,000	600,000	690,000	840,000	**3,870,000**
	Sub-total software	**761,600**	**895,300**	**1,080,300**	**1,320,400**	**1,560,800**	**1,896,400**	**2,245,500**	**2,706,400**	**12,466,700**
	TOTAL COST @ 76%	**10,925,075**	**16,253,125**	**14,697,225**	**16,887,175**	**15,266,975**	**14,869,675**	**19,160,475**	**17,114,500**	**125,174,225**

The GPRS II scenario: Water coverage target of 85 per cent

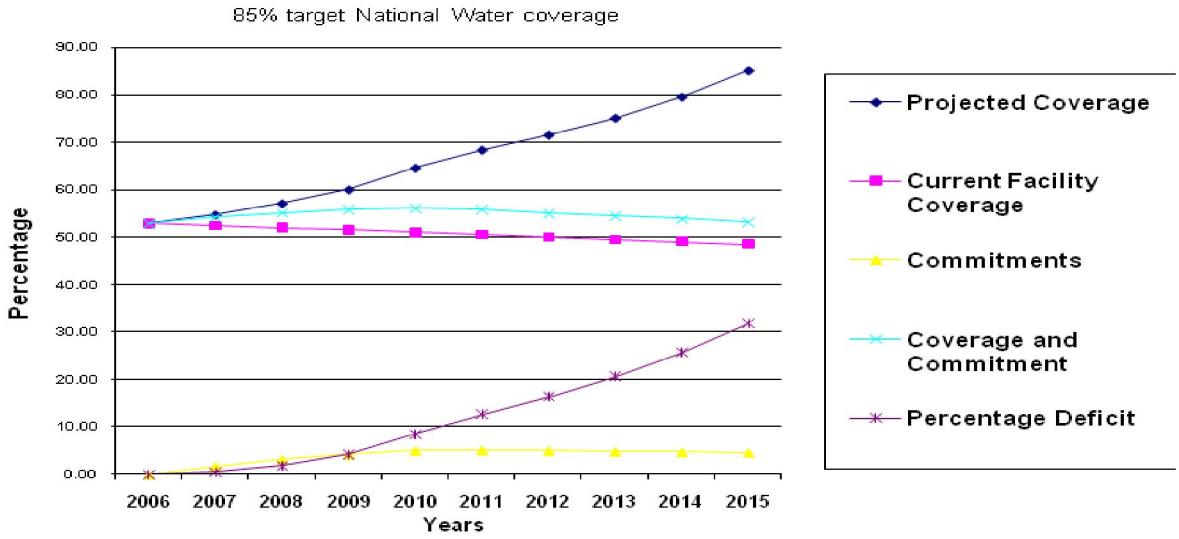
The GPRS II incorporates a water coverage target 85 per cent. The table for the implementation path shows that the deficit is 31.81 per cent over the eight-year period of the SIP. The implementation path is derived as shown in Table 14, below.

Table 14: The implementation path for the GPRS II coverage target

Year	Projected Coverage	ExistingCoverage	Commitments	Expected coverage	
2006	52.86	52.86	0.00	52.86	0.00
2007	54.73	52.40	1.75	54.15	0.58
2008	57.07	51.94	3.17	55.11	1.97
2009	60.00	51.47	4.23	55.70	4.30
2010	64.55	50.99	5.06	56.05	8.50
2011	68.33	50.51	5.16	55.67	12.67
2012	71.49	50.01	5.04	55.05	16.44
2013	75.03	49.52	4.91	54.43	20.61
2014	79.46	49.02	4.79	53.81	25.66
2015	85.00	48.51	4.67	53.19	31.81

The graphical representation of the 85 per cent target is as follows.

Figure 2: The GPRS II path



Costing the GPRS II scenario

The table showing the additional facilities required to meet the projected 85 per cent target is shown below.

Table 15: Facilities delivery requirement for the GPRS II target

Facility	Facility	2008	2009	2010	2011	2012	2013	2014	2015	TOTAL
WATER	Borehole	422	531	593	1,022	923	819	921	1,124	6,355
WATER	Hand-Dug Wells	0	76	94	186	124	134	130	166	910
WATER	Pipe System (Rural)	42	65	64	65	58	57	60	67	478
WATER	Pipe System (Small Town)	13	6	19	15	21	17	15	18	124
SOFTWARE	Water and Sanitation Committee	721	865	1,038	1,246	1,495	1,794	2,153	2,584	11,896
SOFTWARE	District Water and Sanitation Teams	7	8	9	11	14	16	20	23	108
SOFTWARE	Technicals Assistants	13	16	19	23	27	33	39	47	217
SOFTWARE	Small Towns Consultancy Services	7	8	9	11	14	16	20	23	108

The additional cost for exercising this option is US$ 132.6 million, distributed as US$121.9 million for hardware costs and $10.6 million for software costs, detailed in the table below.

Table 16: Cost of facilities for the GPRS II target

Facility	Facility @ 85%	2008	2009	2010	2011	2012	2013	2014	2015	TOTAL
WATER	Borehole	2,743,000	3,451,500	3,854,500	6,643,000	5,999,500	5,323,500	5,986,500	7,306,000	**41,307,500**
WATER	Hand-Dug Wells	0	228,000	282,000	558,000	372,000	402,000	390,000	498,000	**2,730,000**
WATER	Pipe System (Rural)	2,520,000	3,900,000	3,840,000	3,900,000	3,480,000	3,420,000	3,600,000	4,020,000	**28,680,000**
WATER	Pipe System (Small Town)	4,550,000	2,100,000	6,650,000	5,250,000	7,350,000	5,950,000	5,250,000	6,300,000	**43,400,000**
	Sub-total Water	9,813,000	9,679,500	14,626,500	16,351,000	17,201,500	15,095,500	15,226,500	18,124,000	116,117,500
	Project Management	490,650	483,975	731,325	817,550	860,075	754,775	761,325	906,200	**5,805,875**
	Hardware sub-total	**10,303,650**	**10,163,475**	**15,357,825**	**17,168,550**	**18,061,575**	**15,850,275**	**15,987,825**	**19,030,200**	**121,923,375**
SOFTWARE	Water and Sanitation Committee	432,600	519,000	622,800	747,600	897,000	1,076,400	1,291,800	1,550,400	**7,137,600**
SOFTWARE	District Water and Sanitation Teams	3,500	4,000	4,500	5,500	7,000	8,000	10,000	11,500	**54,000**
SOFTWARE	Technical Assistance	13,000	16,000	19,000	23,000	27,000	33,000	39,000	47,000	**217,000**
SOFTWARE	Small Towns Consultancy Services	210,000	240,000	270,000	330,000	420,000	480,000	600,000	690,000	**3,240,000**
	Sub-total software	**659,100**	**779,000**	**916,300**	**1,106,100**	**1,351,000**	**1,597,400**	**1,940,800**	**2,298,900**	**10,648,600**
	TOTAL COST @ 85%	**10,962,750**	**10,942,475**	**16,274,125**	**18,274,650**	**19,412,575**	**17,447,675**	**17,928,625**	**21,329,100**	**132,571,975**

Chapter 5

The Medium-Term Programme, 2008 - 2012

The CWSA's implementation horizon is five years and so the eight-year SIP is considered lengthy for implementation. Management has decided that carving out two medium-term programmes out of the 2008 – 2015 period, is the ideal solution.

The first of the five-year programmes is the implementation path, described as the Medium-Term Plan (MTP) is for the period up to 2012.

The target water coverage for the MTP is linked to the SIP scenarios. For the modified MDG scenario, the target for 2012 is 68 per cent water coverage. The implementation path, water facility and service requirements and costs are shown below.

Table 17: Facilities deficit at the MDG coverage target

Year	Projected Coverage	Existing Coverage	Commitments	Expectedcoverage	Deficit
2006	52.86	52.86	0.00	52.86	0.00
2007	54.73	52.40	1.75	54.15	0.58
2008	57.07	51.94	3.17	55.11	1.97
2009	60.00	51.47	4.23	55.70	4.30
2010	63.16	50.99	5.06	56.05	7.12
2011	65.80	50.51	5.16	55.67	10.13
2012	68.00	50.01	5.04	55.05	12.95

Figure 3: MDG Implementation path for the MTP

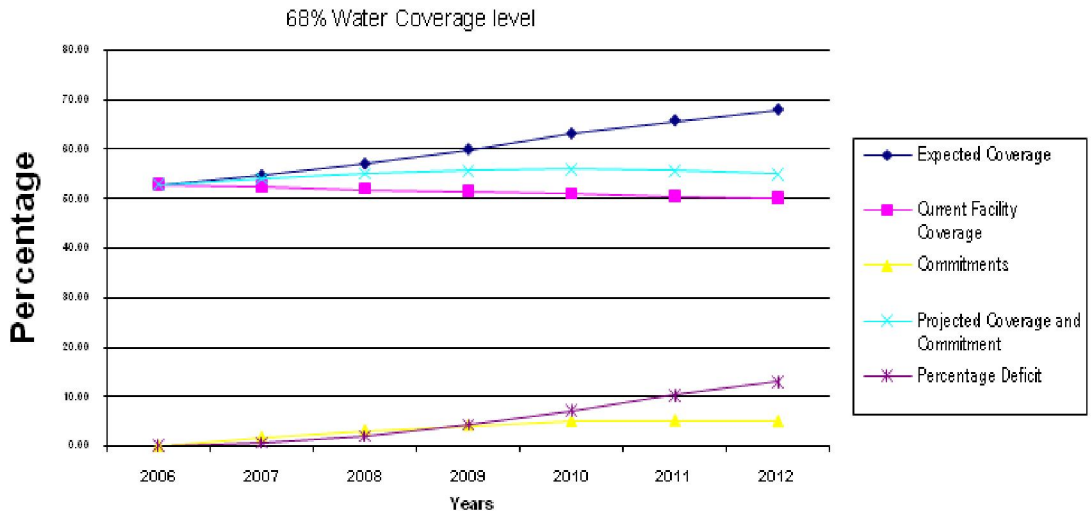


Table 18: MTP Facilities delivery to achieve MDG coverage

Facility Type	Facility	2008	2009	2010	2011	2012	TOTAL
WATER	Borehole	531	593	789	691	583	3,187
WATER	Hand-Dug Wells	76	94	80	28	108	386
WATER	Pipe System (Rural)	65	64	45	60	44	278
WATER	Pipe System (Small Town)	6	19	14	19	18	76
SOFTWARE	Water and Sanitation Committee	836	1,003	1,203	1,444	1,733	6,219
SOFTWARE	District Water and Sanitation Teams	8	9	11	14	16	58
SOFTWARE	Technicals Assistants	16	19	23	27	33	118
SOFTWARE	Small Towns Consultancy Services	8	9	11	14	16	58

The additional investment needed for achieving the 68 per cent water coverage is estimated as approximately US$ 74 million, detailed as follows.

