

Government of Ghana



Ministry of Local Government and Rural Development

Environmental Health and Sanitation Directorate

Strategic Environmental Sanitation Investment Plan

SESIP

Achieving Minimum Service Options by 2015

APRIL 2011

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Preface

1. The Strategic Environmental Sanitation Investment Plan (SESIP) “Achieving Minimum Service Options by 2015” is a first attempt at providing a financing plan for environmental sanitation services in Ghana. It is strategic in nature as it derives from the National Environmental Sanitation Strategy and Action Plan (NESSAP) which is in turn based on the national Environmental Sanitation Policy (Revised, 2010).
2. The contributions of all stakeholders and service users – households, private sector investors and operators, MMDAs, and Central Government are identified. A central strategy of the SESIP (2011 – 2015) is the estimation of the Financing Gap that has to be funded to assure the attainment of the desired levels of service and the financing options for funding the Gap.
3. In furtherance of the Government of Ghana (GoG)’s aim of developing sustainable delivery of services, the SESIP not only recognises the sources of funding as guided by the principles of ‘polluter-pays’ and cost recovery, but also allocates costs for establishing various enterprises for job creation. The SESIP therefore proposes incentives for achieving MINTing¹ as defined in the NESSAP that will lead to cost-reduction in managing all types of waste.
4. Ghana is among the countries judged as “off-track” in meeting the MDG Target 7c on sanitation “halve the proportion of people without access to basic sanitation” by 2015. Beyond basic sanitation there are grave consequences of poor solid waste management, poor storm-water drainage and sullage conveyance as well as inadequate management of health-care facility wastes.
5. The SESIP fulfils an important aspect of the new framework of national planning that requires comprehensive sector policies with accompanying investment plans. With four years left to reach the end of Millennium Development Goals’ (MDGs’) target year of 2015, the implementation of the SESIP will provide MMDAs and GoG with the necessary financing plan for achieving incremental improvements for all aspects of environmental sanitation.

¹ “MINT” is the concept of treating all wastes as *materials-in-transition*.

List of acronyms and abbreviations

CIDA		Canadian International Development Agency
CLTS	-	Community-Led Total Sanitation
CWSA	-	Community Water and Sanitation Agency
DANIDA	-	Danish International Development Assistance
DESSAP		District Environmental Sanitation Strategy and Action Plan
DP	-	Development Partners
DPCU	-	District Planning Coordinating Unit
DWSP	-	District Water and Sanitation Plan
EHSD	-	Environmental Health and Sanitation Directorate
EPA	-	Environmental Protection Agency
ESAA	-	Environmental Sanitation Assessment and Audit
FGD	-	Focus Group Discussion
GoG	-	Government of Ghana
GPRSII	-	Growth and Poverty Reduction Strategy
GSGDA		Ghana Shared Growth and Development Agenda (2010 – 2013)
GWCL	-	Ghana Water Company Limited
IEC	-	Information, Education and Communication
ILGS	-	Institute of Local Government Studies
IWRM	-	Integrated Water Resources Management
KPI	-	Key Person Interview
LGS	-	Local Government Service
LGSS	-	Local Government Service Secretariat
MDG	-	Millennium Development Goal
MEST		Ministry of Environment, Science and Technology

MINT*	-	Materials in Transition
MLGRD	-	Ministry of Local Government and Rural Development
MDA	-	Ministries, Departments and Agencies
MMDAs	-	Metropolitan, Municipal and District Assemblies
MMDCEs	-	Metropolitan, Municipal and District Chief Executives
MoFEP	-	Ministry of Finance and Economic Planning
M & E	-	Monitoring & Evaluation
MoE	-	Ministry of Education
MOFA	-	Ministry of Food and Agriculture
MTDPF	-	Medium Term Development Policy Framework (2010-13)
MWRWH	-	Ministry of Water Resources, Works and Housing
NCWSP	-	National Community Water and Sanitation Programme
NDPC	-	National Development Planning Commission
NESSAP	-	National Environmental Sanitation Strategy and Action Plan
NGO	-	Non- Governmental Organization
PMMS	-	Policy Monitoring and Management Support
PPPPPs	-	Policies, Plans, Programmes, Projects and Products
PURC	-	Public Utilities Regulatory Commission
RCC	-	Regional Coordinating Council
RDE		Royal Danish Embassy
RNE	-	Royal Netherlands Embassy
RPCU	-	Regional Planning Coordinating Unit
SESIP	-	Strategic Environmental Sanitation Investment Plan
SHEP/GES	-	School Health Education Programme of Ghana Education Service
SSHE	-	School Sanitation and Hygiene Education
UNDP	-	United Nations Development Programme

UNICEF - United Nations Children Fund
WD - Water Directorate
WRC - Water Resources Commission

EXECUTIVE SUMMARY

1. Environmental Sanitation services continue to take more than 35% of municipal budgets besides periodic support from the District Assemblies' Common Fund² (DACF) and other project-specific interventions by Development Partners including NGOs, yet the quality of services remains very poor.
2. The poor state of environmental sanitation services in Ghana is of serious concern to all. Various interventions implemented over the years have failed to produce sustainable solutions and the situation continues to deteriorate especially in the face of rising population and expansion of towns and cities.
3. Inadequate financing of environmental sanitation services by MMDAs, central government and low contributions from service-beneficiaries have not improved the situation.
4. The socio-economic and health impacts of neglecting investment in environmental sanitation have been under-estimated so far. The outbreak of environmental sanitation related diseases such as malaria, cholera and diarrhoea have been on a steady increase over the years and has also adversely affected annual government spending on health, estimated at more than US\$75 million annually.
5. While improved environmental sanitation services leads to improved health, the very great potential for job creation that will enable many of our citizenry to afford the services and live better lives is also often neglected. Improving environmental sanitation will impact on all the remaining seven (7) MDGs. The impact of poor levels of services on education, tourism and other sectors demand that the sector be accorded the status of essential services and allocated adequate levels of financing.
6. The Ministry of Local Government and Rural Development (MLGRD) in response has worked with sector stakeholders to develop an Environmental Sanitation Policy (Revised, 2010) and a National Environmental Sanitation Strategy and Action Plan (NESSAP) for implementing the policy measures and related actions.
7. The efforts of the MLGRD has been further strengthened by the medium-term national development policy framework, the Ghana Shared Growth and Development Agenda (GSGDA), 2010-2013, as well as the previous Growth and Poverty Reduction Strategy (GPRSII, 2006 – 2009) which recognised this need and therefore prioritised the improvement of environmental sanitation.
8. This Strategic Environmental Sanitation Investment Plan (SESIP) provides the sustainable financing plan for implementing the NESSAP. The NESSAP determines the service levels and specific strategies and action plans to achieve acceptable standards of environmental sanitation for the period 2010-2025 while the SESIP determines the cost of the services and the financing plan for the first phase, 2011-2015.
9. An important feature of the SESIP is the determination of the *financing gap* which if not funded will result in a shortfall in the delivery of the planned measures and service levels. The *financing gap* is to provide a basis for the Government of Ghana to financially support the plans either

² DACF is financed through not less than 7.5% (since January 2008) of the revenue resources of Ghana.

wholly or solicit for assistance from its Development Partners (DPs), International Financial Institutions (IFIs), as well as promote Direct Foreign Investments (DFI) in the sector. The SESIP also proposes options for financing the gaps.

10. The total cost of the SESIP (2011 – 2015) is estimated at GH¢1,317,661,087 (US\$941,186,491). The component costs are shown in Table ES1.

Table ES1: Total Cost of Services 2011-2015

	Focus Areas	Total Cost GH¢	US\$ EQUIVALENT	% of Total Cost
Improvement in Levels of Service	Solid Waste Management	826,279,199	590,199,428	62.7%
	Excreta Management	236,075,000	168,625,000	17.9%
	Storm Drains & Sullage Conveyance	33,184,000	23,702,857	0.67%
	Healthcare Facility Waste Management	2,701,210	1,929,436	0.20%
	Total	1,098,239,409	784,456,721	83.3%
Enabling Elements	Capacity Development	138,406,620	98,861,871	10.5%
	Information, Education & Communication	1,275,500	911,071	0.10%
	Legislation and Regulation	8,337,000	5,955,000	0.6%
	Sustainable Financing and Cost Recovery	403,955	288,539	0.03%
	Research & Development	636,170	454,407	0.05%
	Monitoring & Evaluation	70,362,433	50,258,881	5.3%
	Total Enabling Elements	219,421,678	156,729,770	16.7%
	TOTAL COST	1,317,661,087	941,186,491	100%

11. The NESSAP defines the components into Implementation Packages. The costs of Implementation Packages are presented in Table ES2.

Table ES2: Cost of Implementation Packages (2011 – 2015)

Implementation Packages	GH¢	US\$ Equivalent	% of Total Cost
Institutional Development and Capacity Enhancement Programme	15,141,120	10,815,086	1.1
Community Participation and Public Awareness Programme	133,660,075	95,471,482	10.1
Local Services Improvement Programme	<u>1,098,239,376</u>	<u>784,456,697</u>	<u>83.4</u>
Research, Performance Monitoring and Governance Programme	70,620,516	50,443,226	5.4
Total	<u>1,317,661,087</u>	<u>941,186,491</u>	<u>100</u>

12. The Annual Cost of Implementation Packages is presented in Figure. ES 1. Years 2012 and 2013 have the highest cost of GH¢ 365,259,877 (US\$ 260,899,912) and GH¢ 388,031,489 (US\$ 277,165,350) respectively while 2011 has the lowest cost of GH¢ 68,513,135(US\$ 48,937,953)

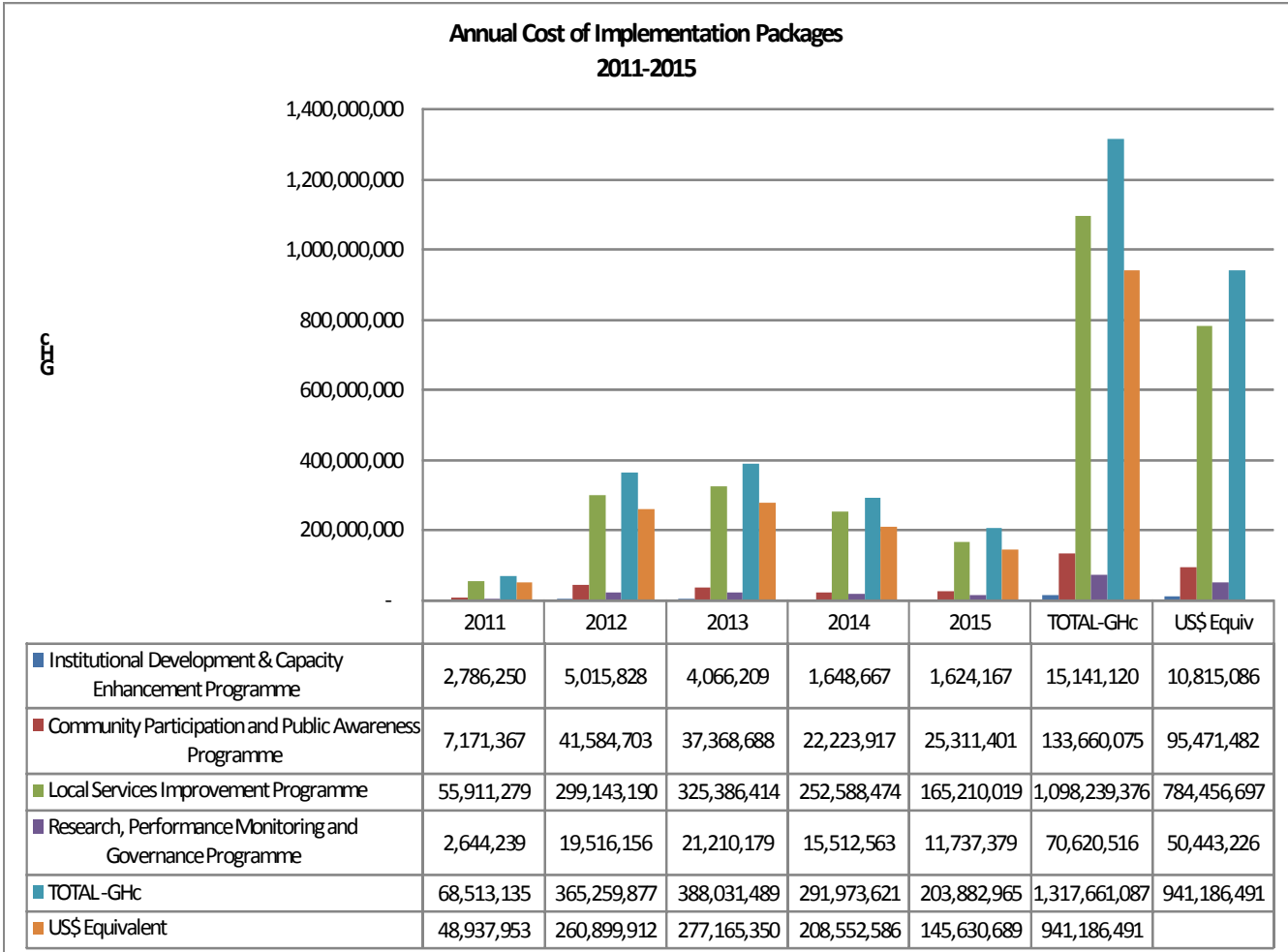


Figure ES 1:Annual Cost of Implementation Packages 2011-2015

13. The Financing Plan for the implementation packages over the entire period is as shown in Figure ES2. The MMDAs being the major stakeholders are expected to contribute the highest amount for the period amounting to GH¢758, 850,059(US\$ 542,035,756).

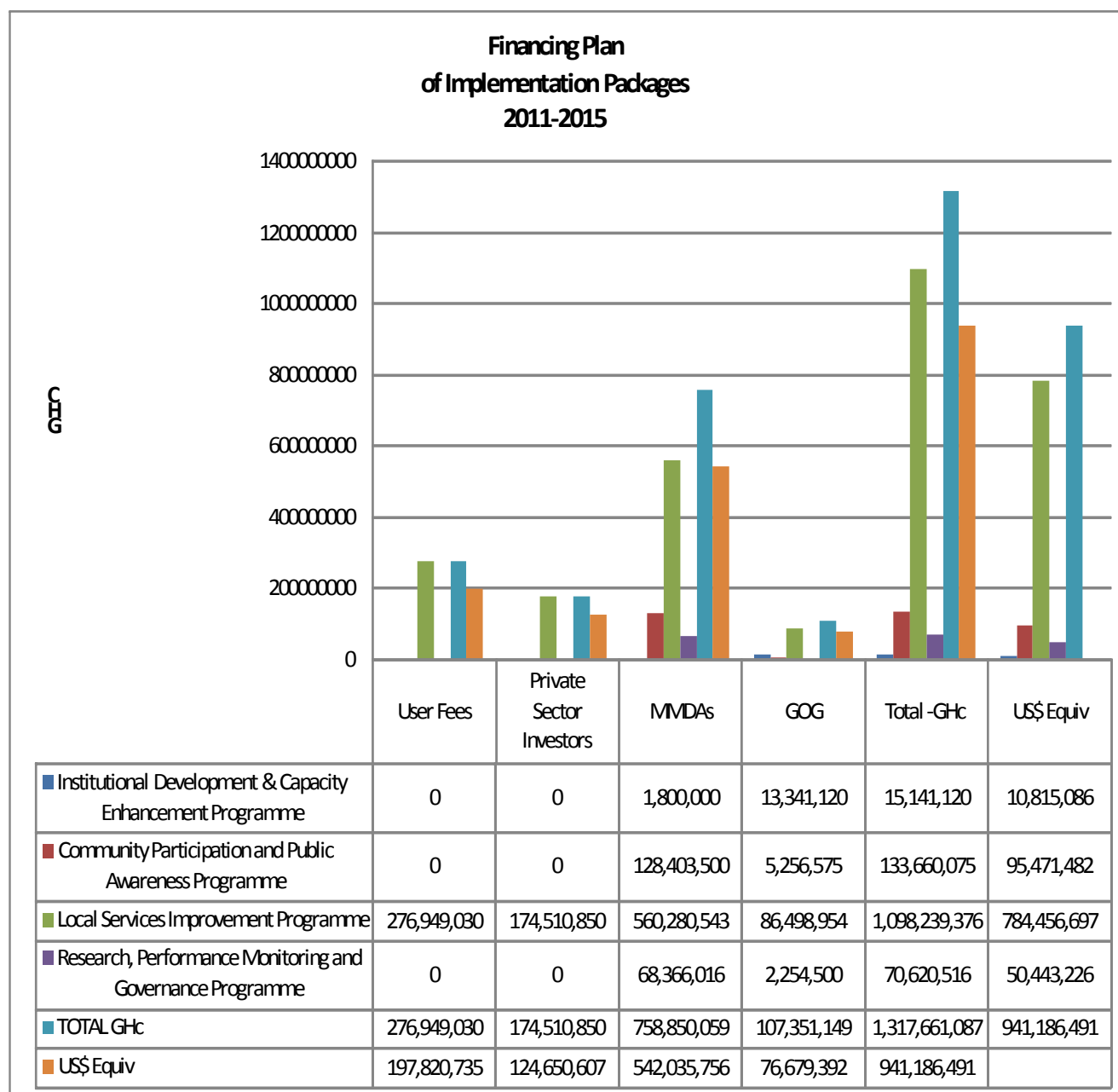


Figure ES 2: Financing Plan of the Implementation Packages 2011-2015

14. The Annual Financing Plan of the Implementation Packages is shown as Figure. ES3. It clearly shows that the highest funds will be contributed in 2013 amounting to GH¢388,031,489 (US\$ 277,165,350) and the lowest amount will be contributed in 2011 amounting to GH¢68,513,135(US\$ 48,937,953)

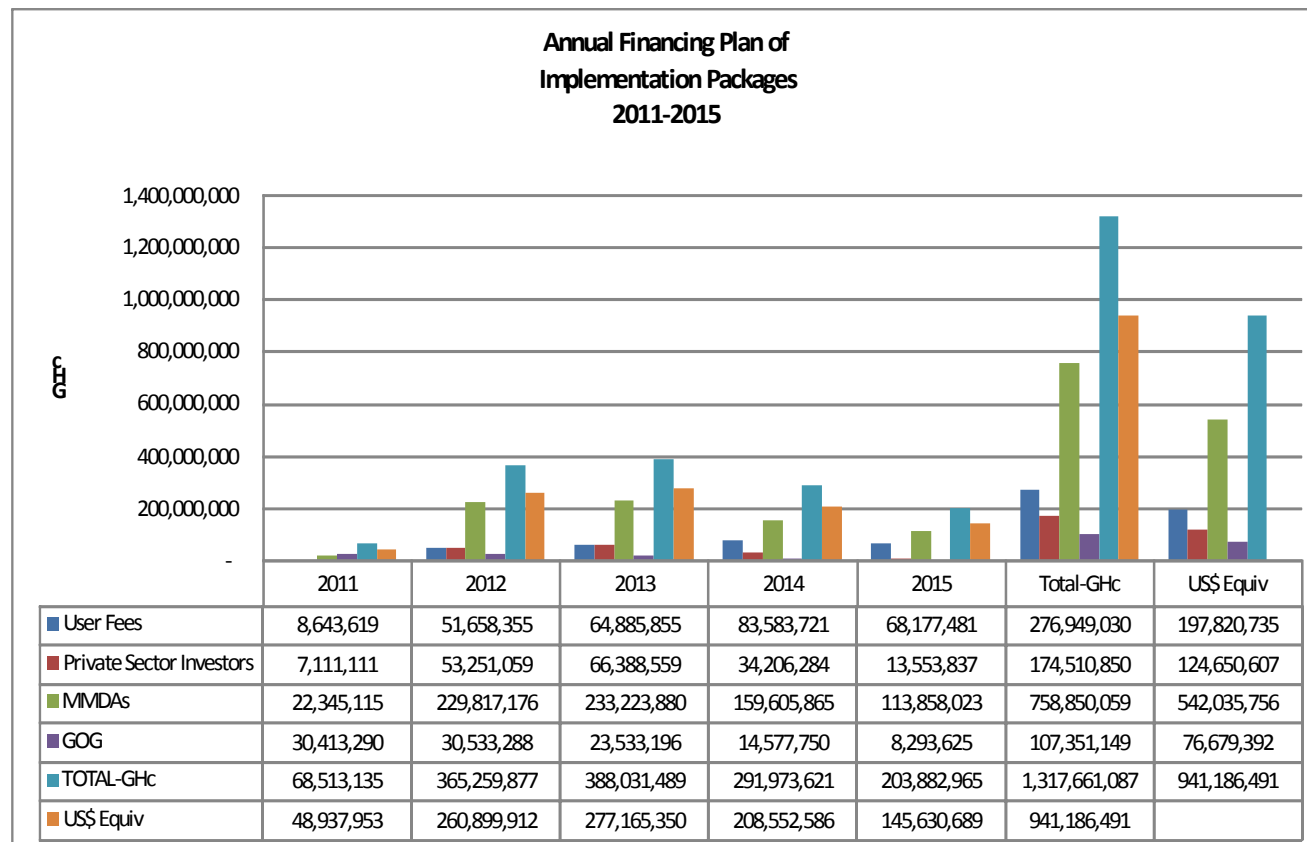


Figure. ES 3: Annual Financing Plan of Implementation Package

Financing Gap 2011-2015

15. The **Financing Gap** computed for each year over the period is shown in Figure ES4. The total financing gap is GH¢557,464,123 (US\$398,188,659). This is the gap to be funded by Government of Ghana (GoG) with the support of its Development Partners (DPs.). The highest Gap occurs in 2012 amounting to GH¢ 191,405,311(US\$136,718,079) and the least Gap occurs in 2011 amounting to GH¢ 15,641,581(US\$11,172,558).

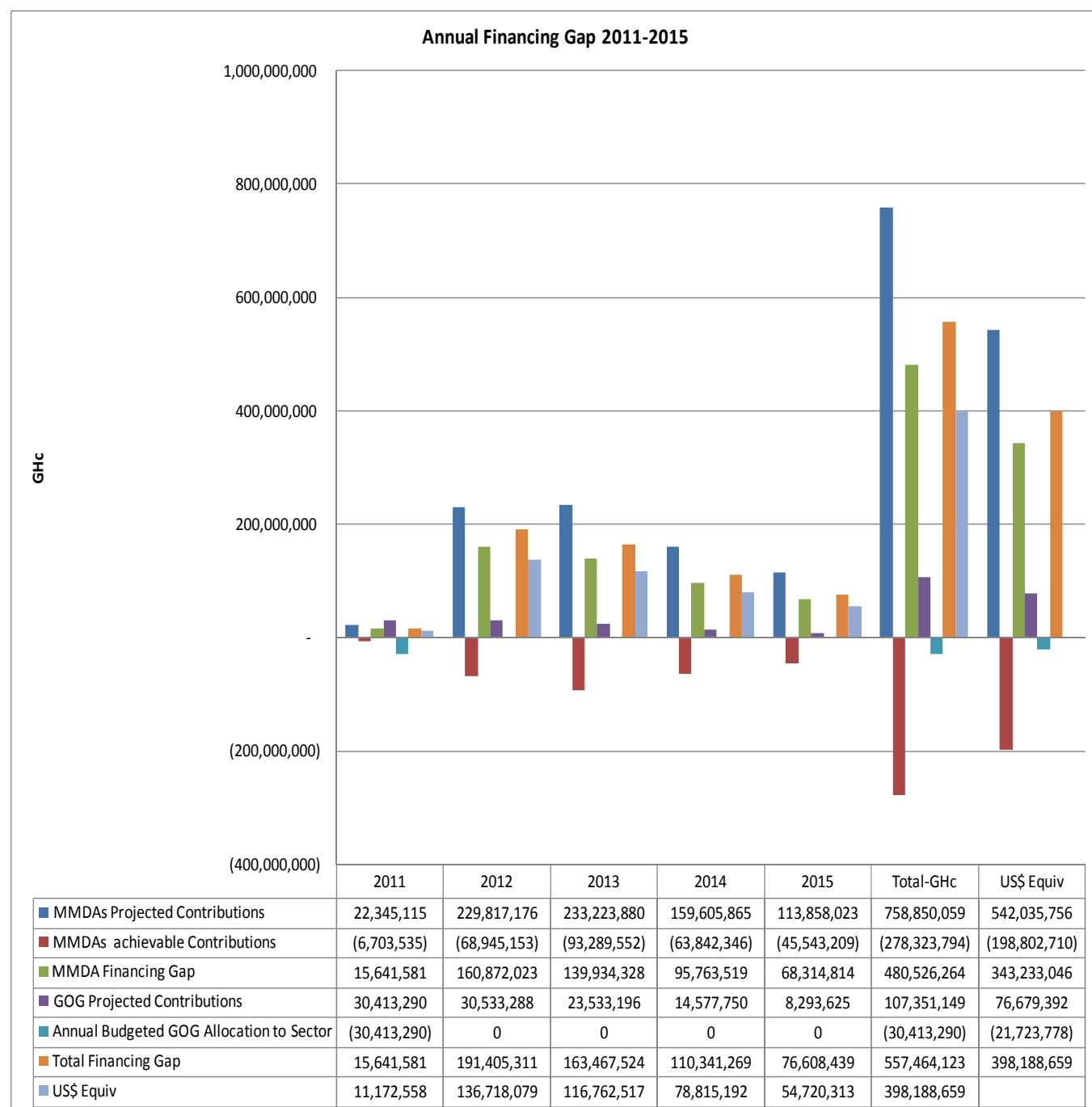


Figure ES 4: Annual Financing Gap 2011-2015

16. The options for financing the gap include the following:
 - a. Increase in the annual allocation of District Assemblies Common Fund (DACF) to be applied by MMDAs to fund their gaps. As an indication, increasing the current DACF level from 7.5%³ to 15% and “ring-fencing” the amount for environmental sanitation programmes to be implemented by MMDAs and national-level activities will cover the entire funding for the gap over the period. If the projected increase in DACF is not achieved, then additional sources will have to be resorted to.
 - b. Sourcing funds from various sectors of the economy which either impact or derive benefits from environmental sanitation services. (e.g. National Health Insurance Levy, Levy on plastic products etc.)
 - c. Central Government sourcing for loans, credits and grants from its Development Partners (DPs) including International Finance Institutions (IFIs)
17. To ensure focus and accelerated implementation of programmes, Government shall establish an independent board, National Environmental Sanitation Investment Management Board (NESIMBOD) to oversee the performance of investments and assure value-for-money in service delivery. In addition the NESIMBOD shall ensure “fair play” practices in the promotion of investments by all sector actors; private-private and private-public ventures.
18. The SESIP addresses the holistic and sustainable financing of the NESSAP to ensure the achievement of targets and the institutional arrangements put in place to ensure the maintenance of acceptable environmental sanitation standards.

³ The portion of DACF released to MMDAs in 2008 amounted GH¢116,448,111.

1. Background and Introduction

1.1 Background

19. Environmental Sanitation services continue to take more than 35% of municipal budgets besides periodic support from the District Assemblies' Common Fund⁴ (DACF) and other project-specific interventions by Development Partners including NGOs, yet the quality of services remains very poor.
20. The large backlog of un-served areas, inadequate operation and maintenance management leading to broken down infrastructure such as solid waste and excreta treatment plants⁵ all point to the urgent need for the development of coherent and effective strategies for implementing policy actions as well as harnessing the required resources for improving infrastructure and services.
21. The Ministry of Local Government and Rural Development (MLGRD) in response has worked with sector stakeholders to develop an Environmental Sanitation Policy (Revised, 2010) and a National Environmental Sanitation Strategy and Action Plan (NESSAP) for implementing the policy measures and related actions.
22. The medium-term national development policy framework, the Ghana Shared Growth and Development Agenda (GSGDA), 2010-2013, as well as the previous Growth and Poverty Reduction Strategy (GPRSII, 2006 – 2009) recognised this need and therefore prioritised the improvement of environmental sanitation systems⁶ by MMDAs. This is an important aspect of Ghana's quest for improving the human development and quality of life of its people.
23. The comprehensive National Environmental Sanitation Strategy and Action Plan (NESSAP) and the preparation of this Strategic Environmental Sanitation Investment Plan (SESIP) together are to lay the basis for initiating nation-wide action by all stakeholders including Service Users, Private Sector investors, MMDAs as well as the appropriate national-level institutions to gradually reverse the deficits and make incremental gains in improved service levels. This aspect of having a costed action plan is what has been lacking since the preparation of the first version of the Environmental Sanitation Policy in 1999.
24. The NESSAP has a planning horizon of 2010 – 2025 and this SESIP provides relevant financial framework over the period 2011 – 2015.
25. The SESIP, as part of the framework for environmental sanitation development, also has at its core the enabling requirement of raising awareness for behavioural change and thus envisions communities working towards achieving “zero waste” for disposal through gradual improvements. This philosophy is captured as part of the Material-in-Transition (MINT) concept as explained in the NESSAP in which case all materials are regarded as potentially useful inputs for subsequent processing and the need to carry out rapid Environmental Sanitation Assessment and Audits (ESAAs) at minimal costs to determine intervention envelopes for specific local communities.

⁴ DACF is financed through not less than 7.5% (since January 2008) of tax revenues of Ghana.

⁵ See State of Environmental Sanitation in Chapter 3 of National Environmental Sanitation Strategy and Action Plan (NESSAP)

⁶ Environmental sanitation systems refer to infrastructure and services for reaching the desired levels of services.

1.2 Objectives of the SESIP

26. The development objectives of the SESIP which are in line with NESSAP⁷ are:
- To ensure sustainable financing of environmental sanitation services.
 - To develop a strategy and financing plan with clear allocation of resources (and costs) to households, communities, MMDAs and the Central Government.
 - To improve public sector financing of environmental sanitation services.
27. The SESIP has three specific objectives:
- a. To establish costs of future service levels required for implementing the relevant strategies and actions of the Environmental Sanitation Policy (Revised, 2010) as provided in the NESSAP,
 - b. To propose an appropriate annual financing plan; and
 - c. To determine the annual *financing gap* to be funded to ensure the achievement of planned investments and activities.

1.3 The SESIP Model

28. The SESIP considers the costs borne for providing the current levels of services and provides the incremental costing and financing plan for investments required for improving the service levels over five years: 2011-2015.
29. The SESIP is strategic in nature. An important element is “deficit financing” - to determine the total costs of delivering services, the finances available and the computation of shortfalls referred to as the financing gap and then identifying sources to bridge the gap. Thus, current user fees from serviced customers and households as well as funding via Internally Generated Funds (IGFs), investments by the private sector and other sources, together with assumptions on future contributions from these sources, constitute important aspects of determining the financing gap.
30. The SESIP therefore takes on board key issues of Incremental Service Improvement Options (ISIOs) and enabling elements described in the NESSAP and as shown in Figure 1.1.
31. The SESIP model in summary, addresses the following issues:
- The expected contributions by various stakeholders to meet the levels of services;
 - The gap between contributions and actual costs;
 - Options for financing of the gap;
32. This first edition of the SESIP prepares the ground for reaching minimum service level options for all categories of environmental sanitation services by 2015. It is envisaged that the SESIP will be revised and updated periodically. Annual progress reports will be furnished to indicate performance.
33. The SESIP Model costs the following elements of environmental sanitation:

⁷ NESSAP, section 4.5, paragraph 365.

- Solid Waste Management;
- Liquid Waste Management;
- Storm Water Drainage and Sullage Conveyance;
- Health-Care and Special Industrial Wastes;
- *Enabling elements* (included here is Environmental Sanitation Education and Enforcement Management).

34. The modelling process and implementation framework applied in the course of developing the SESIP⁸ is in Figure 1.2 below.

⁸ A computer programme MINT*ESAA is under development to assist MMDAs, RCC-REHSD and EHSD/MLGRD in carrying out environmental sanitation performance assessments as part of planning and Results-Based Monitoring and Evaluation.

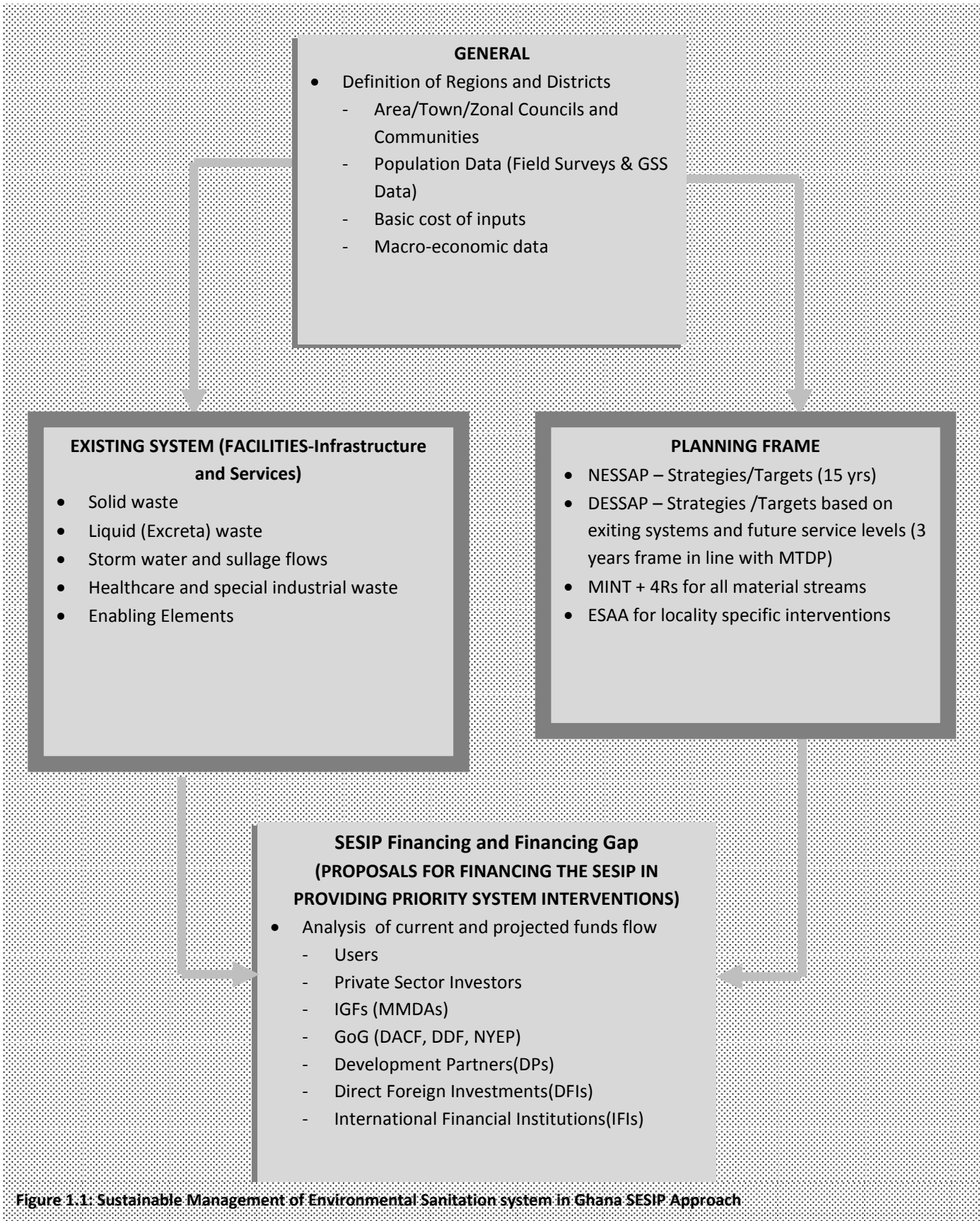


Figure 1.1: Sustainable Management of Environmental Sanitation system in Ghana SESIP Approach