Table 19: MTP Cost of facilities to achieve 72% coverage

Facility	Facility @ 68%	2008	2009	2010	2011	2012	TOTAL
WATER	Borehole	3,451,500	3,854,500	5,128,500	4,491,500	3,789,500	**20,715,500**
WATER	Hand-Dug Wells	228,000	282,000	240,000	84,000	324,000	**1,158,000**
WATER	Pipe System (Rural)	3,900,000	3,840,000	2,700,000	3,600,000	2,640,000	**16,680,000**
WATER	Pipe System (Small Town)	2,100,000	6,650,000	4,900,000	6,650,000	6,300,000	**26,600,000**
	Sub-total Water	9,679,500	14,626,500	12,968,500	14,825,500	13,053,500	**65,153,500**
	Project Management	483,975	731,325	648,425	741,275	652,675	**3,257,675**
	Hardware sub-total	**10,163,475**	**15,357,825**	**13,616,925**	**15,566,775**	**13,706,175**	**68,411,175**
SOFTWARE	Water and Sanitation Committee	501,600	601,800	721,800	866,400	1,039,800	**3,731,400**
SOFTWARE	District Water and Sanitation Teams	4,000	4,500	5,500	7,000	8,000	**29,000**
SOFTWARE	Technical Assistance	16,000	19,000	23,000	27,000	33,000	**118,000**
SOFTWARE	Small Towns Consultancy Services	240,000	270,000	330,000	420,000	480,000	**1,740,000**
	Sub-total software	**761,600**	**895,300**	**1,080,300**	**1,320,400**	**1,560,800**	**5,618,400**
	TOTAL COST @ 68%	**10,925,075**	**16,253,125**	**14,697,225**	**16,887,175**	**15,266,975**	**74,029,575**

Given the alternative scenario of financing a more ambitious plan, the water coverage target of 72 per cent (linked to the 85 per cent target) by 2012 is achieved as follows:

Table 20: MTP Facilities deficit at GPRS II coverage

Year	Projected Coverage	Existing Coverage	Commitments	Expected coverage	Deficit
2006	52.86	52.86	0.00	52.86	0.00
2007	54.73	52.40	1.75	54.15	0.58
2008	57.07	51.94	3.17	55.11	1.97
2009	60.00	51.47	4.23	55.70	4.30
2010	64.55	50.99	5.06	56.05	8.50
2011	68.33	50.51	5.16	55.67	12.67
2012	72.00	50.01	5.04	55.05	16.44

The additional cost for achieving the more ambitious 72 per cent medium-term option is approximately US$82.3 million, with the physical and cost details set out in Tables 21 and 22, below.

Table 21: MTP Facilities requirement for the GPRS II coverage

Facility Type	Facility	2008	2009	2010	2011	2012	TOTAL
WATER	Borehole	531	593	1022	923	819	3888
WATER	Hand-Dug Wells	76	94	186	124	134	614
WATER	Pipe System (Rural)	65	64	65	58	57	309
WATER	Pipe System (Small Town)	6	19	15	21	17	78
SOFTWARE	Water and Sanitation Committee	865	1038	1246	1495	1794	6438
SOFTWARE	District Water and Sanitation Teams	8	9	11	14	16	58
SOFTWARE	Technicals Assistants	16	19	23	27	33	118
SOFTWARE	Small Towns Consultancy Services	8	9	11	14	16	58

Table 22: MTP Facilities cost for the GPRS II coverage

Facility	Facility @ 72%	2008	2009	2010	2011	2012	**TOTAL**
WATER	Borehole	3,451,500	3,854,500	6,643,000	5,999,500	5,323,500	**25,272,000**
WATER	Hand-Dug Wells	228,000	282,000	558,000	372,000	402,000	**1,842,000**
WATER	Pipe System (Rural)	3,900,000	3,840,000	3,900,000	3,480,000	3,420,000	**18,540,000**
WATER	Pipe System (Small Town)	2,100,000	6,650,000	5,250,000	7,350,000	5,950,000	**27,300,000**
	Sub-total Water	9,679,500	14,626,500	16,351,000	17,201,500	15,095,500	**72,954,000**
	Project Management	483,975	731,325	817,550	860,075	754,775	**3,647,700**
	Hardware sub-total	**10,163,475**	**15,357,825**	**17,168,550**	**18,061,575**	**15,850,275**	**76,601,700**
SOFTWARE	Water and Sanitation Committee	519,000	622,800	747,600	897,000	1,076,400	**3,862,800**
SOFTWARE	District Water and Sanitation Teams	4,000	4,500	5,500	7,000	8,000	**29,000**
SOFTWARE	Technical Assistance	16,000	19,000	23,000	27,000	33,000	**118,000**
SOFTWARE	Small Towns Consultancy Services	240,000	270,000	330,000	420,000	480,000	**1,740,000**
	Sub-total software	**779,000**	**916,300**	**1,106,100**	**1,351,000**	**1,597,400**	**5,749,800**
	TOTAL COST @ 72%	**10,942,475**	**16,274,125**	**18,274,650**	**19,412,575**	**17,447,675**	**82,351,500**

Chapter 6

Financing the Five Year Medium-Term Programme,

The financial statements of the CWSA provide a consistent account of the activities financed through the agency. The summary of the financial statements for the period 2001 to 2006 is provided below.

Table 23: Summary of financial performance, 2001 - 2006

ACTUAL	2001	2002	2003	2004	2005	2006
	¢ '000	¢ '000	¢ '000	¢ '000	¢ '001	¢ '000
Income sources						
GoG payment	9,031,471	8,331,487	7,813,090	10,102,345	14,177,613	16,151,459
Internally Generated Funds	2,391,285	2,545,777	5,272,050	7,870,968	5,537,837	5,268,088
Donor funding	4,097,474	28,040,562	53,737,059	85,628,389	54,183,975	66,423,277
2% Water levy	1,300,000	500,000	5,400,000	5,000,000	5,500,000	5,500,000
Community contribution	0	193,730	582,601	357,096	1,172,543	-321,889
Exchange difference	85,850		785,148	277,974	63,932	514,003
Total	**16,906,080**	**39,611,556**	**73,589,948**	**109,236,772**	**80,635,900**	**93,534,938**
Expenditure						
Personnel emoluments	3,285,758	5,702,542	7,184,637	6,895,006	8,880,126	11,052,875
Administration expenses	5,476,575	6,523,352	7,517,667	9,261,185	14,534,730	16,213,539
Service expenses	1,434,692	4,070,958	6,018,697	12,522,804	10,101,775	7,648,945
Project expenditure	12,735,877	22,552,858	48,289,708	93,723,957	52,073,099	65,495,367
Total	**22,932,902**	**38,849,710**	**69,010,709**	**122,402,952**	**85,589,730**	**100,410,726**
Surplus / Deficit	**-6,026,822**	**761,846**	**4,579,239**	**-13,166,180**	**-4,953,830**	**-6,875,788**
Source: CWSA Annual Accounts, 2001 - 2006						

The statements show that losses are being accumulated. Part of the reason for this is that funding from the Government of Ghana and the generation of internal funds are inadequate to meet the personnel and administrative obligations of the agency.

Table 24: Financing of core activities

	2001	2002	2003	2004	2005	2006
	¢ '000	¢ '000	¢ '000	¢ '000	¢ '001	¢ '000
Income						
GoG payment	9,031,471	8,331,487	7,813,090	10,102,345	14,177,613	16,151,459
Internally Generated Funds	2,391,285	2,545,777	5,272,050	7,870,968	5,537,837	5,268,088
Core income	**11,422,756**	**10,877,264**	**13,085,140**	**17,973,313**	**19,715,450**	**21,419,547**
Expenditure						
Personnel emoluments	3,285,758	5,702,542	7,184,637	6,895,006	8,880,126	11,052,875
Administration expenses	5,476,575	6,523,352	7,517,667	9,261,185	14,534,730	16,213,539
Core costs	**8,762,333**	**12,225,894**	**14,702,304**	**16,156,191**	**23,414,856**	**27,266,414**
Funding Excess / Shortfall	**2,660,423**	**-1,348,630**	**-1,617,164**	**1,817,122**	**-3,699,406**	**-5,846,867**

With regard to the adequacy of funding provided by the Government of Ghana, the Letter of Sector Policy dated 6th August 1999 to the World Bank from the Minister for Works and

Housing stated: "Central Government will cover the core costs of CWSA's operations by allocating at least ¢5 billion per year, indexed to 1999."