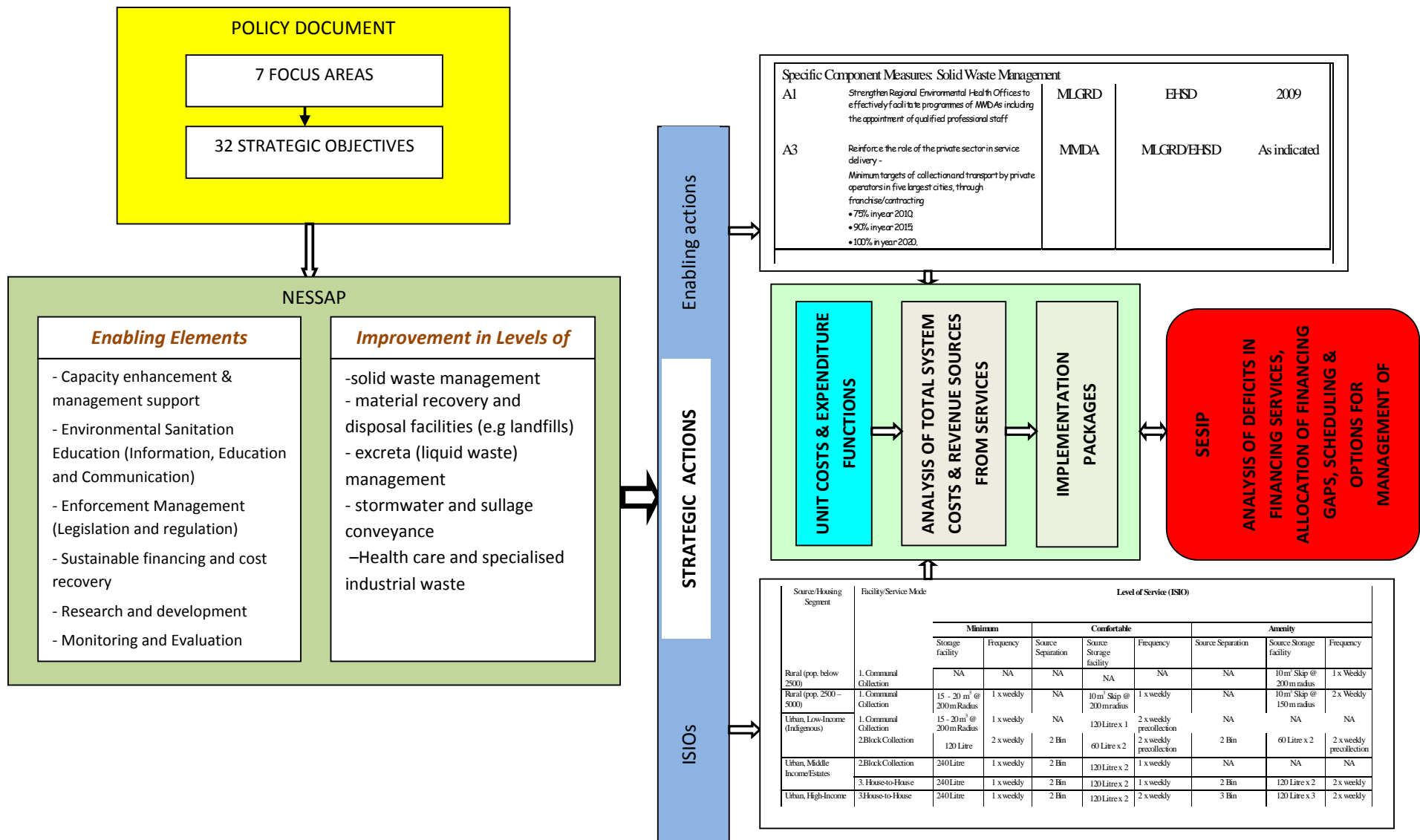


Figure 1.2: Model of process flow for measures, actions and implementation packages (NESSAP/SESIP)

2. MMDAs Financial Resources for Improving Services

2.1 Sources of Revenue

35. Financial resources available to MMDAs for the management of environmental sanitation services are traditionally the internally generated funds (IGFs) collected through the levying of annual rates fixed by the General Assembly
36. In the case of direct services rendered either by the MMDAs or private service providers, fees are collected from the users for recovering the cost. In most cases user fees are not adequate to cover the full cost of services compelling the MMDAs to look for other sources such as IGFs for making up the shortfalls. However, due to their small revenue bases and inefficient collection systems, as well as the competition for finance from other sectors of the assemblies, allocation for environmental sanitation management from IGFs is often inadequate.
37. The low-levels of the IGFs have necessitated the utilisation of a percentage of annual allocation of the District Assembly Common Fund (DACF). This situation has relieved a number of MMDAs of some financial burden for improving environmental sanitation services to the detriment of development projects.
38. The revenues available to MMDAs from IGFs, DACF and HIPC Funds for the period 2006-2008 are shown in Table 2.1.

Table 2.1: Revenues for MMDAs, 2006-2008

Revenues	2006	2007	2008
	GH¢	GH¢	GH¢
IGFs	31,984,444	40,705,317	47,380,612
DACF	90,515,198	89,266,122	116,448,111
HIPC	29,665,755	27,862,352	22,380,065
Total	150,994,536	157,833,791	186,208,788
US\$ Equiv.	107,853,240	112,738,422	133,006,277

Source: MLGRD

39. From Table 2.1 it is obvious that the total revenues both IGFs and DACF put together and dedicated to only environmental sanitation services will not be adequate to meet the cost.

2.2 MMDAs Expenditures

40. MMDA recurrent expenditures for the period 2006 and 2007 are shown in Table 2.2 below

Table 2.2: Recurrent Expenditures 2006-2007

	2006	2007
Expenditure Heads	GH¢	GH¢
Personnel Emoluments	23,367,933	31,337,235
Travelling and Transport	6,493,479	8,476,914
General Expenses	4,436,028	6,327,069
Repairs & Maintenance	1,394,664	2,298,481
Miscellaneous	9,578,225	15,948,428
Total Recurrent	45,270,329	64,388,127
DACF Funds for Environmental sanitation		6,466,677
Total	45,270,329	70,854,804
US\$ Equiv.	32,335,949	50,660,574

41. It is difficult to isolate the expenditures incurred solely on environmental sanitation by MMDAs since the uniform accounting codes for the preparation of financial statements do not have distinct codes for recording environmental sanitation expenditure. This notwithstanding, it can be argued that since the total recurrent expenditures are low, the environmental sanitation component is also low and cannot meet the future demands of the sector.
42. In recent years, the Ministry of Finance and Economic Planning (MOFEP) has had to make special allocations of funds to the MLGRD to support the five largest metropolitan assemblies of Accra, Kumasi, Sekondi-Takoradi, Tamale and Tema. HIPC Funds have also been applied for the metropolitan assemblies (AMA, KMA, STMA and TMA).
43. For example in 2007 and 2008, the MLGRD disbursed GH¢5,890,786 (US\$ 4,207,704) and GH¢ 17,634,967(US\$12,596,405) respectively from HIPC funds to support to environmental sanitation activities of AMA, KMA, STMA, TAMA and TMA. These were additional to their expenditures from IGFs and DACF.
44. The need to have a more sustainable means of financing environmental sanitation has become imperative as current levels of funding have proved to be inadequate for achieving and sustaining the desired service levels.

3 Cost of Improving Services and Infrastructure, 2011-2015

45. Table 3.1 presents a summary of the total cost for improving environmental sanitation infrastructure and services for the first phase of the programme from 2011 – 2015. The cost for the various components of the focus areas of the NESSAP amounts to GH¢1,317,661,087 (US\$941,186,491). Improvement in Levels of Service which constitute the “hardware” of the Programme amount to GH¢1,098,239,409 (US\$784,456,721) representing 83% of total cost. The Enabling Elements which constitute the “soft” component of the programme constitute 17% of the total cost. (see Figure 3.1).

Table 3.1: Summary of Total Cost of Infrastructure and Services-2001-2015

	Focus Areas	Total Cost (GH¢)	US\$ EQUIVALENT	% of Total Cost
Enabling Elements	Capacity Development	138,406,620	98,861,871	10.5%
	Information, Education & Communication	1,275,500	911,071	0.10%
	Legislation and Regulation	8,337,000	5,955,000	0.6%
	Sustainable Financing and Cost Recovery	403,955	288,539	0.03%
	Research & Development	636,170	454,407	0.05%
	Monitoring & Evaluation	70,362,433	50,258,881	5.3%
	Total Enabling Elements	219,421,678	156,729,770	16.7%
Levels of Service	Solid Waste Management	826,279,199	590,199,428	62.7%
	Excreta Management	236,075,000	168,625,000	17.9%
	Storm Drains & Sullage Conveyance	33,184,000	23,702,857	0.67%
	Healthcare Facility Waste Management	2,701,210	1,929,436	0.20%
	Total	1,098,239,409	784,456,721	83.3%
	TOTAL COST	1,317,661,087	941,186,491	100%

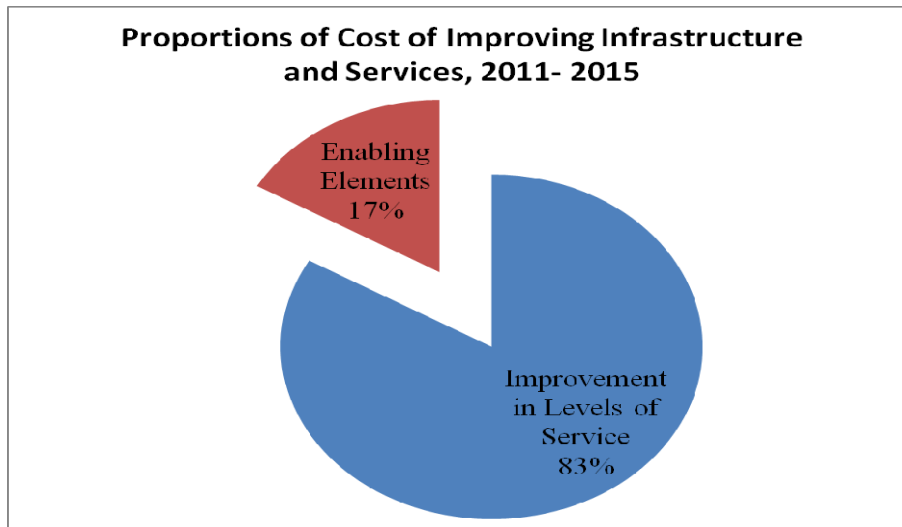


Figure 3.1: Proportions of Cost of Improving Infrastructure and Services, 2011-2015

46. Appendices 3.1-3.4 provide the detailed activities and cost for each component of service.
47. A further analysis of the cost shows that total recurrent expenditure amounts to GH¢842,634,346 (US\$601,881,676) (64%) and capital expenditure amount to GH¢475,026,741(US\$339,304,815(36%) (as shown in Table 3.2 and Figure 3.3).
48. Recurrent expenditure component of improvement in Levels of Service is GH¢628,241,168 (US\$ 448,743,691) and it constitutes seventy five percent (75%) of total programme recurrent cost and forty –eight percent (48%) of total programme cost. The capital expenditure component is GH¢ 469,998,241(US\$339,713,029) and it is forty three percent (43%) of total level of service cost and ninety –nine percent (99%) of total programme capital expenditure cost.
49. Enabling Elements is made up of a recurrent expenditure of GH¢ 214,393,178 (US\$ 153,137,984) being ninety –eight percent (98%) of total enabling elements cost and sixteen percent (16%) of total programme cost. The capital expenditure component of the enabling elements amount to GH¢5,028,500 (US\$3,591,786) constituting 1.1% of total capital expenditure and 2.3% of total cost of enabling elements respectively.

Table 3.2: Cost Components of Total Cost of Infrastructure and Services-2001-2015

	Focus Areas	Total Cost	RECURRENT	CAPITAL
Enabling Elements	Capacity Development	138,406,620	133,728,120	4,678,500
	Information, Education & Communication	1,275,500	925,500	350,000
	Legislation and Regulation	8,337,000	8,337,000.00	0
	Sustainable Financing and Cost Recovery	403,955	403,955.00	0
	Research & Development	636,170	636,170.00	0
	Monitoring & Evaluation	70,362,433	9,072,850.00	0
	Total Enabling Elements	219,421,678	214,393,178	5,028,500
Levels of Service	Solid Waste Management	826,279,199	599,682,168	226,597,031
	Excreta Management	236,075,000	3,875,000	232,200,000
	Storm Drains & Sullage Conveyance	33,184,000	24,684,000	8,500,000
	Healthcare Facility Waste Management	2,701,210	0	2,701,210
	Total Levels of Service	1,098,239,409	628,241,168	469,998,241
	TOTAL COST	1,317,661,087	842,634,346	475,026,741

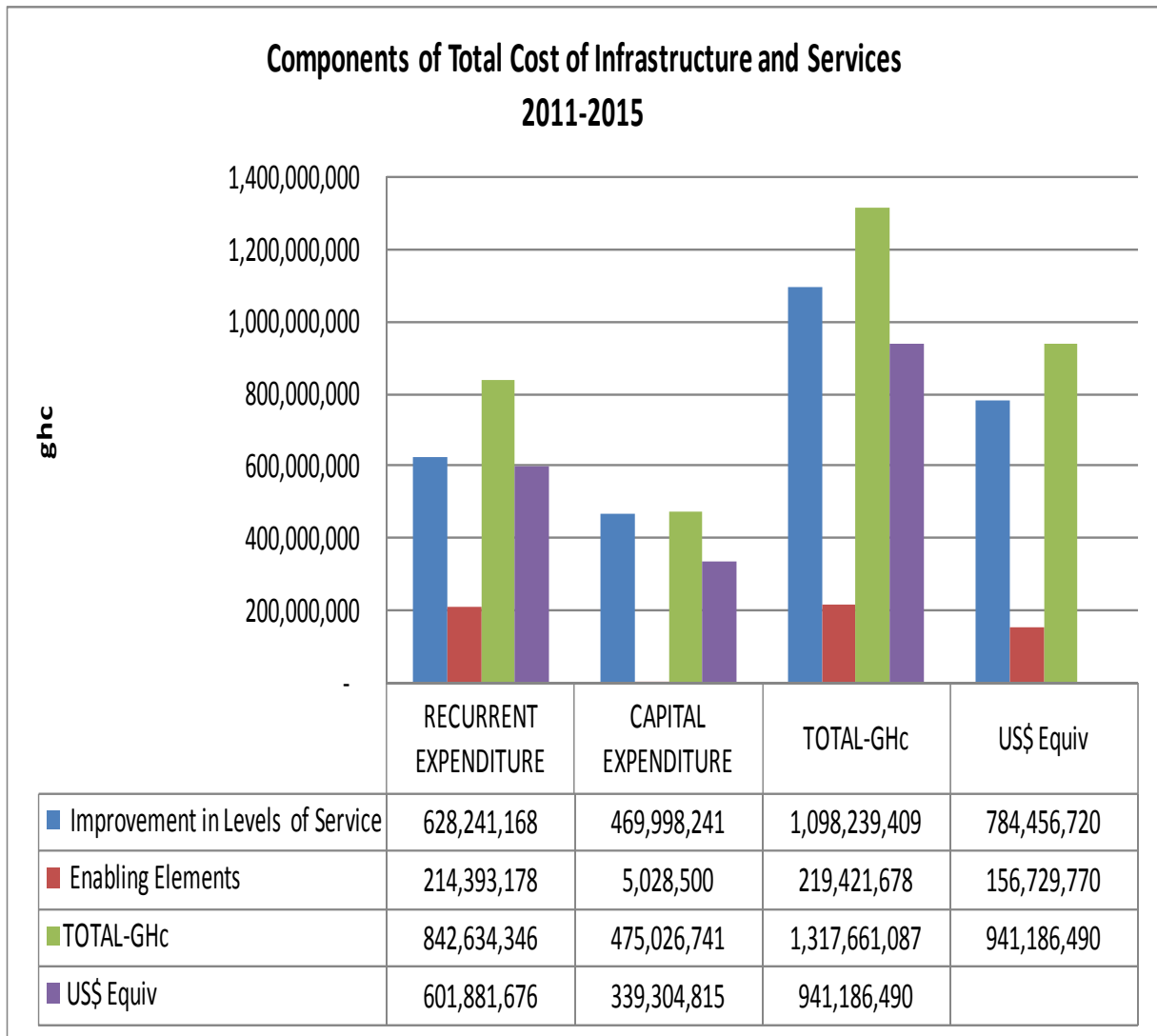


Figure 3.2: Components of Total Cost of Infrastructure and Services 2011-2015

3.1 Enabling Elements

50. The total cost of Enabling Elements is GH¢ 219,421,678 (US\$156,729,770) constituting 16.7% of total program cost.(Table 3.1)

Figure 3.3, and Figure 3.4 show the detailed components of the enabling elements and their cost compositions.