Using the average inflation rate of the Consumer Price Index to evaluate GoG's contribution, it can be demonstrated that transfers to CWSA for the period 2001-2006 are substantially lower than the commitment made to the World Bank in respect of CWSA's core costs. Core costs comprise CWSA's personnel and administrative budget.

The table below shows that based on an evaluation of the 1999 commitment, the accumulated shortfall in expected GoG funding over the last six years is approximately ¢15.5 billion (or 19 per cent).

Table 25: Estimate of shortfall in provision of GoG core funds to CWSA, 2001 - 2006

Year	Actual GoG transfer	Average rate of inflation	Equivalent value	Shortfall	Shortfall
	¢	(%)	¢	¢	%
1999	5,500,000,000	12.45%	5,500,000,000		
2000		25.20%	6,184,750,000		
2001	**9,031,471,000**	**32.90%**	**7,743,307,000**	**1,288,164,000**	**16.64%**
2002	**8,331,487,000**	**14.80%**	**10,290,855,003**	**-1,959,368,003**	**-19.04%**
2003	**7,813,090,000**	**26.70%**	**11,813,901,543**	**-4,000,811,543**	**-33.87%**
2004	**10,102,345,000**	**12.60%**	**14,968,213,256**	**-4,865,868,256**	**-32.51%**
2005	**14,177,613,000**	**15.10%**	**16,854,208,126**	**-2,676,595,126**	**-15.88%**
2006	**16,151,459,000**	**10.90%**	**19,399,193,553**	**-3,247,734,553**	**-16.74%**
TOTAL	**65,607,465,000**		**81,069,678,480**	**-15,462,213,480**	**-19.07%**

The viability of CWSA in terms of its core operations depends on the GoG fulfilling its obligations. Given that most investment in the rural water sector is funded by donors it is not unreasonable to expect that the GoG should meet its stated policy with regard to the funding of CWSA core costs.

CWSA's financial statements do not provide a full indication of the value of investment undertaken, as some donors retain direct responsibility for disbursements for capital items and consultancies. The statements also do not include the disbursement of funds for investment of GoG funds earmarked for guinea worm endemic areas, managed by the District Assemblies. Therefore developing a complete record of funds invested in water and sanitation facilities require extensive and direct contact with many agencies for the record of funds disbursed directly to projects.

Budget and financing the CWSA

The budget is an important aspect of the challenges for the future and the proposals that have been made for restructuring the CWSA to meet anticipated challenges of meeting the MDG, at the minimum. Training requirements for additional professional staff to be recruited and the adjustment of the salary to retain quality staff are together expected to increase personnel emoluments by about 35 per cent from 2007.

About 20 per cent of administrative costs are for allowances and other items related to personnel emoluments. These are currently met from sources outside the GoG. If staff costs are estimated to rise by 35 per cent from the norm, applying this factor to the 20 per cent element of administrative costs would lead to a net increase of 7 per cent in administrative costs.

In the 2007 budget proposals, about 50 per cent of administrative costs are related to transport. This depends mostly on the number of vehicles available and supervisory travel, which is expected to rise with the increased numbers of professional staff. An increase of 5 per cent in transport costs has been estimated, which would increase overall administrative costs by 2.5 per cent.

Taking the above factors together gives an increase of 12 per cent in administrative costs. This has been applied to the norm.

Training and staff development

The mission of the CWSA is to manage the NCWSP through providing support to District Assemblies for the provision of water and sanitation facilities and health education for improved hygiene behaviour.

To undertake this responsibility, the agency has put together a multi-disciplinary staff combining technical competence with management and professional training.

Staff development is necessary to maintain the high quality of staff. Currently training needs are provided through project funding which biases the training provided to the technical and engineering fields and to the existence of donor-funded projects. To enhance the skills and knowledge of existing staff and raise the quality of new entrants, it is necessary to centralise and plan training and staff development. The raising of the water coverage rates requires additional staff to manage the training programmes at the District level.

A comprehensive programme has been drawn up and costs $250,000 per annum and the cedi equivalent has been added to the services budget vote.

Appendix Tables A to D show the process of determining the medium-term budget of the CWSA.

The medium-term budget projected for the Agency is shown below. It does not include the increase required to finance the investment in facilities to achieve the target water coverage rate.

To this are added the internally generated funds which average about 12.3 per cent of CWSA total budget over the period 2001 – 2006.

How will the additional funding be found?

To provide greater financial certainty for CWSA and assure transparency in the use of funds and facilitate better planning and financial management, it may be necessary to commence the implementation of the Medium-Term Plan with the formalisation of the Community Water Fund made up of contributions from the established sources:

- 2 per cent charge levied on urban water users.
- Funding from donors based on an agreed percentage of MDBS disbursements in a year.
- Transfers from the Consolidated Fund to fully fund personnel, administrative costs and a significant share of investment in facilities.
- Any other financial support from GoG, donors, NGOs or other organisations.

The proposal will require that existing project agreements which facilitate the Management Fee will be re-negotiated to assure that over the long-term there is no diminution of funding. The major risk of the proposal is that the GoG may fail to fully meet its obligations.

Financing the SIP

The budget outlook for the period 2008 – 2012 was estimated assuming that all the regular activities of the agency are included in their annual budgets. Therefore only new activities that had not featured in previous budgets were separately catered for.

The medium-term financing outlook was conservatively estimated with respect to the level of Government support for the agency. The medium-term budget scenario was based on the average ratio of CWSA's budget allocation to the total discretionary budget of the Government (narrow coverage basis) for the period 2001 to 2007. The disaggregated ratio for the four items of expenditure was applied to the Government's medium-term proposals for discretionary expenditure for 2008 and 2009. For the post-2009 period, discretionary expenditure growth equal to the growth rate of nominal GDP (10 per cent inflation and 6 per cent real GDP growth) was used.

The anticipated additional staffing levels, staff training and increases in administrative cost were allowed for.

On the basis of the commitments made by donors, projected donor support for the period was applied.

Table 26 below examines the projected financing requirements of CWSA for the medium-term, at the lower and higher coverage targets.

Table 26: Medium-Term financing requirements

Budget Projection (¢)	2008	2009	2010	2011	2012
Personnel emoluments	27,148,262,110	31,401,668,565	36,614,345,547	42,692,326,908	49,779,253,175
Administration expenses	15,122,314,040	17,491,576,128	20,395,177,765	23,780,777,274	27,728,386,301
Service expenditure	12,138,746,484	14,040,563,346	16,371,296,861	19,088,932,140	22,257,694,876
Investment expenditure	89,621,985,849	103,663,353,641	120,871,470,345	140,936,134,422	164,331,532,736
Total GoG contribution	**144,031,308,483**	**166,597,161,679**	**194,252,290,518**	**226,498,170,744**	**264,096,867,088**
Internally Generated Funds	17,658,238,420	20,424,812,022	23,815,330,818	27,768,675,733	32,378,275,905
Donor commitments	560,380,604,000	369,040,000,000	355,600,000,000	176,400,000,000	126,000,000,000
BROAD Projected (without new investment)	**722,070,150,903**	**556,061,973,701**	**573,667,621,336**	**430,666,846,477**	**422,475,142,993**
Additional requirement to achieve 68% target	101,765,017,500	151,349,362,500	169,954,245,000	180,536,947,500	162,263,377,500
Additional Sanitation requirements	30,529,505,250	45,404,808,750	50,986,273,500	54,161,084,250	48,679,013,250
Projected total cost for achieving 68%	**854,364,673,653**	**752,816,144,951**	**794,608,139,836**	**665,364,878,227**	**633,417,533,743**
Additional requirement to achieve GPRS II target	101,603,197,500	151,154,062,500	136,684,192,500	157,050,727,500	141,982,867,500
Additional Sanitation requirements	30,480,959,250	45,346,218,750	41,005,257,750	47,115,218,250	42,594,860,250
Projected total cost for achieving GPRS II target	**854,154,307,653**	**752,562,254,951**	**751,357,071,586**	**634,832,792,227**	**607,052,870,743**

Cost sharing

On the basis of projected medium-term financing for the GPRS II target, CWSA is seeking GoG's initial commitment to provide about 17 per cent of annual costs, rising to 43.5 per cent in 2012, if no new commitments are made by the Development Partners. The Development Partners are already committed to providing over 65 per cent of costs in 2008, reducing to below 21 per cent in 2012. The source for a substantial portion of financing (approximat ely 15.5 per cent in 2008) is yet to be identified. The unfunded share of costs increases to 30per cent in 2012. The medium-term challenge is to identify sources to finance the investments to achieve, at least, the less ambitious modified MDG target.

Table 27: Cost sharing for the MTP

Budget Projection (GPRS II target)	2008	2009	2010	2011	2012
Personnel emoluments	3.18%	4.17%	4.87%	6.72%	8.20%
Administration expenses	1.77%	2.32%	2.71%	3.75%	4.57%
Service expenditure	1.42%	1.87%	2.18%	3.01%	3.67%
Investment expenditure	10.49%	13.77%	16.09%	22.20%	27.07%
Total GoG contribution	16.86%	22.14%	25.85%	35.68%	43.50%
Internally Generated Funds	2.07%	2.71%	3.17%	4.37%	5.33%
Donor commitments	65.61%	49.04%	47.33%	27.79%	20.76%
BROAD Projected (without new investment)	84.54%	73.89%	76.35%	67.84%	69.59%
Additional new water investment to achieve GPRS II target	11.90%	20.09%	18.19%	24.74%	23.39%
Additional Sanitation requirements	3.57%	6.03%	5.46%	7.42%	7.02%
TOTAL new Investment for the GPRS II target	**15.46%**	**26.11%**	**23.65%**	**32.16%**	**30.41%**

The burden sharing targets between Government and Development Partners for the modified MDG targets are identical to the GPRS II scenario for the first two years of the MTP. The investment gap is defined as the new investments in water and sanitation facilities required to achieve the selected target coverage rate.