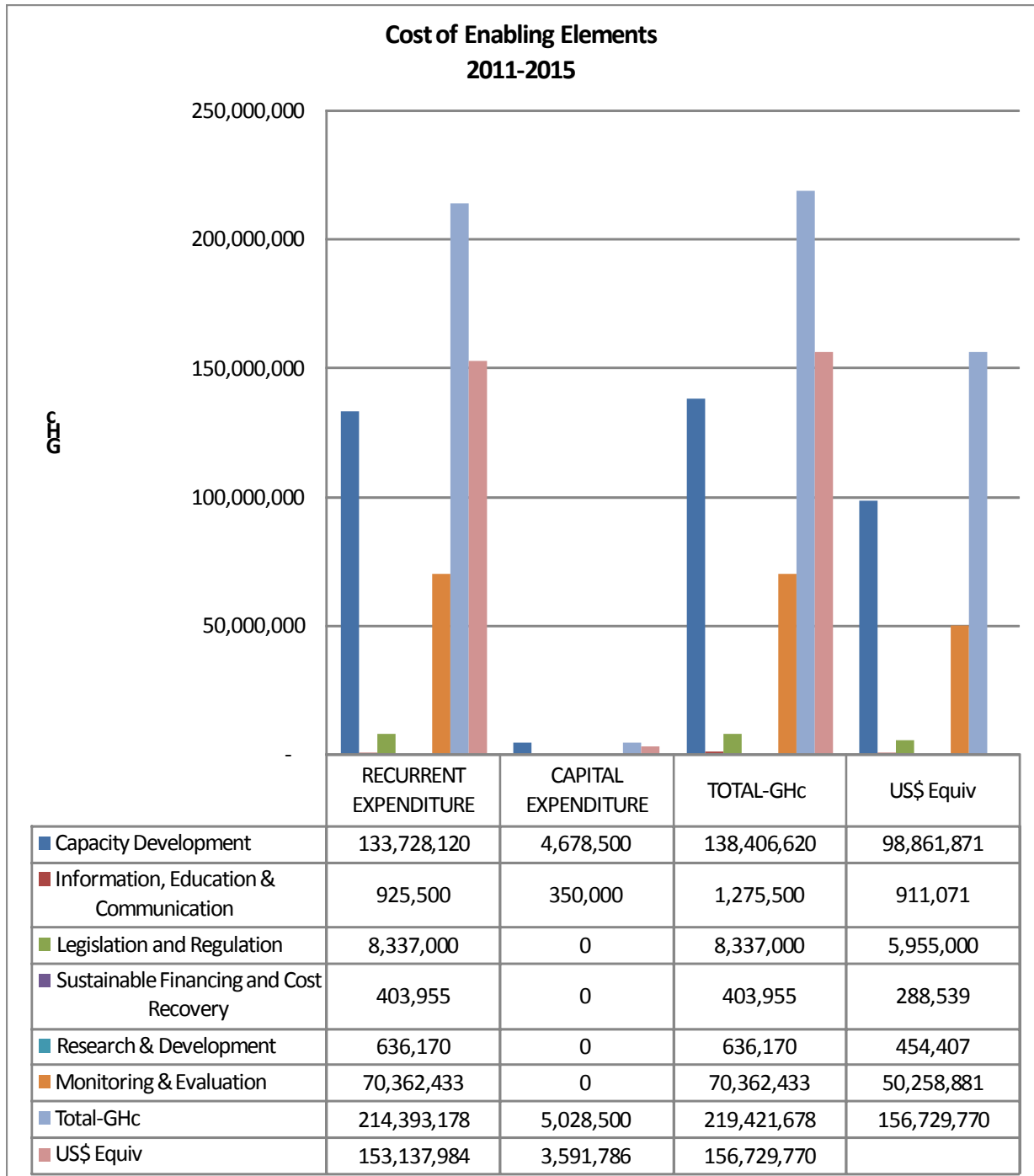


Figure 3.3: Cost of Enabling Elements 2011-2015

51. Recurrent expenditures constitute 98% of total cost of enabling elements thus confirming its “soft” nature. Capital expenditure component is only 2% of total cost of enabling elements, (See Figure .3.3 and Figure 3.4)

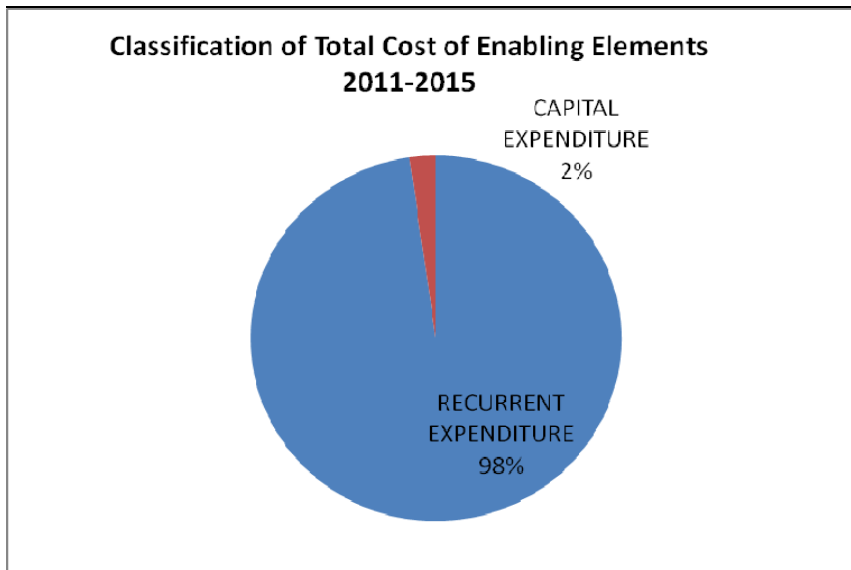


Figure 3.4: Classification of Total Cost of Enabling Elements 2011-2015

52. Capacity Development is the largest component of the enabling elements amounting to GH¢138,406,620 (US\$ 98,861,871) and it constitutes 10.5% of total SESIP and 63.8% of total enabling elements cost. The recurrent expenditure component amounts to GH¢133,728,120 (US\$95,520,086) while the capital expenditure component is GH¢ 4,678,500 (US\$3,341,786).
53. Information, Education & Communication cost amount to GH¢1,275,000 (US\$911,071). It comprises of a capital expenditure component of GH¢350,000 (US\$250,000) and recurrent expenditure of GH¢ 925,500 (US\$661,071). The total cost is 0.10% of total SESIP and 0.58% of total enabling elements costs.
54. Legislation and Regulation amounts to GH¢8,337,000 (US\$5,955,000) and it is a recurrent expenditure representing 0.6% of total cost and 3.8% of total enabling element cost.
55. Sustainable Financing and Cost Recovery cost is a recurrent expenditure and amounts to GH¢ 403,955 (US\$288,539) and it represents 0.03% of total cost and 0.8% of total enabling elements cost.
56. Research and Development cost is exclusively recurrent expenditure amounting to GH¢636,170 (US\$454,407) and represents 0.05% of total cost and 0.3% of total enabling elements costs respectively.
57. Monitoring and Evaluation cost is the second largest component of the enabling elements and it is exclusively a recurrent expenditure amounting to GH¢70,362,433 (US\$ 50,258,881). It constitutes 5.3% of total cost and 22.9% of total enabling elements cost.

3.2 Improvement in Levels of Service

58. The improvement in Levels of Service constitutes the largest portion of the total cost of implementing the SESIP, amounting to GH¢1,098,239,409 (US\$784,456,720) representing 83% of total cost. Figure 3.5 and Figure 3.6 shows the components of Levels of Service and their cost composition.

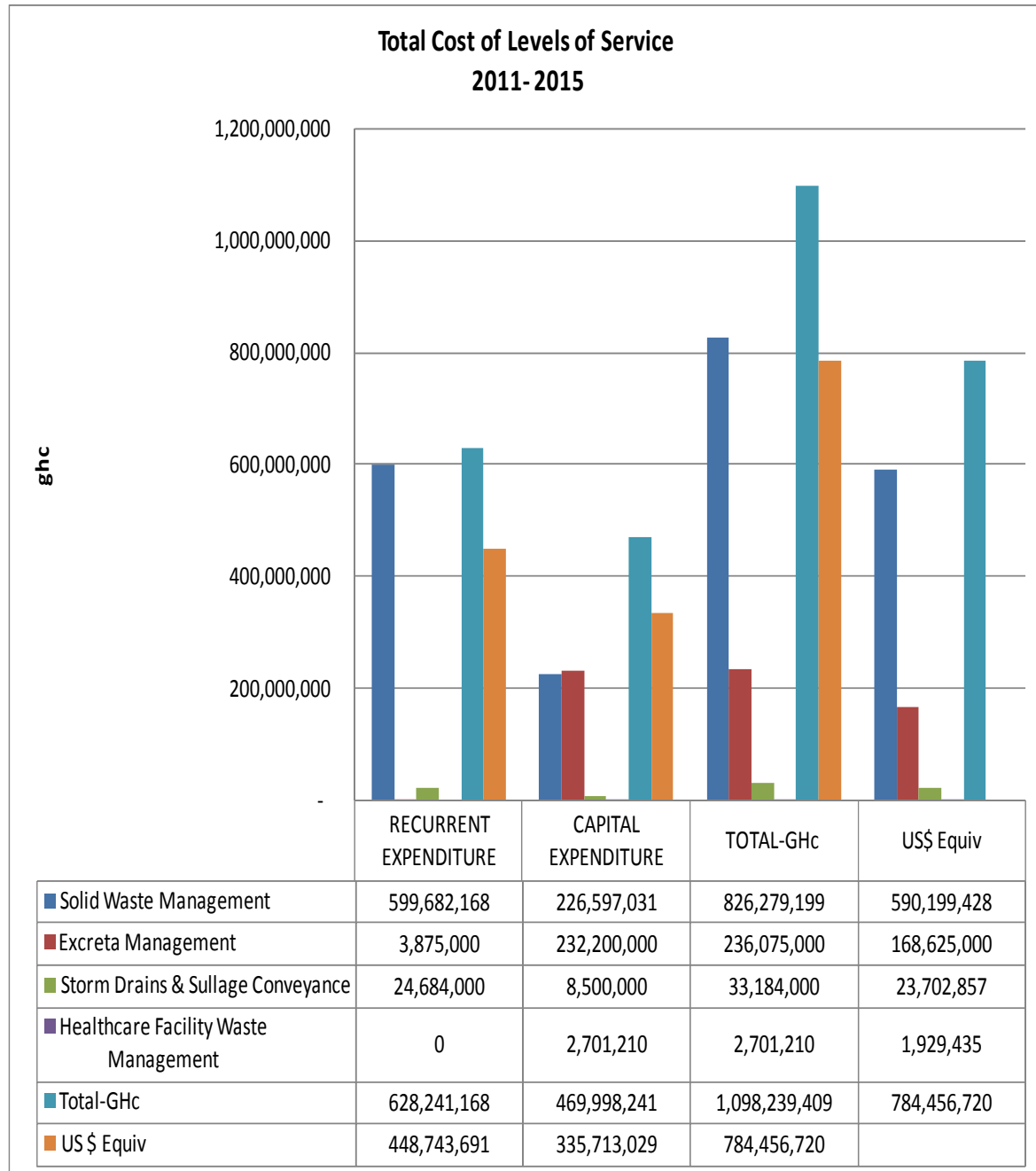


Figure 3.5: Total Cost of Levels of Service 2011-2015

3.1.1 Solid Waste Management (SWM)

59. Solid waste management cost - GH¢ 826,279,199 (US\$ 590,199,428) is seventy-five percent (75%) of cost of improving Levels of Service cost and 63% of total cost of implementing the SESIP. Seventy-three percent (73%) of total SWM cost covers recurrent expenditure.

3.1.2 Excreta Management

60. Excreta management costs-GH¢236,075,000 (US\$168,625,000) twenty one (21%) of Improvement in Levels of Service cost and eighteen percent (18%) of total programme cost. Capital expenditure – GH¢ 232,200,000 (US\$165,857,143) - forms the major portion (98%) and includes the cost of constructing school toilet facilities amounting to GH¢73,200,000 (US\$ 52,285,714) representing thirty -two percent (32%) of excreta management cost, seven percent (7%) of Levels of Service cost and six percent (6%) of total cost respectively.

3.1.3 Storm water Drainage and Sullage Conveyance

61. Storm-water drainage and sullage conveyance cost - GH¢33,184,000 (US\$23,702,857) - is three percent (3%) of total cost improving levels of service. Seventy four percent (74%) of the cost- GH¢ 24.684,000 (US\$17,631,428) is for recurrent expenditure.

3.1.4 HealthCare Facility Waste Management

62. Healthcare Facility Waste Management cost – GH¢ 2,701,120 (US\$1,929,435) – less than half a percent (0.2%) of improving levels of service cost and it is entirely a capital expenditure.

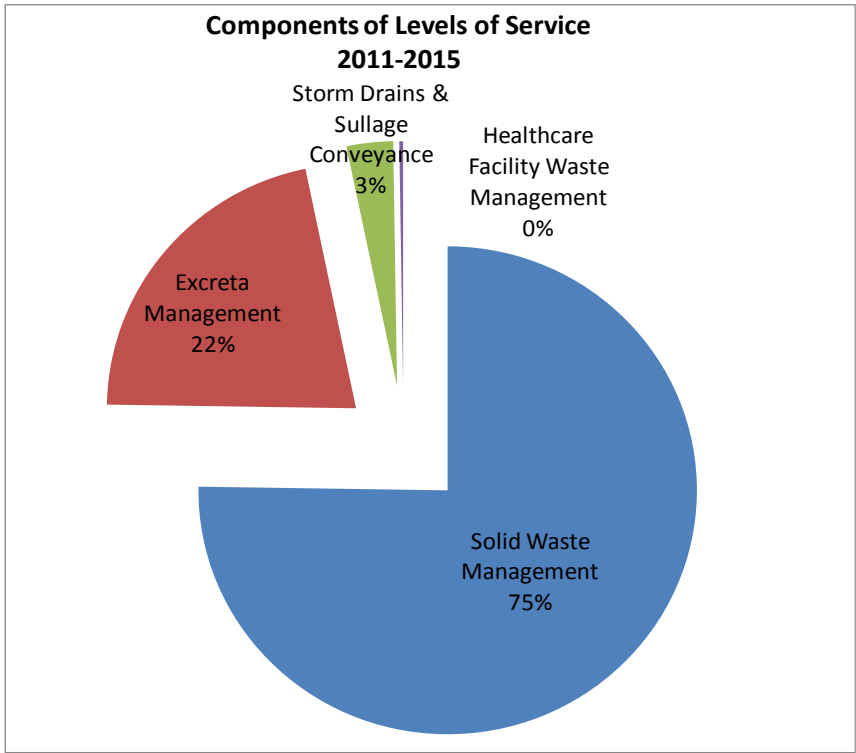


Figure 3.6: Components of Levels of Service, 2011-2015

4. Implementation Packages

55. All the components and their associated costs as analysed in Section 3 have been grouped into four (4) Implementation Packages in the NESSAP, namely:
 - i. Institutional Development and Capacity Enhancement Programme
 - ii. Community Participation and Public Awareness Programme
 - iii. Local Services Improvement Programme
 - iv. Research, Performance Monitoring and Governance Programme
56. The packages are to be implemented within the 1st phase of the plan commencing from 2011 up to 2015. Each package covers the planned activities to be carried out within a specific time-frame.
57. The summary of the costs for the Implementation Packages is as provided in Figure 4.1. The relative proportions of costs are also shown in Figure 4.2. Appendix 4.1 provides the tables for the packages as well.

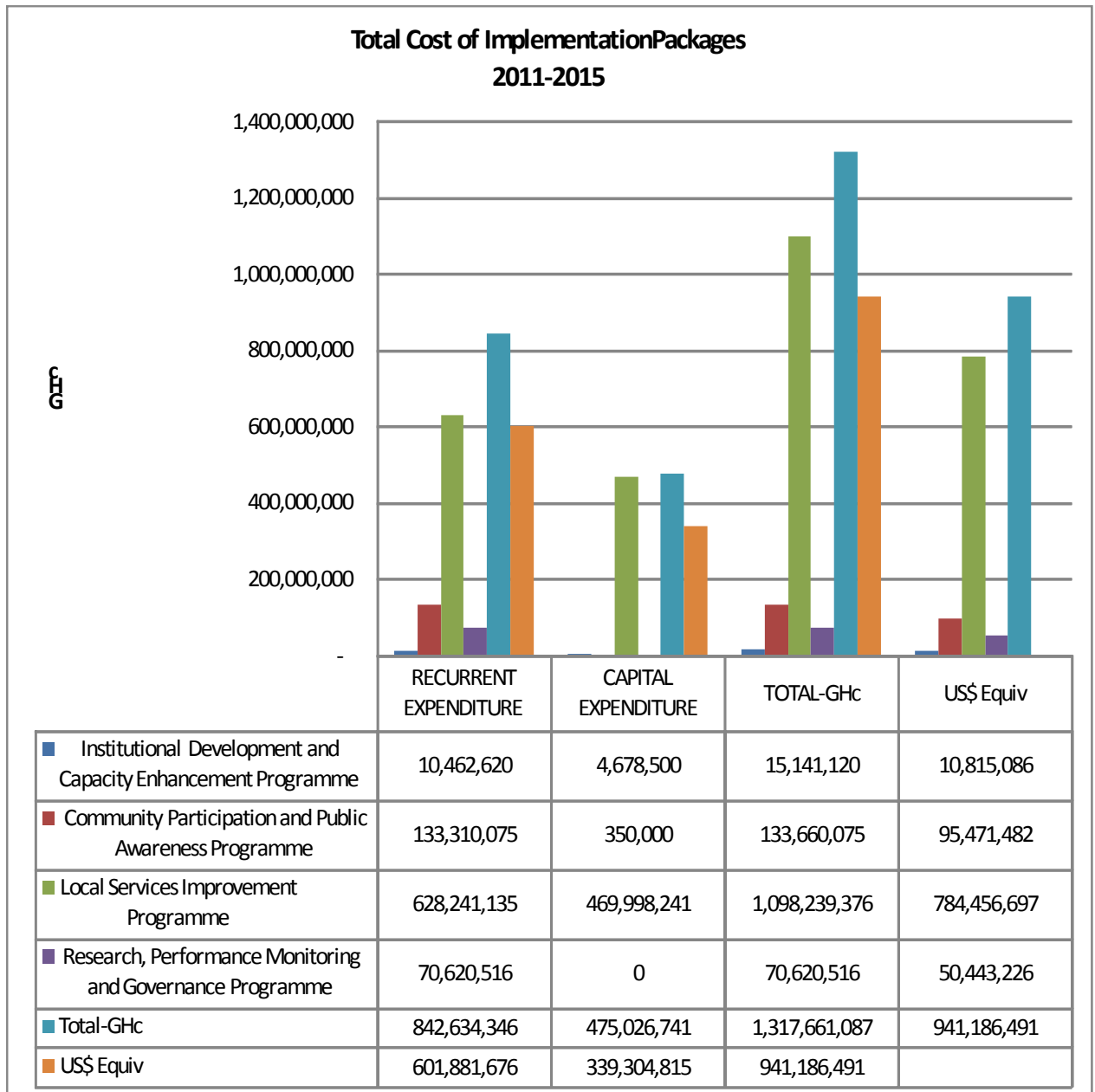


Figure 4.1: Summary of Cost of Implementation Packages 2011-2015

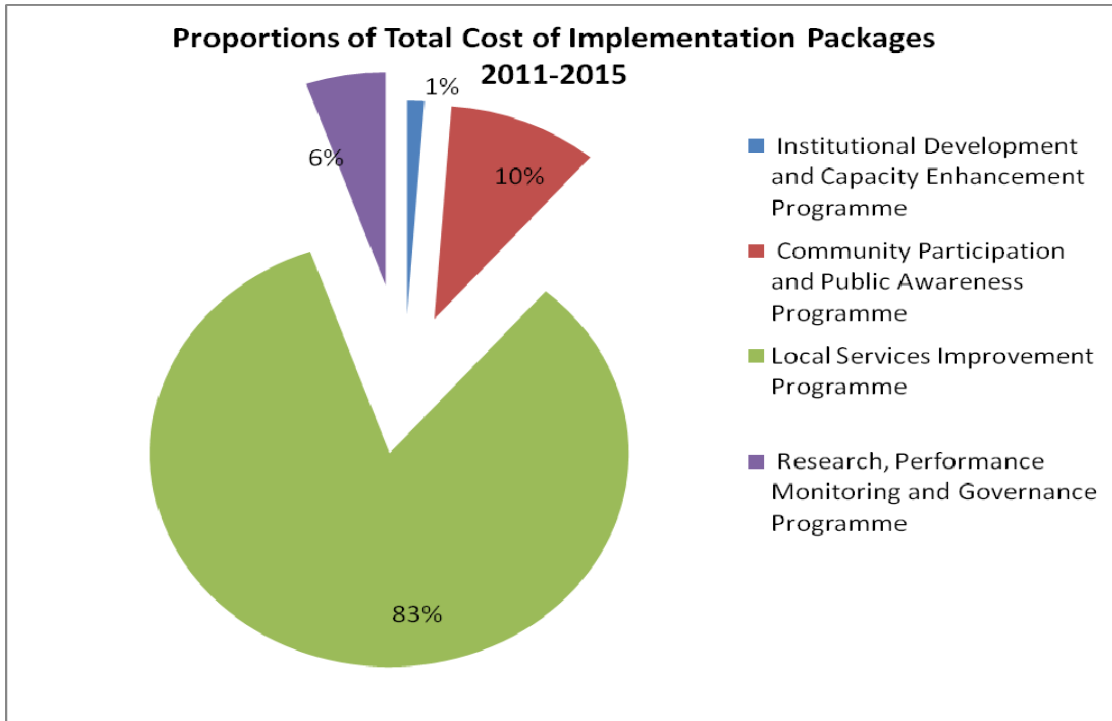


Figure 4. 2: Proportion of Cost of Implementation Packages (%)

58. As shown in Figures 4.1 and 4.2, Institutional Development and Capacity Enhancement Programme is one percent (1%), Community Participation and Public Awareness- ten percent (10%), Local Services Improvement Programme -eighty-three percent (83%) Research, Performance Monitoring and Governance Programme-six percent (6%) respectively of the total Programme cost.
59. Based on the time frames, annual implementation plans and budgets have been prepared for the entire programme to ensure regular cash flows, and enable monitoring and control of implementation. The highest costs are expected to occur in the second and third years (2012 and 2013) amounting to GH¢365.2 million (US\$260.8million) and GH¢388.0 million (US\$277.1million) respectively. The summary of the annual costs of Implementation Packages is shown in Figure 4.3.

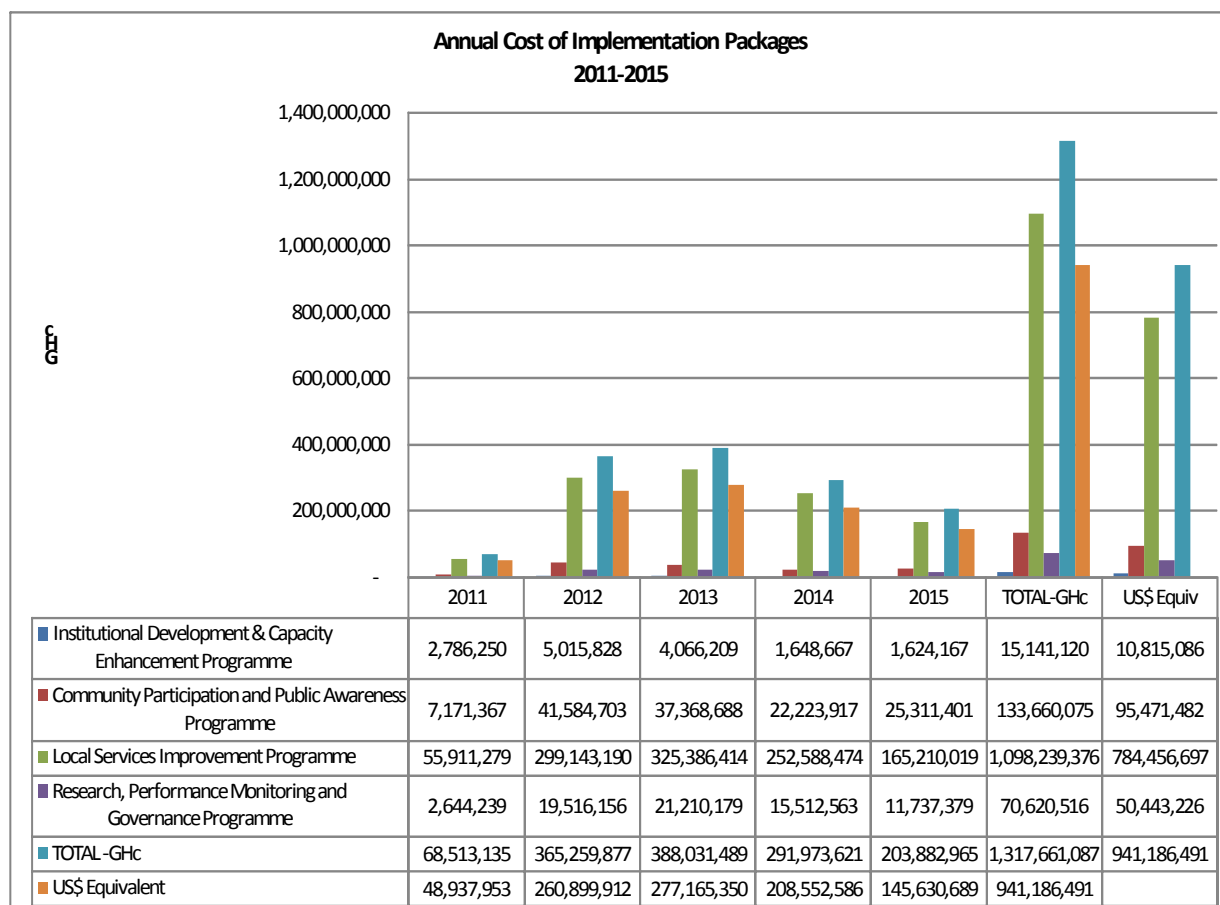


Figure 4.3: Annual Cost of Implementation Packages 2011-2015

60. The elements of the implementation packages are explained further and the annual cost of each implementation package is graphically represented in the following paragraphs:

4.1 Institutional Development and Capacity Enhancement Programme

61. This component of the implementation plan is for capacity development of the environmental sanitation sector, particularly those activities that when carried out within the short- to medium-term will have immediate impact on how sector staff will be enabled to provide the necessary facilitation and oversight of planned activities and interventions. The main activities are shown in Appendix 4. and Figure 4.4. The total cost of the Programme is GH¢15,141,120 (US\$10,815,086).

62. The annual implementation plan and costs is shown in Figure 4.4. From the figure the largest portion of the programme -GH¢5,477,500 (US\$3,912,500) - is for the strengthening of Environmental Health and Sanitation Directorate (EHSD)/Regional Environmental Health and Sanitation Directorates (REHSDs). Also to be carried out in each year is specialised training programmes amounting to GH¢4,267,500 (US\$3,048,214) over the first phase of the plan. Upgrading of the Schools of Hygiene will be carried out in the 2nd and 3rd years at a total cost of

GH¢2,571,000(US\$1,836,429). Provision of equipment and tools will be provided in the second and third years all totalling GH¢1,800,000. (US\$1,285,714).

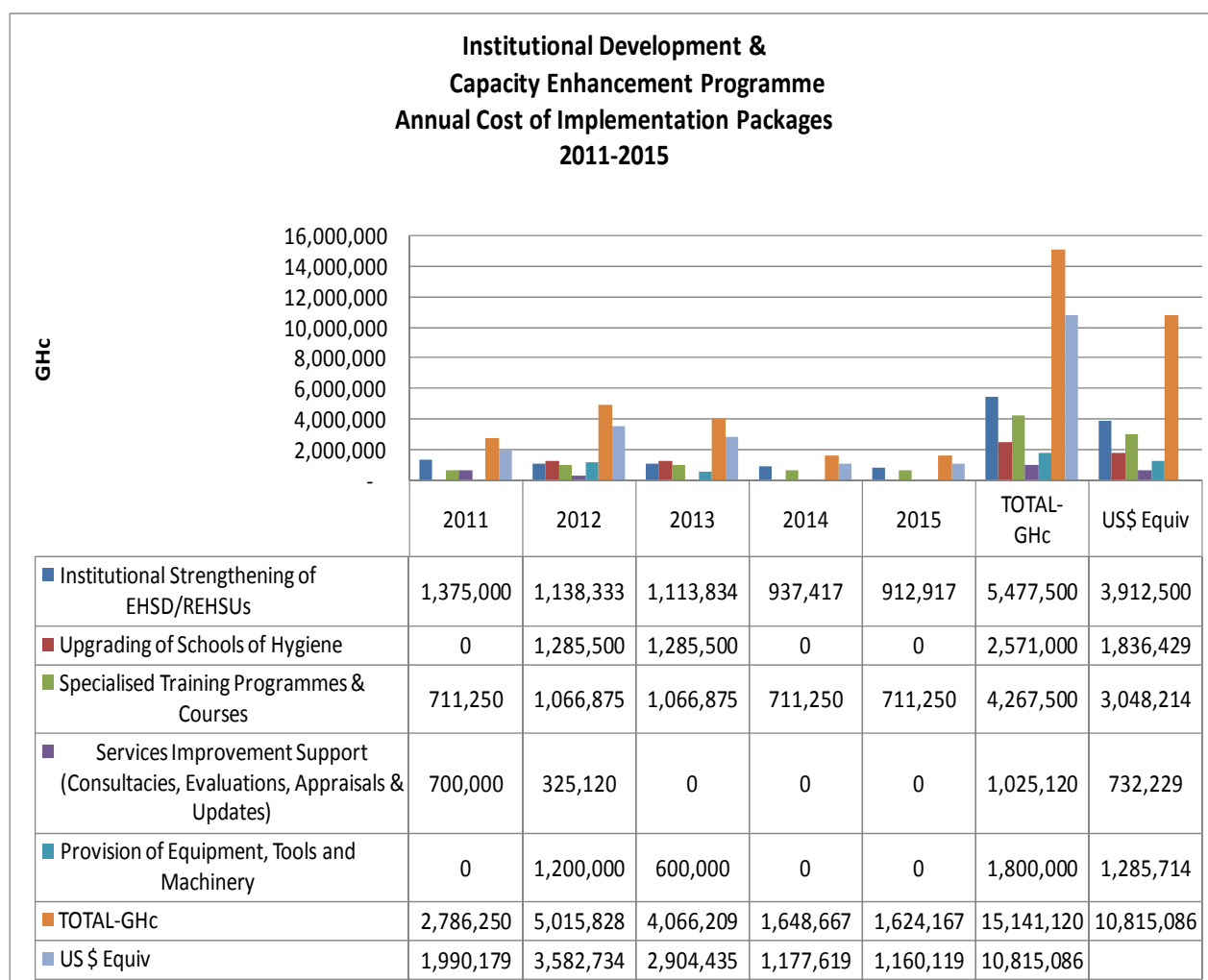


Figure 4. 4: Annual Cost of Institutional Development and Capacity Enhancement Programme 2011-2015

63. The highest expenditure will be incurred in 2012 and 2013 amounting to GH¢5,015,828 (US\$3,582,734) and GH¢4,066,209 (US\$2,904,435) respectively.

4.2 Community Participation and Public Awareness Programme

64. The Ghana Shared Growth and Development Agenda (GSGDA), 2010 -2013, recognises this important element and has therefore made Behavioural-Change-Communication (BCC) an important aspect of delivering all sector plans. Under BCC, it is observed in the GSGDA that “a *critical development challenge facing the country is the non-alignment of citizens’ life-styles with demands of modernisation, due largely to ignorance, and resulting in self-inflicted vulnerabilities, and therefore the spending of scarce public resources on preventable expenditures. Negative attitudes towards time, work, care of public property, health, education, human*

rights, safety, reproductive rights, disability, etc need to be tackled head-on to ensure the alignment of the national psyche to the development vision of the country”.

65. The NESSAP recognised this challenge and defined the Community Participation and Public Awareness Programme. This programme focuses mainly on behavioural change communication and social marketing issues to meet the awareness raising theme of the framework for environmental sanitation. It is central to achieving incremental improvements for local services including household latrine promotion and improved refuse collection, management and cost reduction strategies.
66. The activities cover Environmental Sanitation Education (covering all aspects of Information, Education and Communication, IEC), and Enforcement Management (comprising Legislation and Regulation). The activities also include rolling out a country-wide Community Led Total Sanitation (CLTS) programme.
67. Programme implementation will be carried out to ensure synergy with other sanitation and hygiene education initiatives such as those under School Health Education Programme (SHEP) and Community Water and Sanitation Agency (CWSA).
68. The key activities and costs are shown in Figure 4.5. Details are provided in Appendix 4.
69. The total implementation cost of the programme is GH¢ 133,660,000 (US\$95,471,429). Budgeted expenditures are higher in 2012 and 2013 amounting to GH¢41.5 million (US\$29.7 million) and GH¢37.3 million (US\$26.7 million) respectively.
70. CLTS constitutes the largest cost of the package amounting to GH¢ 124,117,500 (US\$88,698,214) with 2012 and 2013 incurring the largest expenditures of GH¢39.3 million (US\$ 28.1 million) and GH¢35.2 million (US\$25.1 million) respectively.
71. Enforcement management for services improvement follows with a total cost of GH¢ 8,226,000 (US\$5,875,714). Annual budgeted expenditures for 2011, 2014 and 2015 is GH¢ 1,371,000 (US\$ 979,285) and 2012 and 2013 is GH¢2,056,500 (US\$ 1,468,929) respectively.

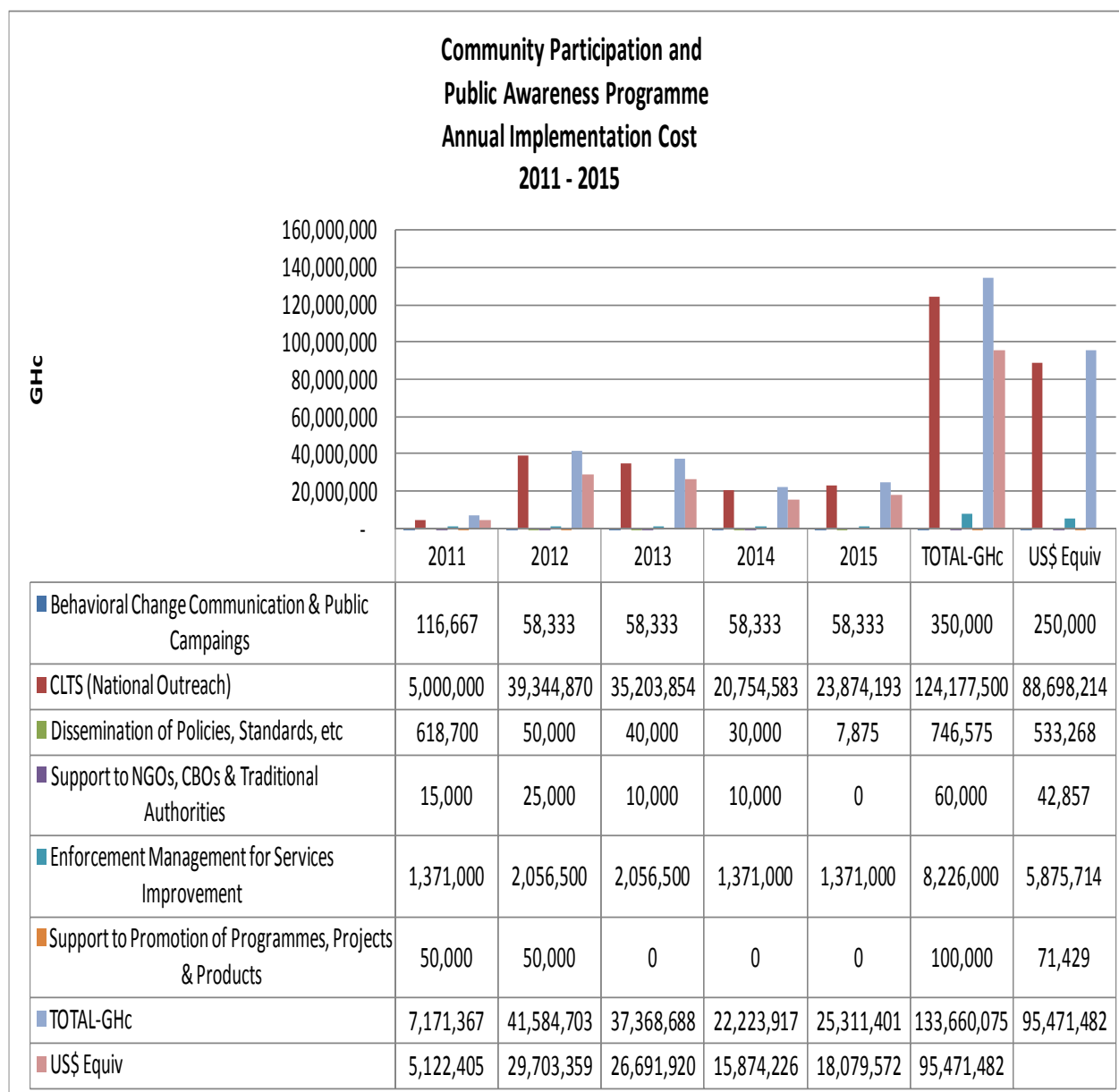


Figure 4.5: Community Participation and Public Awareness Programme-Annual Implementation Costs 2011-2015

4.3 Local Services Improvement Programme

72. This programme essentially covers the activities for reaching minimum levels of service during the first phase of the SESIP. It covers the various services and they are indicated in detail in Appendix 4.
73. Figure 4.6 shows the total and annual implementation costs for each component of the programme. The total cost of the programme amounts to GH¢1,098,200,000 (US\$784,428,571).