Budget Projection for achieving 68% target	**2008**	**2009**	**2010**	**2011**	**2012**
Personnel emoluments	3.18%	4.17%	4.61%	6.42%	7.86%
Administration expenses	1.77%	2.32%	2.57%	3.57%	4.38%
Service expenditure	1.42%	1.87%	2.06%	2.87%	3.51%
Investment expenditure	10.49%	13.77%	15.21%	21.18%	25.94%
Total GoG contribution	**16.86%**	**22.13%**	**24.45%**	**34.04%**	**41.69%**
Internally Generated Funds	2.07%	2.71%	3.00%	4.17%	5.11%
Donor commitments	65.59%	49.02%	44.75%	26.51%	19.89%
BROAD Projected (without new investment)	**84.52%**	**73.86%**	**72.20%**	**64.73%**	**66.70%**
Additional water requirement for the 68% target	11.91%	20.10%	21.39%	27.13%	25.62%
Additional Sanitation requirements	3.57%	6.03%	6.42%	8.14%	7.69%
TOTAL new Investment for the 68% target	**15.48%**	**26.14%**	**27.80%**	**35.27%**	**33.30%**

ANNEX A

Data Gathering and the creation of the database

The data gathering process for the SIP was carefully designed to address the various components needed to complete a comprehensive modelling process. The following key data needed to be collected for the SIP:

- List of communities,
- Populations of communities,
- Type, number and state of the facilities that are used in determining the facility coverage.
- Role of the RWSTs of CWSA in data gathering

The focus of the data gathering was the Regional Water and Sanitation Teams (RWSTs). Data relating to the communities and facilities was gathered by the RWSTs in consultation with District Water and Sanitation Teams (DWSTs) and the communities.

Due to the creation of new districts and the emergence of new communities or new boundaries of communities, Community data had to be gathered all over again. Facilities had to be checked and verified directly from the communities.

Source of Data

The following were the sources available to the RWSTs for completing the data.

- 2000 Population Census
- Data from previous SIPs
- The list of urban water supply systems
- Regional data on facilities constructed
- Data from Districts and communities on facilities

Organisational Structure for Communities

In order to be able to disaggregate the SIP data to any level in the national structure, the communities were organized into a structure that would allow for easy capture of data that would support this aggregation and to disaggregate the data and reports, if required.

The data were therefore organized by:

- Region
- District
- Town Area or Urban Council
- Community

To this end the list of all Districts (including the new Districts), organized according to their respective Regions, was obtained from the Ministry of Local Government, Rural

Development and Environment. The list of the Regions and their Districts was sent to the RWSTs of CWSA as the basis for gathering their data.

Additionally, available data existing about the communities was sent to the Districts. The data include community list from all previous data gathered on communities, head count data on communities, and other data sources of community data.

Reorganising the Communities

The task of the RWSTs was to consult their various Regions and Districts to produce the list of all the Town and Area Councils in the respective Districts by the District lists that was disseminated to them.

After the identification of the Town and Area Councils, the Communities that belong to such Town and Area Councils have to be identified and associated with the respective Town and Area Councils. All available data source were guides to this exercise.

Assigning Populations to the Communities

The RWSTs were to use two sets of data to provide the necessary data on the population of the communities. In the first instance there was the head count population figures and secondly the 2000 census population figures. Provision was made to maintain both the head count and the 2000 census population figures. The RWSTs were to identify the community in the 2000 population data and record the census population figures against it.

Gathering Water and Sanitation Facilities for the Communities

The next stage of the exercise was to collect data on the number of facilities per community. The data were gathered on the facilities were organized by the communities as follows:

Water Facilities

- Boreholes
- Hand Dug Wells
- Pipe Systems

Sanitation Facilities

- VIP
- KVIP
- Other sanitation facilities

Data Compilation

The data that were gathered from the RWSTs came in either MS-Excel or MS-Access formats. The data had to be verified to make sure that each community was associated to a Town or Area Council which in turn must belong to a District within the specified Region.

Identification codes were then generated for all the Town and Area Councils and also for all the Communities. At the end of this exercise each Community had a unique identity. These codes became the basis for the SIP evaluation and for aggregating to achieve the reporting structure in the SIP.

The next step was to associate the facility to the community and finally generate the identity of the facilities. These identities would be the means for the verification of individual facilities on the ground. The aim of this approach is to eliminate the possibility of using the number of facilities without being able to verify their actual existence.

Data Cleaning and Verification

The Ghana Statistical Services and the Ghana Water Company Limited are two key players whose input is necessary for determining the accuracy of the data collected. The Ghana Statistical Service is the sole agency for determining population numbers.

The Ghana Water Company Limited is the provider of water to large urban communities. Their services interlink with that of CWSA. It was therefore necessary to demarcate the two services carefully in order to avoid double counting in the provision of services.

Verification of Population figures with Ghana Statistical Services

Because of the issues of international credibility with the use of population figures, it was deemed crucial to address the problems associated with the 2000 Population Census. To this end consultations had to be made with the Ghana Statistical Services. There were no less than three meetings with the authorities of the GSS to this effect.

Addressing the Problems Encountered with Ghana Statistical Services Population figures

To address the population issues in the model, the following considerations were made. Three population fields are used in the model. These fields are:

- 2000 Census Population
- Head Count Population
- Working Population

The working population is derived in the following manner; where the census population is available (and can be associated with a distinct Community) it becomes the working population. For all the communities that do not have the census population, the difference of the total District population, and those that have been assigned, is distributed among them by the proportion on their head count values. This is to ensure that no District technically exceeds the population specified for it by the Census Office. The Working Population is subsequently used in the SIP calculation.

A module is incorporated in the system for use by the RWSTs and the DWSTs who are conversant with the community names (and alternate names). The module is used to identify the Enumeration Areas in the census population and correct the working populations of all the communities that can be identified. This module puts the census population side by side

the data in the system in three different formats. The most convenient format was used to identify Enumeration Area or areas that constitute a community and locate the community and enter the population or sums of population for that community.

Elimination of Urban Water Supply Communities in Consultation with Ghana Water Company Limited

To determine the coverage attributable to CWSA, it was important to separate the communities which are the responsibility of GWCL from those of CWSA. The SIP would then capture the true community coverage area, which is the responsibility of CWSA.

This was done by identifying the individual communities that are served by the water supply systems of GWCL from data obtained from the GWCL Head Office of about eighty (80) water supply systems under the management of GWCL. This list assisted in the identification of the communities that are served by GWCL. Once these communities were identified, they were removed from the list of communities to be served by CWSA.

The RWSTs were asked to consult the Regional and District offices of the GWCL to identify the communities that might have been captured in the CWSA data base but whose water is supplied from GWCL's water supply systems.

Review of Data by the RWSTs

The final phase of the data gathering process was the review of all the data from all the stakeholders and consultation made with other players in the field with the RWSTs. To this end a module was incorporated in the system to help the RWSTs verify the populations

Modelling the Strategic Investment Plan

The SIP is designed more precisely to assist CWSA to serve the following purpose:

i. Define the current situation within the coverage area of CWSA.

ii. Stipulate different scenarios for the future course of development for CWSA.

iii. Designate anticipated demand for the various technologies based on a criterion of population sizes for each of the scenarios.

iv. Provide and projects population information over the whole SIP period.

v. Determine resources and cost estimates to fulfill these requirements.

Main Assumptions of the model

The following assumptions were made:

i. The population growth rate is constant over the programmed period and is based on the rate given by the Ghana Statistical Service in the 2000 census report

ii. Prices and organizational structures remain unchanged over the SIP period.

iii. The technology prescribed would have corresponding water source for the provision of that facility. In real situations if the source of water does not meet requirements for the

provision of the facility, it may not be possible to put in the facility or rather a more feasible water facility could be put in place rather than that which is prescribed by the system

iv. The Communities, Town/Area Councils and Districts would be ready and prepared to demand the facility.

v. ESA and GoG funding would be available at the times demanded for the physical facilities to be provided.

vi. Private sector Capacity would be available to deliver the facilities.

Scenario Building in the model

The model allows the usage of parameters for building of various scenarios. The scenario is built on the following parameters. The Population is the basis for the coverage and is the target of any investment plan. The sub-parameters (issues) that bears on the population are:

i. The definition of what the community is. The communities defined for coverage are not identical to that defined by the population census. The communities are those that can access the facilities provided.

ii. The population of the communities as the basis for any population projection.

iii. The year in which the population was taken. This forms the basis for growth projection.

iv. The population growth rate. The population growth rates have been prioritized in the following order, Community, District, Region and National. In the case of the absence of the growth use for a particular level, the next higher priority is chosen.

v. Within the current parameters only National and Regional population growth rates are available. Since the Regional growth rate is of higher priority between the two, it is that which has been use for the current calculations.

vi. The population to be provided with facilities in order to get to a set target. This develops into the deficit population to be served and other derivatives.

The Facilities provide the following considerations

i. The size of population the facility can cover.

ii. The recommended facility or technology for the community based on the projected population size.

iii. The unit cost of providing the facility.

iv. The Readiness Factor takes care of other issues which may be of a qualitative nature and that may not readily respond to a strict mathematical evolution. Issues that come into play here include:

- The readiness of the communities to demand facilities.
- The provision of facilities are demand driven and thus unless the community demands the facility, the facility could not be imposed on them.
- Their readiness also depends on their ability to pay their statutory contributions.

- The readiness of the private sector to deliver the facilities. This includes the capacity of the drillers and the availability of the rigs and other equipment
- The Availability of the sources of water for the delivery of the facility that can support the community for the planned period.
- The disbursement procedure that will deliver the facilities as planned. Coverage is not determined by the quantum of money spent but on the provision of the physical facilities.
- Other factors that may not have been considered e.g. political direction, management policy change etc.

The population factor and the facility factor all respond to perfect mathematical models.

Limitations of the Model

It is recognized that the SIP model would suffer from a number of deficiencies:

A. The model is based on mathematical parameters and in many cases would deviate from real world events.

B. The system is heavily mathematical and needs a more social approach for implementation.

C. Population data had inherent problems from the Census office of GSS. This does not make it possible to identify the population of all the communities.

D. The population figures and community demarcations available from the 2000 population census do not reflect the community definition that can access the facility, as is the basis for community demarcation by CWSA.

E. Certain communities may demand and may be capable of paying for superior facilities than that which may be prescribed.

F. A facility may be prescribed for a community that may not be technically feasible to construct.

Key findings during the Data Gathering and Modelling Process

The Ghana Statistical Service delimitation of urban and rural settlements differs from what is identified as urban and rural water supply systems. Where as by definition of urban in the Ghana Statistical Service census population means a community with population equal or above five thousand (5,000), it is observed that there are many communities with populations much higher that 5,000, in fact some close to 50,000 which operate under the Water Boards through Community Management.

The population covered by the CWSA systems exceeds that of the urban population stated the GSS population publications. Many communities classified as urban are not supplied with water by the urban water supply system.

Different publications of the Ghana Statistical Service, Census Division, group the communities differently, meaning there is no unique method of determining clearly the demarcation of urban and rural communities. For example, in some publications the whole of AMA is considered a single urban community while in others the subdivisions and/or the suburbs of AMA are considered as different communities. In such a case the whole is urban while some of the parts are rural.

The best approach to separate the urban and rural water supply systems were used in the model. During the exercise, it was not possible to obtain the list of communities supplied by the urban water supply systems, either at the Regional or District levels. The separations were done by the RWSTs from the consultations they made with the Regional staff of the GWCL.

APPENDIX TABLES

Table 1: NCWSP targets and delivery of facilities and services, 2001 - 2006

THE NATIONAL COMMUNITY WATER AND SANITATION PROGRAMME (NCWSP)

Facilities and service: Targets and delivery: 2001 to 2006

System type	2001 Target	2001 Actual	2002 Target	2002 Actual	2003 Target	2003 Actual	2004 Target	2004 Actual	2005 Target	2005 Actual	2006 Target	2006 Actual
Boreholes – new	550	198	1,500	622	1,600	1,290	2,000	2,098	1,647	1,112	1,152	1,325
Hand dug wells – new	50	629	240	65	220	61	100	64	35	1	49	9
Total – new water points	**600**	**827**	**1,740**	**687**	**1,820**	**1,351**	**2,100**	**2,162**	**1,682**	**1,113**	**1,201**	**1,334**
Small Communities pipes –	10	92	20	4	15	19	10	40	1	2	-	5
Small Towns pipes – new	10	63	20	25	48	46	40	57	27	2	89	12
Total – new pipe systems	**20**	**155**	**40**	**29**	**63**	**65**	**50**	**97**	**28**	**4**	**89**	**17**
Hand dug wells – rehab	-	6	-	2	-	-	-	-	-	6	-	9
Boreholes – rehab	500	606	140	407	100	115	130	85	49	31	118	77
Conversions	20	932	5	362	-	-	-	-	-	31	-	4
Total – rehabilitation	**520**	**1,544**	**145**	**771**	**100**	**115**	**130**	**85**	**49**	**68**	**118**	**90**
Sanitation												**-**
Household latrines	3,400	10,295	8,000	4,275	10,000	10,485	10,000	5,501	4,655	3,092	6,179	5,295
Institutional latrines (KVIP)	150	679	260	144	-	246	5,000	465	539	77	500	230
Total – latrines	**3,550**	**10,974**	**8,260**	**4,419**	**10,000**	**10,731**	**15,000**	**5,966**	**5,194**	**3,169**	**6,679**	**5,525**

Achievement in capacity building: 2001 to 2006

Stakeholder	2001 Target	2001 Actual	2002 Target	2002 Actual	2003 Target	2003 Actual	2004 Target	2004 Actual	2005 Target	2005 Actual	2006 Target	2006 Actual
Districts in Program	8	4	10	14	107	107	109	109	128	132	132	134
Communities in Program	740	1,049	1,500	2,042	1,050	1,604	2,000	765	689	587	693	782
WATSANs	700	3,795	2,000	924	1,550	1,958	1,500	1,901	1,121	769	1,004	813
EHA's	-	-	-	-	-	-	10	7	-	-	31	18
WSDBs	40	115	60	25	65	88	80	41	36	28	53	3
HDW contractors	30	147	60	29	20	103	70	4	10	-	40	
Area mechanics	120	300	100	108	100	661	100	79	90	10	21	42
Pump caretakers	1,400	6,184	3,700	887	-	1,242	4,000	2,456	2,664	820	1,784	1,513
Latrine artisans	700	1,210	700	642	265	661	900	265	135	143	62	327
Technical Assistance Firms		37		46		56	90	54	54	22	45	19

Source: CWSA Annual Reports, 2001 - 2005 and draft report 2006

Table 2: Water coverage levels (National, Rural and Small Towns), 2006

National coverage

Region	Communities	Projected Relevant Population	Boreholes	Hand-Dug Wells	Pipe Systems	Below 75 Served	75 - 300 Served	301 - 2000 Served	2001 - 5000 Served	Over 5000 Served	Population Served	Coverage (%)
Ashanti	2,428	2,365,244	3,483	830	73	1,742	78,753	696,533	361,660	352,931	1,491,619	**63.06**
Brong Ahafo	2,639	1,750,114	2,250	503	18	3,941	72,318	350,311	225,279	258,144	909,993	**52.00**
Central	3,091	1,497,292	1,053	479	25	5,703	52,175	326,285	154,695	155,331	694,189	**46.36**
Eastern	3,211	1,796,739	2,078	1,078	18	3,791	101,459	399,693	210,702	131,000	846,645	**47.12**
Greater Accra	848	592,489	212	65	7	1,668	25,588	166,871	59,360	48,431	301,918	**50.96**
Northern	3,848	1,857,022	3,197	516	21	5,020	134,360	573,032	134,941	232,039	1,079,392	**58.12**
Upper East	1,912	1,006,078	1,633	434	6	841	43,601	365,850	71,908	33,655	515,855	**51.27**
Upper West	929	650,464	1,534	77	9	1,290	36,065	283,204	70,803	45,629	436,991	**67.18**
Volta	2,722	1,430,999	1,756	52	85	295	58,857	424,289	134,275	112,005	729,721	**50.99**
Western	1,739	1,440,399	1,037	418	26	1,269	35,508	271,426	121,389	168,563	598,155	**41.53**
National	**23,367**	**14,386,840**	**18,233**	**4,452**	**288**	**25,560**	**638,684**	**3,857,494**	**1,545,012**	**1,537,728**	**7,604,478**	**52.86**

Rural coverage

Region	Communities	Projected Relevant Population	Boreholes	Hand-Dug Wells	Pipe Systems	Below 75 Served	75 - 300 Served	301 - 2000 Served	2001 - 5000 Served	Over 5000 Served	Population Served	Coverage (%)
Ashanti	2,369	1,772,003	3,235	774	50	1,742	78,753	696,533	361,660	-	1,138,688	**64.26**
Brong Ahafo	2,593	1,322,612	2,033	472	5	3,941	72,318	350,311	225,279	-	651,849	**49.28**
Central	3,056	1,071,319	1,039	405	13	5,703	52,175	326,285	154,695	-	538,858	**50.30**
Eastern	3,173	1,545,536	1,985	1,057	10	3,791	101,459	399,693	210,702	-	715,645	**46.30**
Greater Accra	831	440,018	206	65	6	1,668	25,588	166,871	59,360	-	253,487	**57.61**
Northern	3,821	1,573,222	2,997	499	5	5,020	134,360	573,032	134,941	-	847,353	**53.86**
Upper East	1,903	940,067	1,618	433	2	841	43,601	365,850	71,908	-	482,200	**51.29**
Upper West	922	533,295	1,461	77	4	1,290	36,065	283,204	70,803	-	391,362	**73.39**
Volta	2,704	1,264,516	1,723	52	75	295	58,857	424,289	134,275	-	617,716	**48.85**
Western	1,709	1,168,241	983	402	15	1,269	35,508	271,426	121,389	-	429,592	**36.77**
National	**23,081**	**11,630,829**	**17,280**	**4,236**	**185**	**25,560**	**638,684**	**3,857,494**	**1,545,012**	**-**	**6,066,750**	**52.16**

Small Towns coverage

Region	Communities	Projected Relevant Population	Boreholes	Hand-Dug Wells	Pipe Systems	Below 75 Served	75 - 300 Served	301 - 2000 Served	2001 - 5000 Served	Over 5000 Served	Population Served	Coverage (%)
Ashanti	59	593,241	248	56	23	-	-	-	-	352,931	352,931	**59.49**
Brong Ahafo	46	427,502	217	31	13	-	-	-	-	258,144	258,144	**60.38**
Central	35	425,973	14	74	12	-	-	-	-	155,331	155,331	**36.46**
Eastern	38	251,203	93	21	8	-	-	-	-	131,000	131,000	**52.15**
Greater Accra	17	152,471	6	-	1	-	-	-	-	48,431	48,431	**31.76**
Northern	27	283,800	200	17	16	-	-	-	-	232,039	232,039	**81.76**
Upper East	9	66,011	15	1	4	-	-	-	-	33,655	33,655	**50.98**
Upper West	7	117,169	73	-	5	-	-	-	-	45,629	45,629	**38.94**
Volta	18	166,483	33	-	10	-	-	-	-	112,005	112,005	**67.28**
Western	30	272,158	54	16	11	-	-	-	-	168,563	168,563	**61.94**
National	**286**	**2,756,011**	**953**	**216**	**103**	**-**	**-**	**-**	**-**	**1,537,728**	**1,537,728**	**55.80**