74. Solid waste service improvement cost constitutes the highest component of the programme amounting to GH¢ 826,279,000 (US\$590,199,286) being 75% of total improvement cost (see Figure 4.6). The highest costs will be incurred in 2012 and 2013 amounting to GH¢299.4 million (US\$213.8 million) and GH¢ 324.9million (US\$232.0 million) respectively.

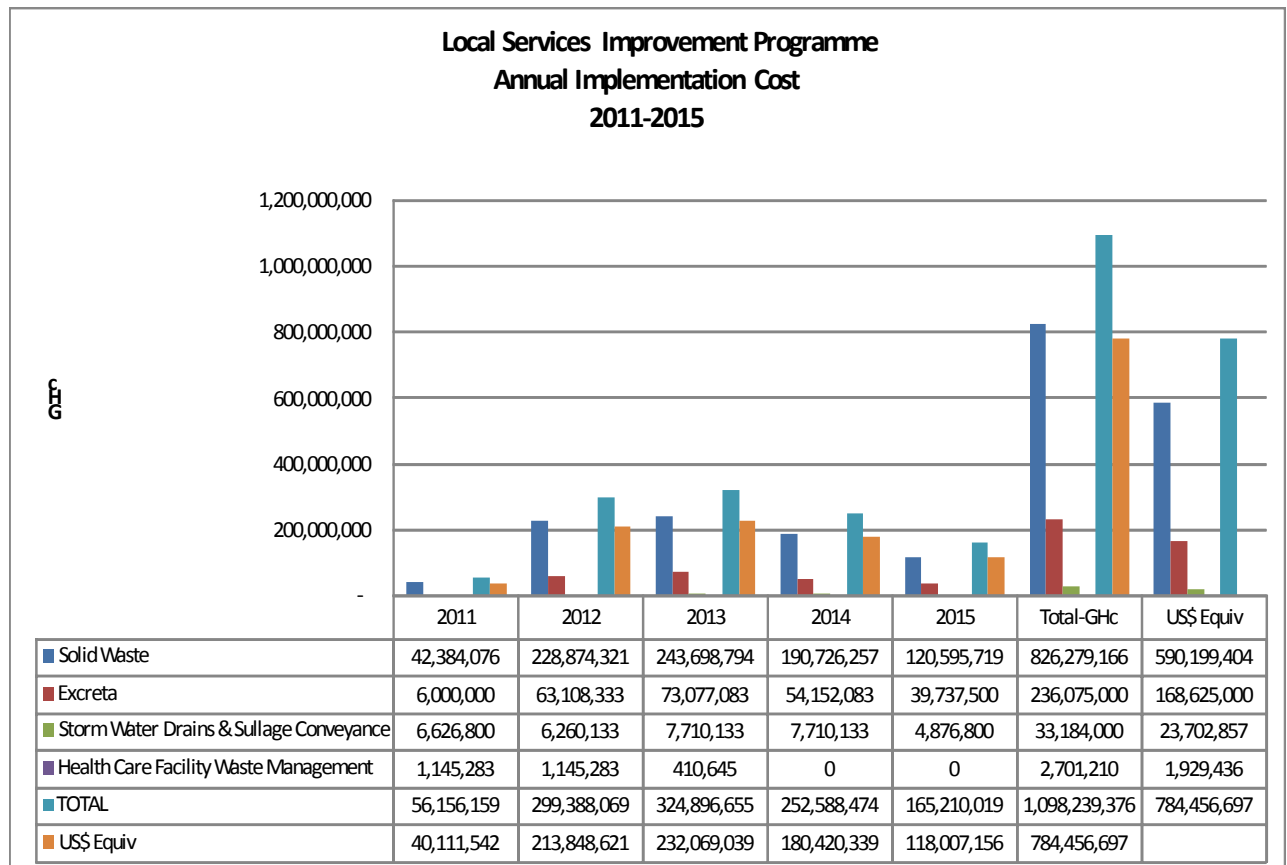


Figure 4.6: Annual Implementation Costs of Local Service Improvement Programme 2011-2015

75. Excreta management cost amounts to GH¢236,075,000 (US\$168,625,000) and is 22% of the level of programme cost and. includes the cost of constructing school toilet facilities amounting to GH¢73,200,000 (US\$ 52,285,714) representing thirty -two percent (32%) of excreta management cost.
76. Storm water drainage and sullage conveyance component cost amount to GH¢33,184,000 (US\$23,702,857) representing 3% of the improvement programme.
77. Healthcare facility waste management cost account for less than one percent (1%) of service improvement costs and amounts to GH¢ 2,071,200. (US\$1,479,429).

4.4 Research, Performance Monitoring and Governance Programme (RPMGP)

78. The Research, Performance Monitoring and Governance Programme (RPMGP) have elements that cover Financing and Cost Recovery, Research and Development, and Results-Based Monitoring and Evaluation, as well as requirements for overall plan management. The details of programme activities are shown in Figure 4.7 and details presented in Appendix 4.
79. The LSIP Management Support component will cover management support costs incident on the EHSD and REHSDs and regional collaboration institutions for facilitating incremental service improvements at MMDA level.
80. The LSIP Management Support cost also includes costs for establishing any institutional structures that will be required for the effective implementation of the SESIP.
81. Figure 4.7 shows the total cost and the annual implementation cost of the package. The total implementation cost is GH¢70,620,516. (US\$50,443,226).

**Research, Performance Monitoring
and Governance Programme
Annual Implementation Cost
2011 - 2015**

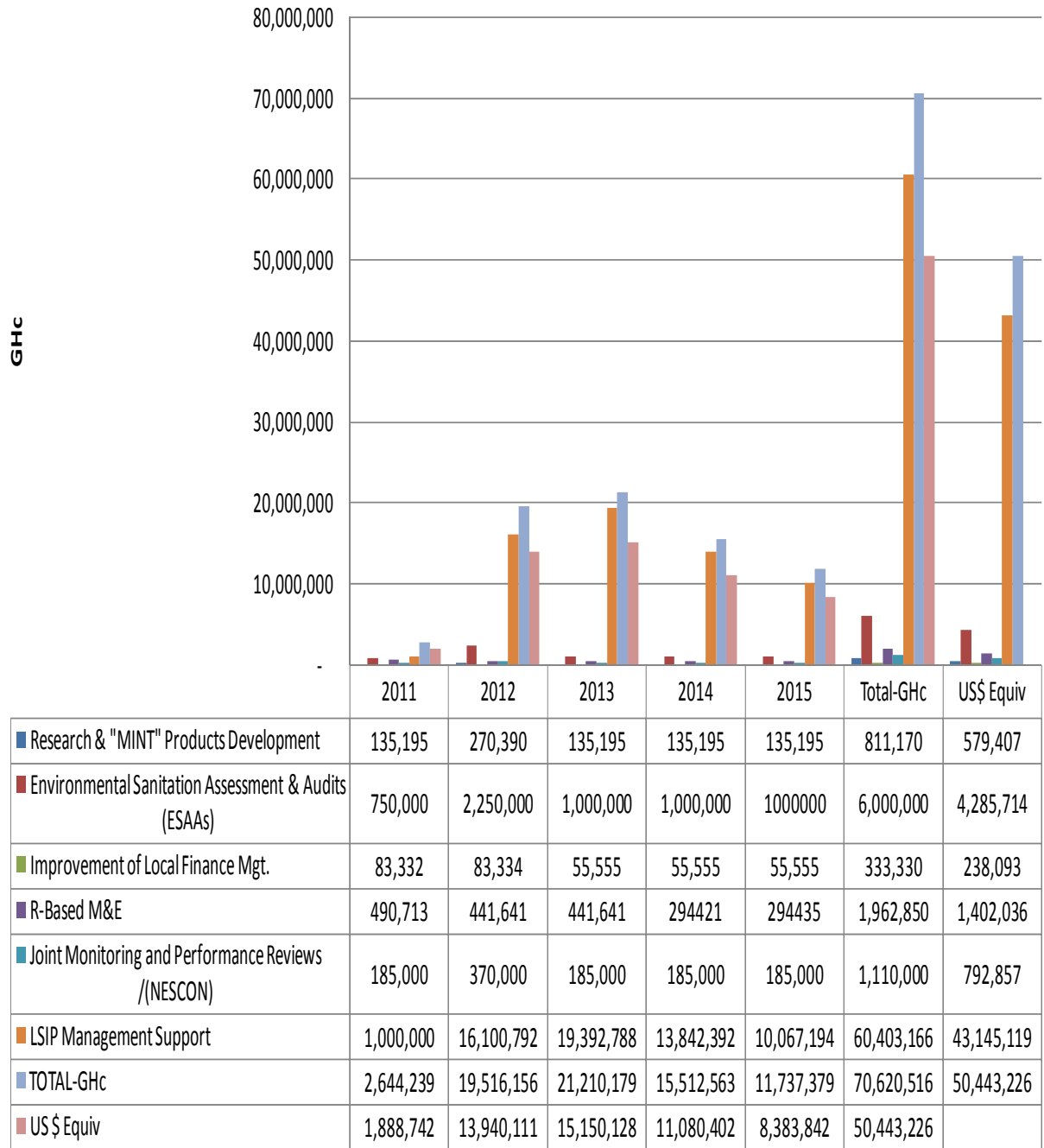
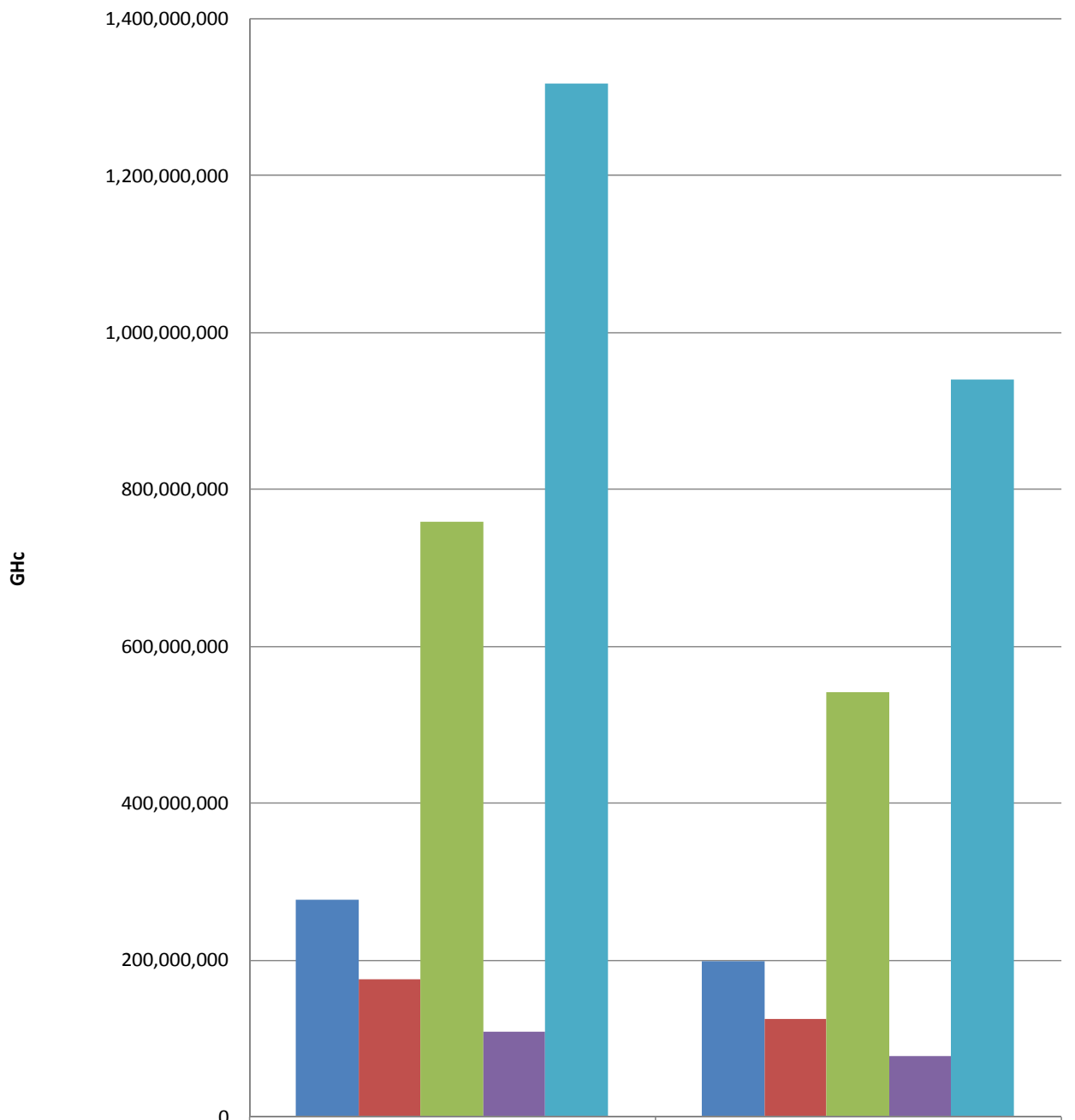


Figure 4.7: Annual Implementation Costs-Research Performance Monitoring and Governance Programme 2011-2015

5. Financing the Implementation Packages

82. The plan for financing the cost of the implementation packages has been drawn by taking into consideration the expected roles and responsibilities of all stakeholders in the delivery of environmental sanitation services and applying the polluter-pays principle, total cost recovery as stipulated in the Environmental Sanitation Policy (Revised, 2010) where appropriate.
83. All the activities in the implementation packages have been assessed and costs allocated to specific stakeholders. The stakeholders identified to bear implementation costs are as follows:
- (i) **Individual service users** – responsible for paying user fees for direct services rendered;
 - (ii) **Private sector investors** - investing, owning and /or providing environmental sanitation services as agents of MMDAs and also owning MINTING facilities for the reduction /recycling of wastes.
 - (iii) **MMDAs** - major stakeholders in the delivery of environmental sanitation services- investing, owning and/or providing/supervising the delivery of environmental sanitation services; and also implementing the enabling elements of the programme and recovering cost of both direct services and the enabling elements through their fee-fixing mechanisms.
 - (iv) **The Government of Ghana** - responsible costs attributable to central government agencies such as the Environmental Health and Sanitation Directorate and other institutions not covered under “i-iii” above.
84. Based on the defined roles and responsibilities of the stakeholders in delivery of services, the total cost of the implementation plan has been allocated as shown in Figures 5.1 and 5.2. Details are presented in Appendix 4. Figure 5.3 also shows stakeholders’ share of financing each Implementation Package.

Financing Plan of Cost of Implementation Packages 2011-2015



	Ghc	US\$ Equiv
■ User Fees	276,949,030	197,820,735
■ Private Sector Investors	174,510,850	124,650,607
■ MMDAs	758,850,059	542,035,756
■ GOG	107,351,149	76,679,392
■ Total	1,317,661,087	941,186,491