NOTE:

1. Projected National Population (2006) is 23,303,000
2. Rural population under refence excludes those communities served by the GWCL
3. Population of small towns refers to those served by CWSA

Table 3: Water coverage deficits, 2007 - 2015

	Coverage rates for the SIP				
Year	Expected Coverage	Current Coverage	Commitments	Projected coverage	% Deficit
2006	52.86	52.86	0.00	52.86	0.00
2007	54.73	52.40	1.75	54.15	0.58
2008	57.07	51.94	3.17	55.11	1.97
2009	60.00	51.47	4.23	55.70	4.30
2010	64.55	50.99	5.06	56.05	8.50
2011	68.33	50.51	5.16	55.67	12.67
2012	71.49	50.01	5.04	55.05	16.44
2013	75.03	49.52	4.91	54.43	20.61
2014	79.46	49.02	4.79	53.81	25.66
2015	85.00	48.51	4.67	53.19	31.81

Year	Expected Coverage	Current Coverage	Commitments	Projected coverage	% Deficit
2006	52.86	52.86	0.00	52.86	0.00
2007	54.73	52.40	1.75	54.15	0.58
2008	57.07	51.94	3.17	55.11	1.97
2009	60.00	51.47	4.23	55.70	4.30
2010	63.16	50.99	5.06	56.05	7.12
2011	65.80	50.51	5.16	55.67	10.13
2012	68.00	50.01	5.04	55.05	12.95
2013	70.10	49.52	4.91	54.43	15.67
2014	72.72	49.02	4.79	53.81	18.91
2015	76.00	48.51	4.67	53.19	22.81

	Coverage rates for the 5YMTP				
Year	Expected Coverage	Current Coverage	Commitments	Projected coverage	% Deficit
2006	52.86	52.86	0.00	52.86	0.00
2007	54.73	52.40	1.75	54.15	0.58
2008	57.07	51.94	3.17	55.11	1.97
2009	60.00	51.47	4.23	55.70	4.30
2010	64.55	50.99	5.06	56.05	8.50
2011	68.33	50.51	5.16	55.67	12.67
2012	71.49	50.01	5.04	55.05	16.44

Year	Expected Coverage	Current Coverage	Commitments	Projected coverage	% Deficit
2006	52.86	52.86	0.00	52.86	0.00
2007	54.73	52.40	1.75	54.15	0.58
2008	57.07	51.94	3.17	55.11	1.97
2009	60.00	51.47	4.23	55.70	4.30
2010	63.16	50.99	5.06	56.05	7.12
2011	65.80	50.51	5.16	55.67	10.13
2012	68.00	50.01	5.04	55.05	12.95

Table 4: Additional targets for facilities delivery, 2007 - 2015

Type	85 % Facility coverage	2008	2009	2010	2011	2012	2013	2014	2015	TOTAL
WATER	Borehole	422	531	593	1,022	923	819	921	1,124	6,355
WATER	Hand-Dug Wells	0	76	94	186	124	134	130	166	910
WATER	Pipe System (Rural)	42	65	64	65	58	57	60	67	478
WATER	Pipe System (Small Town)	13	6	19	15	21	17	15	18	124
SOFTWARE	Water and Sanitation Committee	721	865	1,038	1,246	1,495	1,794	2,153	2,584	11,896
SOFTWARE	District Water and Sanitation Teams	7	8	9	11	14	16	20	23	108
SOFTWARE	Technical Assistance	13	16	19	23	27	33	39	47	217
SOFTWARE	Small Towns Consultancy Services	7	8	9	11	14	16	20	23	108

Type	76% Facility coverage	2008	2009	2010	2011	2012	2013	2014	2015	TOTAL
WATER	Borehole	531	593	789	691	583	675	727	976	5,565
WATER	Hand-Dug Wells	76	94	80	28	108	46	78	96	606
WATER	Pipe System (Rural)	65	64	45	60	44	43	75	54	450
WATER	Pipe System (Small Town)	6	19	14	19	18	15	19	11	121
SOFTWARE	Water and Sanitation Committee	836	1,003	1,203	1,444	1,733	2,079	2,495	2,994	13,787
SOFTWARE	District Water and Sanitation Teams	8	9	11	14	16	20	23	28	129
SOFTWARE	Technical Assistance	16	19	23	27	33	39	47	56	260
SOFTWARE	Small Towns Consultancy Services	8	9	11	14	16	20	23	28	129

Type	72% Facility coverage	2008	2009	2010	2011	2012	TOTAL
WATER	Borehole	531	593	1022	923	819	3888
WATER	Hand-Dug Wells	76	94	186	124	134	614
WATER	Pipe System (Rural)	65	64	65	58	57	309
WATER	Pipe System (Small Town)	6	19	15	21	17	78
SOFTWARE	Water and Sanitation Committee	865	1038	1246	1495	1794	6438
SOFTWARE	District Water and Sanitation Teams	8	9	11	14	16	58
SOFTWARE	Technical Assistance	16	19	23	27	33	118
SOFTWARE	Small Towns Consultancy Services	8	9	11	14	16	58

Type	68% Facility coverage	2008	2009	2010	2011	2012	TOTAL
WATER	Borehole	531	593	789	691	583	3,187
WATER	Hand-Dug Wells	76	94	80	28	108	386
WATER	Pipe System (Rural)	65	64	45	60	44	278
WATER	Pipe System (Small Town)	6	19	14	19	18	76
SOFTWARE	Water and Sanitation Committee	836	1,003	1,203	1,444	1,733	6,219
SOFTWARE	District Water and Sanitation Teams	8	9	11	14	16	58
SOFTWARE	Technical Assistance	16	19	23	27	33	118
SOFTWARE	Small Towns Consultancy Services	8	9	11	14	16	58

Table 5: Cost of facilities required to meet SIP targets, 2008 – 2015 (in US$)

Facility	Facility @ 85%	2008	2009	2010	2011	2012	2013	2014	2015	TOTAL
WATER	Borehole	2,743,000	3,451,500	3,854,500	6,643,000	5,999,500	5,323,500	5,986,500	7,306,000	**41,307,500**
WATER	Hand-Dug Wells	0	228,000	282,000	558,000	372,000	402,000	390,000	498,000	**2,730,000**
WATER	Pipe System (Rural)	2,520,000	3,900,000	3,840,000	3,900,000	3,480,000	3,420,000	3,600,000	4,020,000	**28,680,000**
WATER	Pipe System (Small Town)	4,550,000	2,100,000	6,650,000	5,250,000	7,350,000	5,950,000	5,250,000	6,300,000	**43,400,000**
	Sub-total Water	9,813,000	9,679,500	14,626,500	16,351,000	17,201,500	15,095,500	15,226,500	18,124,000	116,117,500
	Project Management	490,650	483,975	731,325	817,550	860,075	754,775	761,325	906,200	**5,805,875**
	Hardware sub-total	**10,303,650**	**10,163,475**	**15,357,825**	**17,168,550**	**18,061,575**	**15,850,275**	**15,987,825**	**19,030,200**	**121,923,375**
SOFTWARE	Water and Sanitation Committee	432,600	519,000	622,800	747,600	897,000	1,076,400	1,291,800	1,550,400	**7,137,600**
SOFTWARE	District Water and Sanitation Teams	3,500	4,000	4,500	5,500	7,000	8,000	10,000	11,500	**54,000**
SOFTWARE	Technical Assistance	13,000	16,000	19,000	23,000	27,000	33,000	39,000	47,000	**217,000**
SOFTWARE	Small Towns Consultancy Services	210,000	240,000	270,000	330,000	420,000	480,000	600,000	690,000	**3,240,000**
	Sub-total software	**659,100**	**779,000**	**916,300**	**1,106,100**	**1,351,000**	**1,597,400**	**1,940,800**	**2,298,900**	**10,648,600**
	TOTAL COST @ 85%	**10,962,750**	**10,942,475**	**16,274,125**	**18,274,650**	**19,412,575**	**17,447,675**	**17,928,625**	**21,329,100**	**132,571,975**

Facility	Facility @ 76%	2008	2009	2010	2011	2012	2013	2014	2015	TOTAL
WATER	Borehole	3,451,500	3,854,500	5,128,500	4,491,500	3,789,500	4,387,500	4,725,500	6,344,000	**36,172,500**
WATER	Hand-Dug Wells	228,000	282,000	240,000	84,000	324,000	138,000	234,000	288,000	**1,818,000**
WATER	Pipe System (Rural)	3,900,000	3,840,000	2,700,000	3,600,000	2,640,000	2,580,000	4,500,000	3,240,000	**27,000,000**
WATER	Pipe System (Small Town)	2,100,000	6,650,000	4,900,000	6,650,000	6,300,000	5,250,000	6,650,000	3,850,000	**42,350,000**
	Sub-total Water	9,679,500	14,626,500	12,968,500	14,825,500	13,053,500	12,355,500	16,109,500	13,722,000	**107,340,500**
	Project Management	483,975	731,325	648,425	741,275	652,675	617,775	805,475	686,100	**5,367,025**
	Hardware sub-total	**10,163,475**	**15,357,825**	**13,616,925**	**15,566,775**	**13,706,175**	**12,973,275**	**16,914,975**	**14,408,100**	**112,707,525**
SOFTWARE	Water and Sanitation Committee	501,600	601,800	721,800	866,400	1,039,800	1,247,400	1,497,000	1,796,400	**8,272,200**
SOFTWARE	District Water and Sanitation Teams	4,000	4,500	5,500	7,000	8,000	10,000	11,500	14,000	**64,500**
SOFTWARE	Technical Assistance	16,000	19,000	23,000	27,000	33,000	39,000	47,000	56,000	**260,000**
SOFTWARE	Small Towns Consultancy Services	240,000	270,000	330,000	420,000	480,000	600,000	690,000	840,000	**3,870,000**
	Sub-total software	**761,600**	**895,300**	**1,080,300**	**1,320,400**	**1,560,800**	**1,896,400**	**2,245,500**	**2,706,400**	**12,466,700**
	TOTAL COST @ 76%	**10,925,075**	**16,253,125**	**14,697,225**	**16,887,175**	**15,266,975**	**14,869,675**	**19,160,475**	**17,114,500**	**125,174,225**

Facility	Facility @ 72%	2008	2009	2010	2011	2012	TOTAL
WATER	Borehole	3,451,500	3,854,500	6,643,000	5,999,500	5,323,500	**25,272,000**
WATER	Hand-Dug Wells	228,000	282,000	558,000	372,000	402,000	**1,842,000**
WATER	Pipe System (Rural)	3,900,000	3,840,000	3,900,000	3,480,000	3,420,000	**18,540,000**
WATER	Pipe System (Small Town)	2,100,000	6,650,000	5,250,000	7,350,000	5,950,000	**27,300,000**
	Sub-total Water	9,679,500	14,626,500	16,351,000	17,201,500	15,095,500	**72,954,000**
	Project Management	483,975	731,325	817,550	860,075	754,775	**3,647,700**
	Hardware sub-total	**10,163,475**	**15,357,825**	**17,168,550**	**18,061,575**	**15,850,275**	**76,601,700**
SOFTWARE	Water and Sanitation Committee	519,000	622,800	747,600	897,000	1,076,400	**3,862,800**
SOFTWARE	District Water and Sanitation Teams	4,000	4,500	5,500	7,000	8,000	**29,000**
SOFTWARE	Technical Assistance	16,000	19,000	23,000	27,000	33,000	**118,000**
SOFTWARE	Small Towns Consultancy Services	240,000	270,000	330,000	420,000	480,000	**1,740,000**
	Sub-total software	**779,000**	**916,300**	**1,106,100**	**1,351,000**	**1,597,400**	**5,749,800**
	TOTAL COST @ 72%	**10,942,475**	**16,274,125**	**18,274,650**	**19,412,575**	**17,447,675**	**82,351,500**

Facility	Facility @ 68%	2008	2009	2010	2011	2012	TOTAL
WATER	Borehole	3,451,500	3,854,500	5,128,500	4,491,500	3,789,500	**20,715,500**
WATER	Hand-Dug Wells	228,000	282,000	240,000	84,000	324,000	**1,158,000**
WATER	Pipe System (Rural)	3,900,000	3,840,000	2,700,000	3,600,000	2,640,000	**16,680,000**
WATER	Pipe System (Small Town)	2,100,000	6,650,000	4,900,000	6,650,000	6,300,000	**26,600,000**
	Sub-total Water	9,679,500	14,626,500	12,968,500	14,825,500	13,053,500	**65,153,500**
	Project Management	483,975	731,325	648,425	741,275	652,675	**3,257,675**
	Hardware sub-total	**10,163,475**	**15,357,825**	**13,616,925**	**15,566,775**	**13,706,175**	**68,411,175**
SOFTWARE	Water and Sanitation Committee	501,600	601,800	721,800	866,400	1,039,800	**3,731,400**
SOFTWARE	District Water and Sanitation Teams	4,000	4,500	5,500	7,000	8,000	**29,000**
SOFTWARE	Technical Assistance	16,000	19,000	23,000	27,000	33,000	**118,000**
SOFTWARE	Small Towns Consultancy Services	240,000	270,000	330,000	420,000	480,000	**1,740,000**
	Sub-total software	**761,600**	**895,300**	**1,080,300**	**1,320,400**	**1,560,800**	**5,618,400**
	TOTAL COST @ 68%	**10,925,075**	**16,253,125**	**14,697,225**	**16,887,175**	**15,266,975**	**74,029,575**

Table 6: Approved CWSA Budget, 2001 – 2007

CWSA APPROVED NARROW BUDGET, 2001 - 2007							
Narrow budget basis ¢ million	**2001 Budget Estimates**	**2002 Budget Estimates**	**2003 Budget Estimates**	**2004 Budget Estimates**	**2005 Budget Estimates**	**2006 Budget Estimates**	**2007 Budget Estimates**
CWSA							
Personnel emoluments	2,235.7	3,435.5	7,122.5	8,009.4	9,277.8	12,048.0	18,407.7
Administration expenses	2,815.0	3,760.0	4,413.9	4,855.3	5,661.8	4,699.0	8,320.2
Service expenditure	48.1	23.9	0.0	0.0	0.0	506.0	575.0
Investment expenditure	498.7	122.7	99.1	1,541.0	1,541.0	4,541.0	6,184.0
Narrow CWSA	**5,597.5**	**7,342.1**	**11,635.5**	**14,405.7**	**16,480.6**	**21,794.0**	**33,486.9**
Total GoG	**5,155,883.6**	**4,533,604.0**	**7,798,600.2**	**10,513,178.7**	**12,693,800.0**	**14,670,302.0**	**19,925,929.0**

CWSA APPROVED BROAD BUDGET, 2001 - 2007							
Broad Budget basis ¢ million	**2001 Broad Estimates**	**2002 Broad Estimates**	**2003 Broad Estimates**	**2004 Broad Estimates**	**2005 Broad Estimates**	**2006 Broad Estimates**	**2007 Broad Estimates**
Personnel Emoluments	2,235.7	3,435.5	7,122.5	8,009.4	9,277.8	12,048.0	18,407.7
Administration expenses	2,815.0	3,760.0	4,413.9	4,855.3	5,661.8	4,699.0	8,320.2
Service expenses	8,051.2	24,482.0	24,541.3	30,000.0	78,153.6	78,771.0	306,565.5
Investment Cost	43,636.1	155,995.7	177,790.4	86,588.0	286,586.4	457,874.0	299,770.7
TOTAL	**56,738.0**	**187,673.3**	**213,868.1**	**129,452.7**	**379,679.6**	**553,392.0**	**633,064.1**
Broad Discretionary	**6,329,456**	**7,290,083**	**10,442,100**	**13,005,379**	**18,528,235**	**29,483,985**	**38,698,322**

Table 7: Actual expenditure level (Core Budget), 2001 - 2006

ACTUAL EXPENDITURE	2001	2002	2003	2004	2005	2006
	¢ '000	¢ '000	¢ '000	¢ '000	¢ '001	¢ '000
Income						
GoG payment	9,031,471	8,331,487	7,813,090	10,102,345	14,177,613	16,151,459
Internally Generated Funds	2,391,285	2,545,777	5,272,050	7,870,968	5,537,837	5,268,088
Donor funding	4,097,474	28,040,562	53,737,059	85,628,389	54,183,975	66,423,277
2% Water levy	1,300,000	500,000	5,400,000	5,000,000	5,500,000	5,500,000
Community contribution (a) (b)	0	193,730	582,601	357,096	1,172,543	-321,889
Exchange difference	85,850		785,148	277,974	63,932	514,003
Total	**16,906,080**	**39,611,556**	**73,589,948**	**109,236,772**	**80,635,900**	**93,534,938**
Expenditure						
Personnel emoluments	3,285,758	5,702,542	7,184,637	6,895,006	8,880,126	11,052,875
Administration expenses	5,476,575	6,523,352	7,517,667	9,261,185	14,534,730	16,213,539
Service expenses	1,434,692	4,070,958	6,018,697	12,522,804	10,101,775	7,648,945
Project expenditure	12,735,877	22,552,858	48,289,708	93,723,957	52,073,099	65,495,367
Total	**22,932,902**	**38,849,710**	**69,010,709**	**122,402,952**	**85,589,730**	**100,410,726**
Surplus / Deficit	**-6,026,822**	**761,846**	**4,579,239**	**-13,166,180**	**-4,953,830**	**-6,875,788**

Source: CWSA Annual Accounts, 2001 - 2006

NOTE

(a) Figures here are the portions of contribution that accrued to CWSA, and not to total community contributions paid to District Assemblies

(b) Negative figure indicates refunds

	2001	2002	2003	2004	2005	2006
	¢ '000	¢ '000	¢ '000	¢ '000	¢ '001	¢ '000
Income						
GoG payment	9,031,471	8,331,487	7,813,090	10,102,345	14,177,613	16,151,459
Internally Generated Funds	2,391,285	2,545,777	5,272,050	7,870,968	5,537,837	5,268,088
Core income	**11,422,756**	**10,877,264**	**13,085,140**	**17,973,313**	**19,715,450**	**21,419,547**
Expenditure						
Personnel emoluments	3,285,758	5,702,542	7,184,637	6,895,006	8,880,126	11,052,875
Administration expenses	5,476,575	6,523,352	7,517,667	9,261,185	14,534,730	16,213,539
Core costs	**8,762,333**	**12,225,894**	**14,702,304**	**16,156,191**	**23,414,856**	**27,266,414**
Funding Excess / Shortfall	**2,660,423**	**-1,348,630**	**-1,617,164**	**1,817,122**	**-3,699,406**	**-5,846,867**