Figure 5.1: Financing Plan of the Implementation Packages 2011-2015

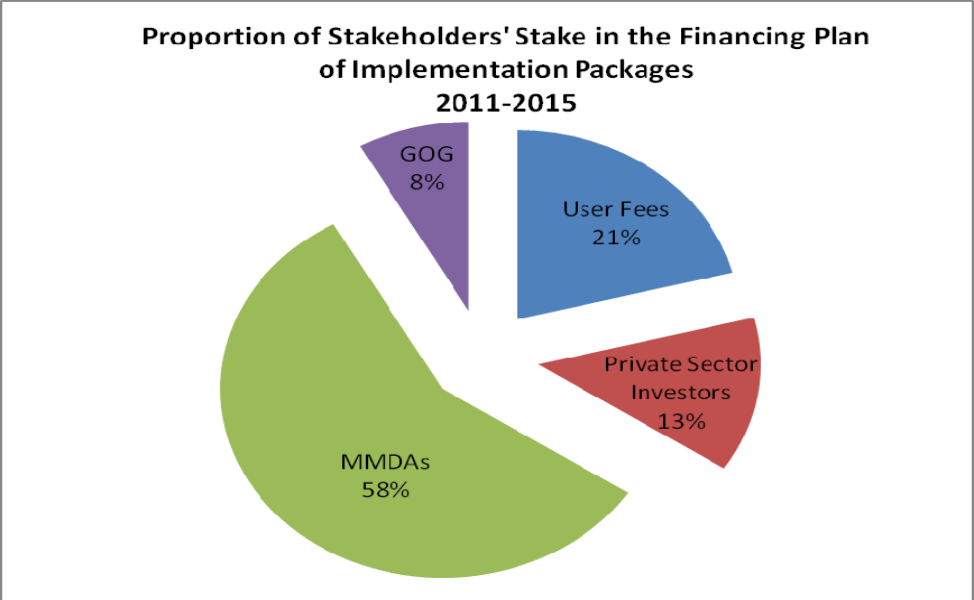


Figure 5.2: Proportions of Financing Plan of Implementation Packages 2011-2015

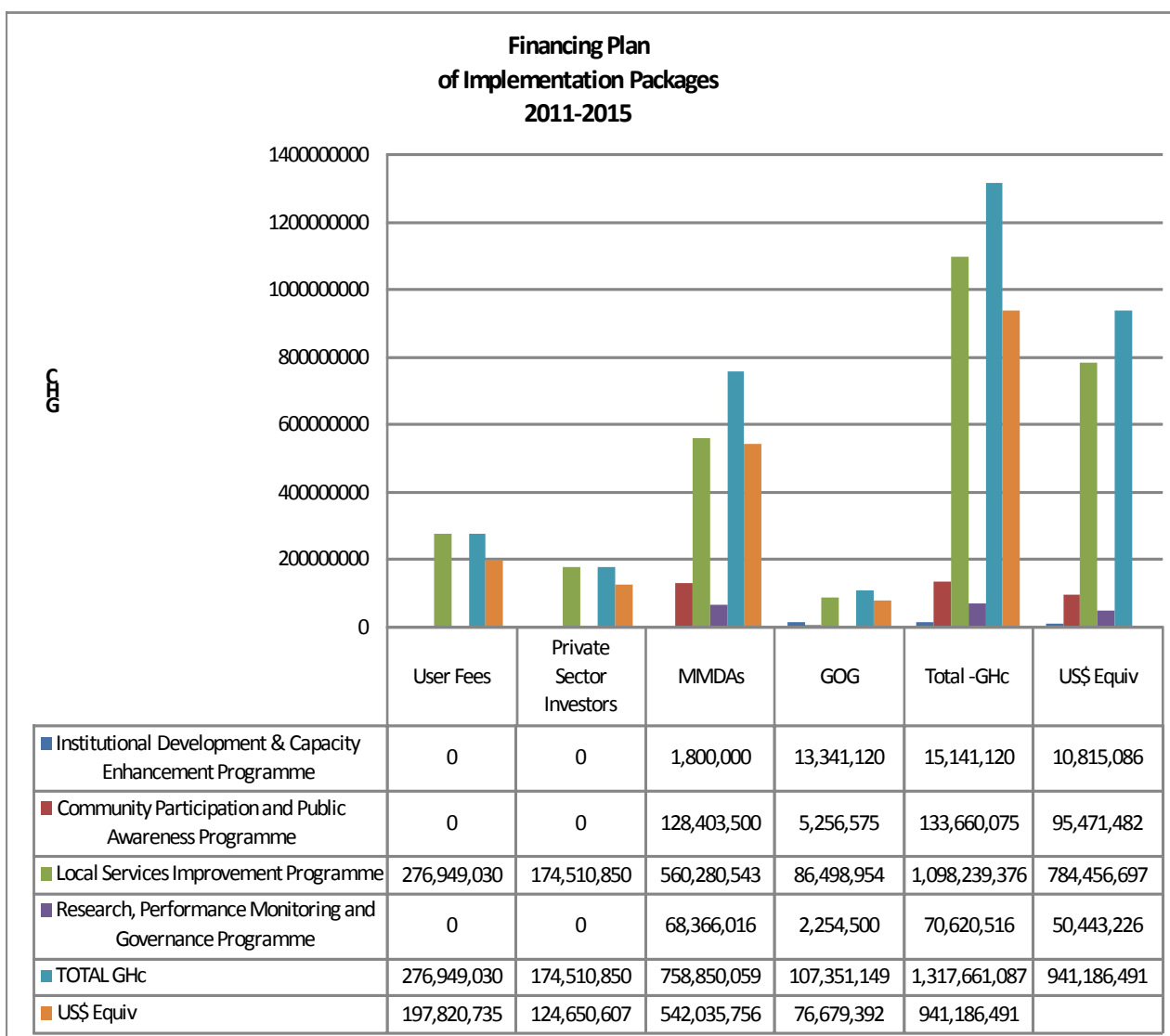


Figure 5.3: Stakeholders stake in each Implementation Package 2011-2015

85. As shown in Figure 5.1 – Figure 5.3, User fees from individuals for the entire first phase of the plan period amounts to GH¢276,949, 030 (US\$ 197,820,735) representing twenty one percent (21%) of total implementation cost.
86. Private sector involvement in the provision of environmental sanitation services by way of capital investments for delivery of services and *minting* of waste for recovering and recycling amount to GH¢174,510,850 (US\$ 124,650,607) accounting for thirteen percent (13%) of total funds required over the period 2011 - 2015.
87. The MMDAs being the frontline institutions with the responsibility for delivering environmental sanitation services are expected to fund fifty eight percent(58%) of the total implementation costs amounting to GH¢758,850,059 (US\$542,035,756).

88. The MMDAs are responsible for the execution of major components, especially services throughout the plan period. The highest cost to be borne by the MMDAs is for the incremental improvement of services under the Local Services Improvement Programme which amounts to GH¢560,280,543(US\$400,200,388) (see Figure 5.3). This represents the portion of costs expected to be settled from MMDAs' internally generated funds and other sources apart from direct user fees. MMDAs are also responsible for undertaking capacity enhancement and research work at their levels.
89. The Government of Ghana (GoG) will be responsible for financing activities to be carried out by the MLGRD/EHSD and other central level institutions. Its contribution is GH¢107,351,149 (US\$49,681,004) and represents eight percent (8%) of total plan cost over the first phase.

5.1 Annual Financing Plan

90. The total financing plan has been analysed further to determine the annual requirements. Figure 5.4 shows the funds to be contributed by each stakeholder for each year.

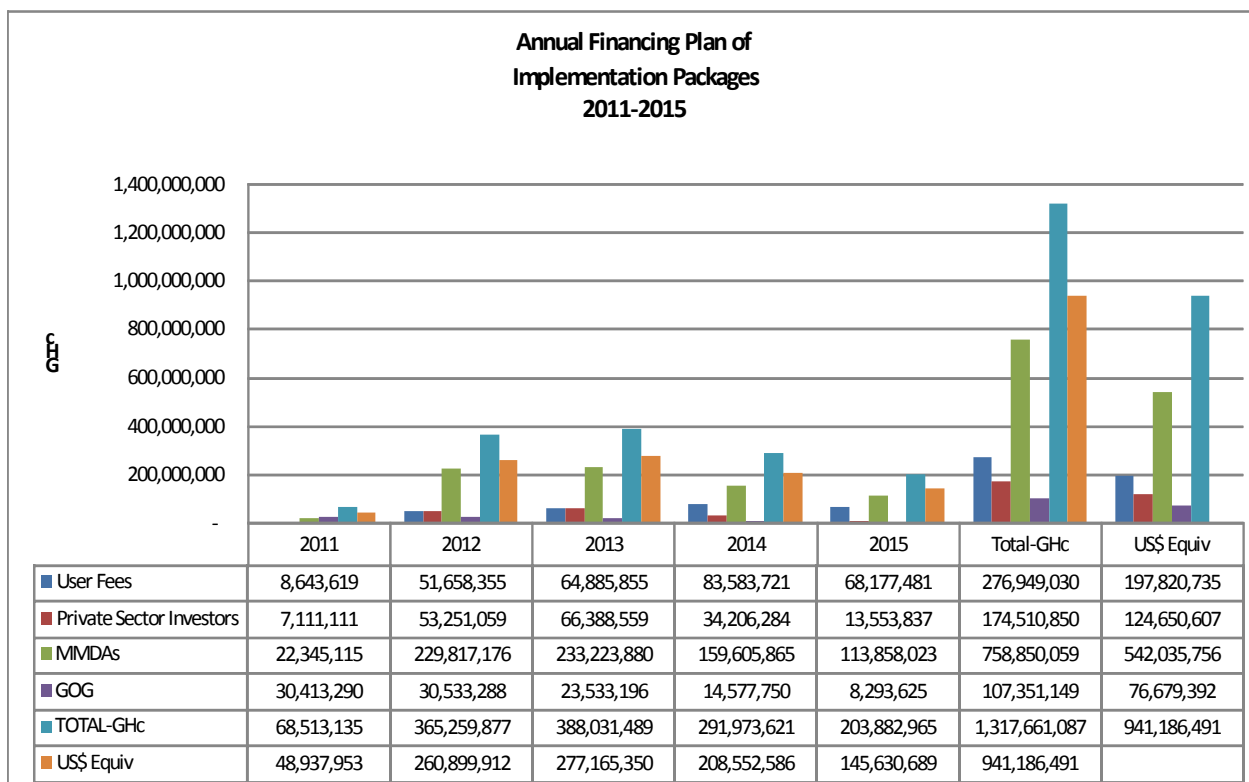


Figure 5.4: Annual Financing Plan of Implementation Packages 2011-2015

91. **User Fees:** are expected to rise from GH¢8,643,619 (US\$6,174,014) in 2011 to GH¢83,583,721(US\$59,702,658) in 2014 as a result of the increase in the delivery of improved levels of service as the programme progresses.
92. **Private Sector Investment:** from an initial amount of GH¢7,111,111 (US\$5,079,365) in 2011 private sector investment is expected to rise to GH¢66,388,559 (US\$47,420,399) in 2013 and Privatisation of some services is expected to be done in the early stages of the programme requiring investment by the private sector.
93. **MMDAs:** MMDAs will be required to provide more funds in the first three years of the programme (2011 to 2013) compared to the last two years (2014-2015). The implementation of improved services, enabling elements and the acquisition of capital investments to support the increase in volume of service delivery will require more funds over the initial years.
94. **Improving Municipal Refuse Collection and Transport Cost Sharing:** The MMDAs and Users are responsible for contributing for the total cost of improving refuse collection- GH¢519,209,769 (US\$ 370,864,121.). Each stakeholder’s share has been allocated to it in determining its total liability. The observation is that in 2011 - 2013, MMDAs will contribute more while in 2014- 2015 both stakeholders are expected to contribute equally. Figure 5.5 shows how the costs will be financed annually.

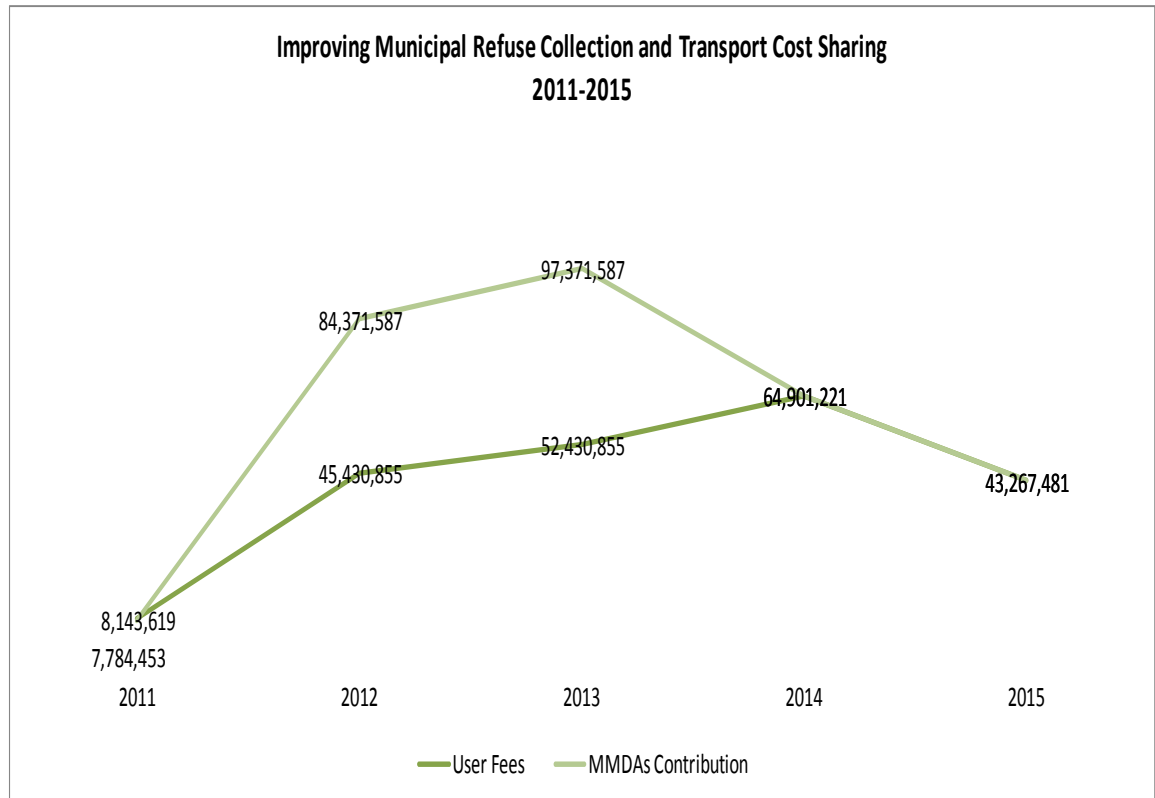


Figure 5.5: Annual Financing Plan of Improving Municipal Refuse Collection

95. **GoG:** Government of Ghana’s budget allocation for 2011 amounting to GH¢30,413,290 (US\$ 21,723,779) for environmental sanitation is a result of the launching of the Environmental Sanitation Policy (Revised, 2010) and the implementation of aspects of the NESSAP. Government’s contribution is also projected to be highest in 2012 amounting to GH¢30,533,288 (US\$21,809,491).

5.2 Establishment of Revolving Fund for Provision of Household Toilets

96. To support the provision of decent household toilets (including replacement of pan latrines), reduce the dependency on public toilets and reduce the incidence of open defecation the NESSAP has set a target for the delivery of the equivalent of 62,275 household toilets per annum from 2011 to 2015 nationwide. At an estimated cost of GH¢500 per unit this amounts to GH¢31,137,500 (US\$22,241,071) per annum. In all 250,000 units of various types of facilities are estimated to be constructed in five years from 2011 to 2015 at a total cost of GH¢ 125,000,000 (US\$89,285,714).
97. Government’s share of financing includes an amount of GH¢62,275,000 (US\$44,482,142) for the establishment of a revolving fund to be applied as loans to support the provision of household toilets through artisans and small-works

contractors. Micro-finance Institutions will manage the micro-credit schemes for the utilisation of the revolving fund.

98. To ensure patronage of the toilets and reduce the burden on households it is proposed that each applicant pays an initial deposit of 20% (in the year of construction and pays the balance in four annual instalments). The applicant is expected to pay a finance charge on the outstanding balance at a rate of ten percent (10%) which is far below the current commercial bank lending rate (25-27%).
99. The outstanding balance of household loans will be financed from a revolving fund to be established by GoG and operated by Micro Finance Institutions (MFIs) and Rural Community Banks (RCBs). The MFIs will recover their management costs from the interest to be charged households.
100. The Government will make annual contributions (top-up) to ensure the annual delivery target of 50,000 toilets after considering repayment of instalments by applicants. The projected annual contributions by the applicants and the Government are shown in Table 5.1 below. Appendix 5.2 provides the detailed computations and cash flows.

Table 5.1: Operation of Household Toilet Revolving Fund

Year	Payment for household toilets by Households- GH¢	Contribution by Government GH¢	Total GH¢
2011	450,000	0	450,000
2012	6,227,500	24,910,000	31,137,500
2013	12,455,000	18,682,500	31,137,500
2014	18,682,500	12,455,000	31,137,500
2015	24,910,000	6,227,500	31,137,500
Total	62,775,000	62,275,000	125,000,000

101. In 2015 and beyond, the Government will not be required to make any further contributions to the fund. Rather, it will roll over its contribution to the next phase for the delivery of additional household toilets. Proposed procedures for the establishment and operation of the Revolving Fund are provided in Appendix 4.4

5.3 The Financing Gap

102. From the financing plan in section 5.1 above, it is certain that the ability of all stakeholders to meet their allocated costs is critical in providing the required investments to assure the delivery of the planned outputs.
103. User fees are expected to be collected in full for services operated largely by the private sector. The projected performance of the service operators, their efficiency in fee collection and the satisfaction of users will enhance users' willingness to pay and ensure the collection of the projected fees. The projection for user fees is expected to be achieved creating no gap in this line of contribution.

104. Private sector investors are expected to invest thirteen percent (13%) of the total funds required. The paradigm of regarding all wastes as material-in-transition (MINT) point to the big investment opportunities within the environmental sanitation sector. Considering the potential returns on investment and the current level of initiatives by entrepreneurs it is expected that projected investment outlays will likely be met. No gap is allocated to this line of funding.
105. MMDAs contribution account for fifty-nine percent (58%) of total implementation cost amounting to GH¢758,850,059 (US\$542,035,756).
106. Judging from the current low revenue levels of the MMDAs (see Chapter 2), the likelihood of the MMDAs raising their entire allocation from their IGFs and DACF allocation is highly uncertain.
107. A huge gap is likely to be created by the MMDAs which needs to be assessed and addressed to ensure the success of the program.
108. GoG's contribution for the entire period is GH¢107,351,149 (US\$76,679,392). GOG has allocated GH¢ 30,413,290 (US\$ 21,723,779) for 2011 for undertaking specific activities in the Environmental Health and Sanitation Sector impacting on the NESSAP Implementation Packages and the SESIP financing plans. The amount and the activities have been fully credited in 2011 to GOG. The balance of GH¢76,937,859 (US\$54,955,613) being its allocation for 2012-2015 has been included in the Financing Gap.
109. A projected annual financing gap has been computed to determine the quantum of projected financing gap. The gap represents the difference between the allocated contribution of the MMDAs and their achievable contributions added to the total costs allocated to the GOG. As shown in Figure 5.6 the total financing gap for the entire programme period is estimated at GH¢ 557,464,123 (US\$ 398,188,659).
110. This is made up of the MMDAs' financing gap of GH¢ 480,526,264 (US\$343,233,046) for 2011-2015 and GOG allocated costs of GH¢76,937,859 (US\$54,955,613) for 2012-2015.
111. From Figure 5.6, the largest financing gap occurs in 2012 amounting to GH¢191,405,311 (US\$ 136,718,079) while the lowest gap occurs in 2011 amounting to GH¢15,641,581 (US\$ 11,172,558) and it is exclusively the MMDAs gap for 2011.