Table 8: Shortfalls in GoG transfers to CWSA, 2001 - 2006

Year	Actual GoG transfer	Average rate	Equivalent	Difference	Shortfall
	¢	of inflation	¢	¢	%
1999	5,500,000,000	12.45%	5,500,000,000		
2000		25.20%	6,184,750,000		
2001	**9,031,471,000**	**32.90%**	**7,743,307,000**	**1,288,164,000**	**16.64%**
2002	**8,331,487,000**	**14.80%**	**10,290,855,003**	**-1,959,368,003**	**-19.04%**
2003	**7,813,090,000**	**26.70%**	**11,813,901,543**	**-4,000,811,543**	**-33.87%**
2004	**10,102,345,000**	**12.60%**	**14,968,213,256**	**-4,865,868,256**	**-32.51%**
2005	**14,177,613,000**	**15.10%**	**16,854,208,126**	**-2,676,595,126**	**-15.88%**
2006	**16,151,459,000**	**10.90%**	**19,399,193,553**	**-3,247,734,553**	**-16.74%**
2007*		8.80%	21,513,705,650		
2008**			23,406,911,747		
TOTAL	**65,607,465,000**	**18.83%**	**81,069,678,480**	**-15,462,213,480**	**-19.07%**

Table 9: CWSA Budget allocation ratios, 2001 - 2007

Narrow Budget ratios, CWSA 2001 - 2007									
Ratio of Narrow Budget	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2001 -2007**	**2001 - 2007**
	Budget	**Budget**	**Budget**	**Budget**	**Budget**	**Budget**	**Budget**	**Average**	**Highest**
	Estimates	**Estimates**	**Estimates**	**Estimates**	**Estimates**	**Estimates**	**Estimates**	**Ratios**	**Ratios**
CWSA									
Personnel emoluments	0.043%	0.076%	0.091%	0.076%	0.073%	0.082%	0.092%	0.076%	0.092%
Administration expenses	0.055%	0.083%	0.057%	0.046%	0.045%	0.032%	0.042%	0.051%	0.083%
Service expenditure	0.001%	0.001%	0.315%	0.000%	0.000%	0.003%	0.003%	0.046%	0.046%
Investment expenditure	0.010%	0.003%	2.280%	0.015%	0.012%	0.031%	0.031%	0.340%	2.280%
Narrow CWSA	**0.109%**	**0.162%**	**0.148%**	**0.137%**	**0.130%**	**0.149%**	**0.168%**	**0.514%**	**2.501%**
Narrow MWRWH	1.485%	1.081%	0.765%	0.935%	0.726%	0.741%	0.859%	0.942%	
Narrow GoG Discretionary	**100.000%**	**100.000%**	**100.000%**	**100.000%**	**100.000%**	**100.000%**	**100.000%**	**100.000%**	
Broad Budget ratios, CWSA 2001 - 2007									
Share of CWSA in Broad Budget	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**Average ratios**	**Highest shares**
	BROAD BUDGET	**BROAD BUDGET**	**BROAD BUDGET**	**BROAD BUDGET**	**BROAD BUDGET**	**BROAD BUDGET**	**BROAD BUDGET**	**BROAD BUDGET**	**BROAD BUDGET**
Personnel Emoluments	0.035%	0.047%	0.068%	0.062%	0.050%	0.041%	0.048%	0.050%	0.068%
Administration expenses	0.044%	0.052%	0.042%	0.037%	0.031%	0.016%	0.022%	0.035%	0.052%
Service expenses	0.127%	0.336%	0.235%	0.231%	0.422%	0.267%	0.792%	0.344%	0.792%
Total Investment Cost	0.689%	2.140%	1.703%	0.666%	1.547%	1.553%	0.775%	1.296%	2.140%
TOTAL	**0.896%**	**2.574%**	**2.048%**	0.996%	**2.049%**	**1.877%**	**1.636%**	**1.725%**	**3.052%**
Broad MWH sector	5.143%	7.876%	6.285%	3.292%	5.166%	4.500%	4.831%	5.299%	
Broad Discretionary Budget	**100.000%**	**100.000%**	**100.000%**	**100.000%**	**100.000%**	**100.000%**	**100.000%**	**100.000%**	
NOTE: The Broad Busget ratios would provide more funds to CWSA and was not applied									

Table 10: Medium-term Budget projections, 2008 - 2012

Budget Projection	2008	2009	2010	2011	2012
¢ million	Narrow	Narrow	Narrow	Narrow	Narrow
	Projection	Projection	Projection	Projection	Projection
CWSA					
Personnel emoluments	27,148,262,110	31,401,668,565	36,614,345,547	42,692,326,908	49,779,253,175
Administration expenses	15,122,314,040	17,491,576,128	20,395,177,765	23,780,777,274	27,728,386,301
Service expenditure	12,138,746,484	14,040,563,346	16,371,296,861	19,088,932,140	22,257,694,876
Investment expenditure	89,621,985,849	103,663,353,641	120,871,470,345	140,936,134,422	164,331,532,736
Narrow CWSA	**144,031,308,483**	**166,597,161,679**	**194,252,290,518**	**226,498,170,744**	**264,096,867,088**
Internally Generated Funds	17,658,238,420	20,424,812,022	23,815,330,818	27,768,675,733	32,378,275,905
Donor commitments	560,380,604,000	369,040,000,000	355,600,000,000	176,400,000,000	126,000,000,000
BROAD Projected (without new investment)	**722,070,150,903**	**556,061,973,701**	**573,667,621,336**	**430,666,846,477**	**422,475,142,993**
Anticipated annual requirement for target 68	93,965,526,000	140,240,466,000	127,178,058,000	143,323,230,000	126,629,358,000
Projected total cost for achieving 68%	**816,035,676,903**	**696,302,439,701**	**700,845,679,336**	**573,990,076,477**	**549,104,500,993**
Anticipated annual requirement for target 76	93,965,526,000	140,240,466,000	155,626,758,000	159,691,230,000	145,396,758,000
Projected total cost for achieving 76%	**816,035,676,903**	**696,302,439,701**	**729,294,379,336**	**590,358,076,477**	**567,871,900,993**

Table 11: Projection of donor funding, 2007 - 2012

SUMMARY							
All figures in €	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
ADB/ADF	-	2,962,963	3,703,704	3,703,704	4,222,222		
AFD	4,800,000	700,000	2,900,000	4,400,000	9,000,000		
DANIDA	5,700,000	9,500,000	9,000,000				
EU	4,000,000	10,250,000	14,750,000	16,000,000	15,000,000	14,000,000	10,000,000
IDA	4,444,444	4,444,444	7,407,407	5,185,185			
KFW		6,713,540	6,713,540				
TOTAL (€)	**18,944,444**	**34,570,947**	**44,474,651**	**29,288,889**	**28,222,222**	**14,000,000**	**10,000,000**
¢ equivalent @12,600	**238,700,000,000**	**435,593,937,333**	**560,380,604,000**	**369,040,000,000**	**355,600,000,000**	**176,400,000,000**	**126,000,000,000**

Table 12: Regional distribution of donor funds, 2006

2006												
Investment funding (¢ million)	**ASR**	**BAR**	**CR**	**ER**	**GAR**	**NR**	**UER**	**UWR**	**VR**	**WR**	**HQ**	**Total**
ESAs												**228,037.52**
AfD						25,752.00						25,752.00
CIDA						15,765.00						15,765.00
DANIDA			19,082.42	24,857.37	39,935.44				23,673.99			107,549.22
EUROPEAN UNION						14,757.32						14,757.32
IDA	539.04	382.55	94.10				400.41	18,722.20		219.00	46,974.50	67,331.80
Others				24.20				710.80		29.60	2,572.30	3,336.90
Domestic												**32,254.96**
GoG	2,425.39	1,779.38	2,296.67	432.15	1,632.00	5,539.00	1,879.06	1,870.10	1,428.00	1,641.30	10,189.95	31,113.00
DISTRICT ASSEMBLIES										20.00		20.00
COMMUNITIES				1,121.96								1,121.96
TOTAL	**2,964.43**	**2,161.93**	**18,824.68**	**21,150.30**	**36,540.00**	**61,813.32**	**2,279.47**	**21,303.10**	**28,567.00**	**1,909.90**	**62,778.35**	**266,747.20**

Table 13: Rural Sanitation coverage, 2006

			Growth Rate	POPULATION				POPULATION SERVED	Coverage
				2000	2006	VIP	KVIP		
Ashanti	ASR	Kumasi	3.40%	1,935,271	2,365,184	5,304	367	199,840	**8.45%**
Brong Ahafo	BAR	Sunyani	2.50%	1,509,136	1,750,135	3,052	176	100,920	**5.77%**
Central	CR	Cape Coast	2.10%	1,321,737	1,497,268	1,088	95	48,880	**3.26%**
Eastern	ER	Koforidua	1.40%	1,652,928	1,796,725	7,294	431	245,340	**13.65%**
Greater Accra	GAR	Accra	4.40%	457,599	592,500	4,484	385	198,840	**33.56%**
Northern	NR	Tamale	2.80%	1,573,462	1,857,013	10,099	106	143,390	**7.72%**
Upper East	UER	Bolgatanga	1.10%	942,138	1,006,054	716	50	27,160	**2.70%**
Upper West	UWR	Wa	1.70%	587,895	650,467	229	52	23,090	**3.55%**
Volta	VR	Ho	1.90%	1,278,179	1,430,991	9,938	832	432,180	**30.20%**
Western	WR	Takoradi	3.20%	1,192,339	1,440,383	971	16	16,110	**1.12%**
Total				**12,450,684**	**14,386,720**	**43,175**	**2,510**	**1,435,750**	**9.98%**