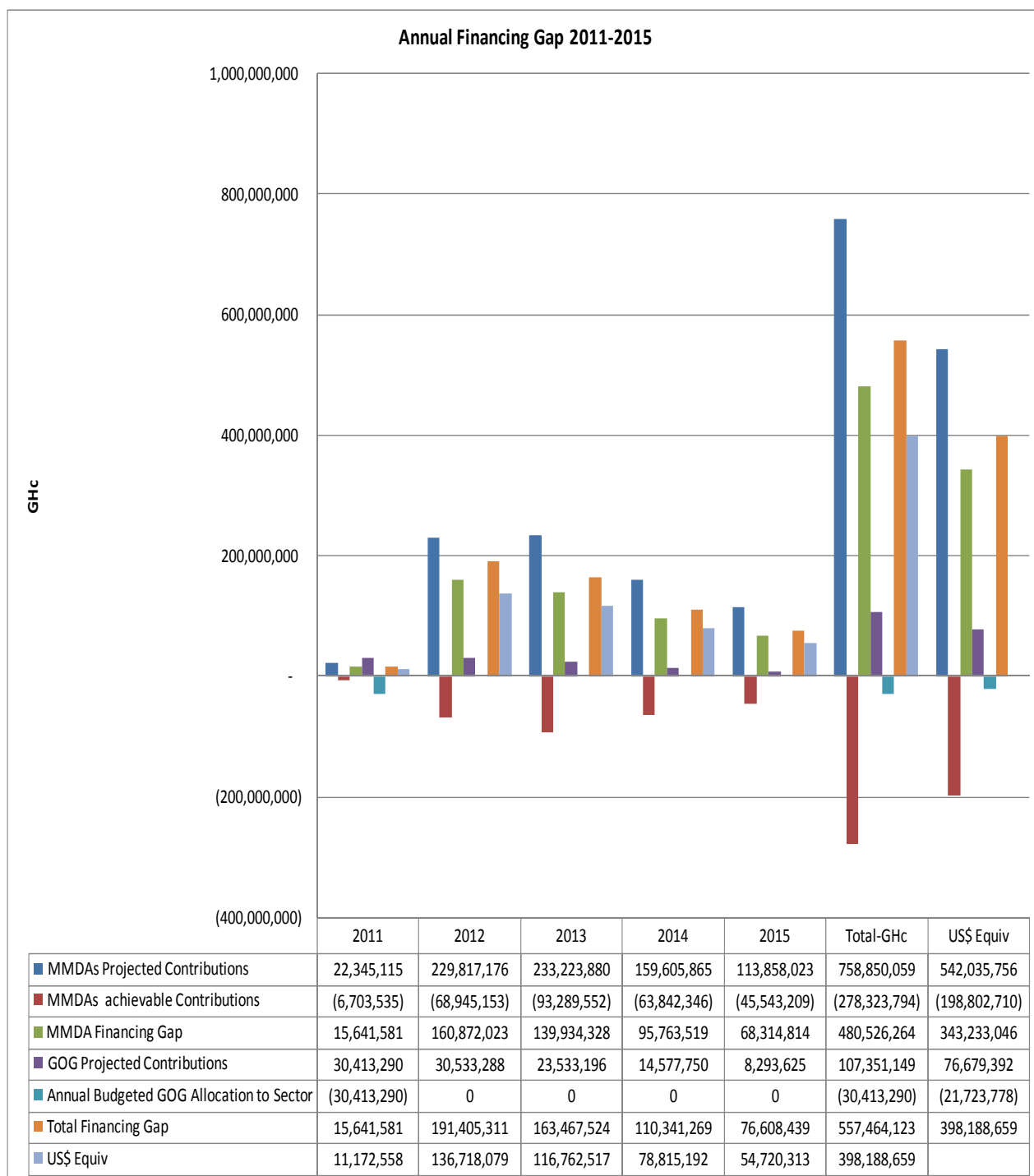


Figure 5.6: Assessment of Annual Financing Gap 2011-2015

5.4 Options for Funding the Financing Gap

112. GoG will be primarily responsible for putting in place the mechanism for raising the funds to fill the gap for financing the investments and activities. Any shortfalls in funding the gap will have a direct impact on meeting the physical targets set.

113. The Financing Gap is expected to be financed by the Government of Ghana (GoG) through the allocation of resources from the Consolidated Fund, other sources of revenue available to it, Development Partners(DPs), International Direct Funding (IDFs) and where feasible, International Financial Institutions (IFIs)..
114. The options for financing the gap include the following:
- Increase in the annual allocation of District Assemblies Common Fund (DACF) to be applied by MMDAs to fund their shortfalls. As an indication, increasing the current DACF level from 7.5%⁹ to 15% and “ring-fencing” the amount for environmental sanitation activities to be implemented by MMDAs and national level programmes such as capacity building, will cover the entire funding for the gap over the period. If the projected increase in DACF is not achieved, then additional sources will have to be resorted to.
 - Sourcing funds from various sectors of the economy which either impact or derive benefits from environmental sanitation services (e.g. National Health Insurance Levy, Levy on plastic products etc.)
 - Central Government sourcing for loans, credits and grants from its development partners
115. These options are not exhaustive as other sources depending on the relevant institutional arrangements for delivering the SESIP can be resorted to programmes .

⁹ The portion of DACF released to MMDAs in 2008 amounted GH¢116,448,111.

6 Institutional Arrangements

116. To ensure the achievement of the targets set in the implementation packages and the related financing plan, various institutional arrangements will need to be put in place at the National, Regional, District and Community levels to ensure the smooth implementation of the SESIP. The required institutional arrangements are given below.

6.1 National Level Arrangements

117. Government shall establish an independent board, **National Environmental Sanitation Investment Management Board** (NESIMBOD) to oversee the performance of investments and assure value-for-money in service delivery. In addition the NESIMBOD shall ensure “fair play” practices in the promotion of investments by all sector actors; private-private and private-public ventures. The NESIMBOD shall be appropriately staffed to enable the sector benefit from emerging financing instruments such as Clean Development Mechanism (CDM)¹⁰ and earnings from emission-reduction credits.
118. The **Environmental Health and Sanitation Directorate** will also prepare quarterly Consolidated Operational Reports and submit to the Board.
119. **Facilitating Private Sector Participation:** the private sector is expected to play very prominent roles in the implementation of the SESIP. The private sector will require enabling incentives for delivering the projected investments, including:
- Tax holiday for the first 5-10 years of operation.
 - Accelerated capital allowance rates for capital expenditures
 - A corporate tax rate lower than the applicable tax rate.
120. **Annual Performance Assessment and Reporting:** performance indicators have been developed for all the activities in the implementation packages. Emphasis has been placed on monitoring the levels of cost recovery of operations and assessing the value-for-money for expenditures incurred. When computed yearly, the indicators will give a trend of the performance in the sector for easy assessment.
121. The complete set of performance indicators is presented as a separate document “Performance Indicators for Assessing the Implementation of SESIP”. The indicators cover:
- Solid Waste Management
 - Excreta (Liquid Waste) Management
 - Storm Drains and Sullage Conveyance

¹⁰ The EPA as the the Designated National Authority (DNA) on Clean Development Mechanism (CDM) has prepared a working document “The Clean Development Mechanism in Ghana” to guide implementation of potential projects

- Health Care Facility Waste Management
- Enabling Elements

122. Stakeholders at national, regional and district levels will be trained to compute and interpret the indicators.

6.2 Institutional Arrangements at the Regional Level

123. The involvement of Regional Planning Coordinating Units (RPCUs) and other regional collaborating agencies is very critical to shoring up the capacity of the Regional Environmental Health and Sanitation Directorates (REHSD). This arrangement has proven effective in the oversight of the preparation of District Environmental Sanitation Strategies and Action Plans (DESSAPs). The REHSDs will be given the necessary logistics to support the results-based performance monitoring of the programmes.

6.3 Arrangements at Metropolitan, Municipal and District Assemblies (MMDAs)

124. The arrangements used in the preparation of DESSAPs by MMDAs as given in the Handbook for the preparation of DESSAPs shall be followed. The role of the expanded District Planning Coordinating Unit (DPCU) with active participation of Waste Management Departments (WMDs) and Environmental Health and Sanitation Departments (EHSDs) will be emphasised in planning, execution, monitoring and evaluation of implementation packages.

Appendices

Appendix 1: Key Assumptions Underlying the Preparation of the SESIP

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Appendix 2.1: Costs for Implementing Capacity Development Measures of *Enabling Elements*

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Appendix 2.7 Cost of Level of Services

Appendix 3: Implementing Packages Tables and Cost (see NESSAP Chapter 6)

Appendix 3.1: Appendix 3.1: Summary of Total Cost of Implementation Packages (2011-2015)

Appendix 3.2: Annual Implementation Cost of Institutional Development and Capacity Enhancement Programme (2011-2015)

Appendix 3.3: Annual Cost Implementing Community Participation and Public Awareness Programme 2011- 2015)

Appendix 3.4: Annual Implementation Costs – Research, Performance Monitoring and Governance Programme (2011-2015)

Appendix 3.5: Annual Cost Implementation-Local Service Improvement Programme (2011-2015)

Appendix 4: Financing Tables

Appendix 4.1 Allocation of Cost of activities of the Implementation Packages to Stakeholders (2011-2015)

Appendix 4.2: Annual Financing Table-2011-2015

Appendix 4.3: Annual Financing Gap (2011-2015)

Appendix 4.4 Proposed procedures for establishing and operating Household Toilet Revolving Fund

Appendix 1: Key Assumptions Underlying the Preparation of the SESIP

The key assumptions underlying the preparation of the SESIP are listed below

1. The NESSAP is the fundamental document of reference for the preparation of the SESIP. It is expected that the NESSAP and the SESIP will be read together for a complete grasp of the sector background information.
2. The costs allocated to the various components of focus areas and activities and the Incremental Service Improvement Options (ISIOs) are from the NESSAP.
3. The decentralised structures of the local government system has been fully recognised and applied in allocating financial responsibilities in the SESIP.
4. Financial obligations of users and the private sector have been projected at 100% of expectation.
5. Exchange rate applied is US\$ 1=GH¢ 1.40
6. Future Inflationary implications have not been computed.

Appendix 2: Cost Tables

Appendix 2.1: Costs for Implementing Capacity Development Measures of *Enabling Elements*

Appendix 2.2 Costs for Implementing IEC Measures of *Enabling Elements*

Appendix 2.3 Costs for Implementing Legislation and Regulation Measures of *Enabling Elements*

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Appendix 2.6: Costs for Implementing M&E measures of *Enabling Elements*

Appendix 2.7 Cost of Level of Services

Appendix 2.1: Costs for Implementing Capacity Development Measures of *Enabling Elements*

A. Capacity Development				
Obj No.	Measure	RECURRENT (O&M)	CAPITAL	TOTAL
A1	Strengthen Regional Environmental Health Offices to effectively facilitate programmes of MMDAs including the appointment of qualified professional staff			
	Upgrade ICT Equipment etc	79,000	28,500	107,500
	Enhance facilitation capacity of REHOs (training, mobility etc.)	2,110,000	350,000	2,460,000
	Appoint 1 Environmental Health Technologist per district by 2020	780,000		780,000
	Appoint 1 Drainage Maintenance Engineer per Metropolitan and Municipal Assembly by 2015	540,000		540,000
	Appoint 1 Public Health Engineer per Metropolitan and Municipal Assembly by 2015	540,000		540,000
	Appoint 1 Planner per REHSD by 2015	510,000		510,000
	Appoint 1 Public Health Engineer per REHSD by 2015	540,000		540,000
A2	Review membership and mandates of NESPoCC			
A2	Provide necessary logistics and funding for NESPoCC activities, to begin in Nov. 2007 and sustained	58,000		58,000
A3	Upgrade Schools of Hygiene to tertiary institutions for Hygiene and Environmental Sanitation – including curriculum, structure and staffing			
	Review curriculum and training courses of SH	15,000		15,000
	Restructure SHs and place under MoESS	22,500		22,500
	Upgrade SH to tertiary institutions	33,500	2,500,000	2,533,500
A4	Provide specialised training in the areas of environmental protection, contract management and supervision, planning, public relations, monitoring and evaluation	1,500,000		1,500,000
	Mainstream the use of ICT through training to enhance information management	375,000		375,000
	Provide logistics and appropriate working tools for management of environmental sanitation services		1,800,000	1,800,000
Sub-Total General Measures		7,103,000	4,678,500	11,781,500

Appendix 2.1: Costs for Implementing Capacity Development Measures of *Enabling Elements*
Cont'd

Specific Component Measures: Solid Waste Management				
A1	Strengthen Regional Environmental Health Offices to effectively facilitate programmes of MMDAs including the appointment of qualified professional staff			
A3	Reinforce the role of the private sector in service delivery - (Review of Franchise Scheme)			
	Minimum targets of collection and transport by private operators in five largest cities, through franchise/contracting			
	75% in year 2010;	92,700		92,700
	90% in year 2015; 100% in year 2020.			
A3	Reinforce the role of the private sector in service delivery -			
	Minimum targets of collection and transport by private operators, for all other district capitals, through franchise/contracting			
	60% in year 2015;			
	75% in year 2020; 100% in year 2025.			
A4	Appoint appropriately qualified staff to MMDAs including, sanitary engineers, environmental health technologists, planners etc			
	Sub-Total Cdevp SWM	92,700		92,700
Specific Component Measures: Excreta (Wastewater) Management				
A1	Strengthen Regional Environmental Health Offices to effectively facilitate programmes of MMDAs including the appointment of qualified professional staff			
A3	Reinforce the role of the private sector in service delivery			
	Increase the proportion of public toilets provided by private sector through BOT, BOO from...to ...by 2015			
	Implement full franchise management of all MMDAs built facilities by 2015			
	Implement 100% private desludging services by 2015			
	Minimum targets for home-latrines coverage through promotion by trained artisans (accompanied by Community-led Total Sanitation)			
	· 10% - 35%, 2010 - 2015	124,177,500		124,177,500
	· 35% by 2015			
	· 70% by 2025			
· 90% by 2035				
	Support installation of bio-digesters and packaged plants by private operators	38250		38,250
A4	Appoint appropriately qualified staff to MMDAs including, sanitary engineers, environmental health technologists, planners etc			
	Sub Total Cdevp Excreta Management	124,215,750		124,215,750

Appendix 2.1: Costs for Implementing Capacity Development Measures of *Enabling Elements*
Cont'd

Specific Component Measures: Storm Water Drainage and Sullage Conveyance				
A1	Strengthen REHOs to effectively facilitate programmes of MMDAs including the appointment of qualified professional staff			
	Implement training programmes for drainage planning and maintenance management	62500		62,500
A4	Appoint appropriately qualified staff to MMDAs including, sanitary engineers, environmental health technologists, planners etc			
Sub Total Cdevp Drainage & Sullage Conveyance		62,500		
Specific Component Measures: Environmental Sanitation Education and Enforcement Management (Food Hygiene, Sanitary Inspection, Law Enforcement)				
A3	Support effective implementation of ESICOME and related programmes			
	Update ESICOME programme to include CLTS by end-2008	39270		39,270
	Implement Annual training programmes for REHSD and EHMDs in MMDAs commencing from 2008	1,080,000		1,080,000
A5	Update knowledge and skills of environmental health officers to deal with marine-pollution related issues	375000		375,000
	Review the mandates of port health inspections to include marine pollution	9900		9,900
Sub Total Cdevp ES Education and Enforcement		1,504,170		1,504,170
Specific Component Measures: Health-care, Industrial and Hazardous Wastes				
A1	Strengthen Regional Environmental Health Offices to effectively facilitate programmes of MMDAs including the appointment of qualified professional staff by 2009			
	Implement Annual training programmes for REHSD and EHMDs in MMAs in clinical/hazardous waste management commencing from 2010	750000		750,000
A4	Appoint appropriately qualified staff to MMDAs including, sanitary engineers, environmental health technologists, planners, chemical technologists etc			
Sub Total Cdevp HCFW Management		750,000		750,000
Grand Total Cdevp		133,728,120	4,678,500	138,406,620

Appendix 2.2: Costs for Implementing IEC Measures of *Enabling Elements*

Focus Area: B. Information, Education and Communication				
General Measures				
Obj No.	Measure	COSTS		
		RECURRENT (O&M)	CAPITAL	TOTAL
B1	Ensure widespread dissemination of policy at all levels	90,000		90,000
	Reprints	80,000		80,000
B2	Raise the profile of the Environmental Sanitation Day (ENSADA) by declaring it a statutory cleanup day at all levels			
	Every community shall adapt environmental sanitation practices consistent with the national environmental sanitation policy			
	Promote awareness of the important roles of households, communities and the private sector in environmental sanitation services (annual campaigns)	100,000		100,000
B3	Develop and/or update standards and guidelines for all components of environmental sanitation services at all levels and segments	250,000		250,000
	Ensure widespread dissemination of all standards and guidelines	150,000		150,000
	Establish monitoring and evaluation framework for implementation of standards and guidelines (including the use of environmental sanitation assessments and audit procedures)	7,500		7,500
B4	Ensure the involvement of traditional authorities and the consideration of diversity of religious beliefs and cultural practices at all levels	35,000		35,000
Sub-Total General Measures		42,500		542,500
Specific Component Measures: Solid Waste Management				
B4	Promote benefits of alternative uses of wastes through Reduction, Re-use, Recycling and Recovery (annual campaigns)		300,000	300,000
	Promote use of biodegradable materials and minimise use of plastics (annual campaigns)	50,000	50,000	100,000
B6	Develop and apply participatory tools for identification and selection of sites in accordance with strategic environmental assessment principles			
	Train sector staff in application of SEA tools	25,000		25,000
Sub-Total IEC SWM		75,000	350,000	425,000
Specific Component Measures: Storm Water Drainage and Sullage Conveyance				
B5	Support advocacy on interventions aimed at restoring and improving wetlands and watercourses, including those in the National Water Policy, National Wetlands Strategy etc	25,000		25,000
Sub-Total IEC Drainage and Sullage Conveyance		25,000		25,000
Specific Component Measures: Environmental Sanitation Education and Enforcement Management (Food Hygiene, Sanitary Inspection, Law Enforcement)				
B4	Develop framework for raising awareness on volumes and types of waste streams generated from all segments of the economy and their impacts	33,000		33,000
	Support advocacy on effects of changing life-styles on waste streams	250,000		250,000
Sub-Total IEC ES Education and Enforcement		283,000		283,000
Grand Total IEC		925,500	350,000	1,275,500

Appendix 2.3 Costs for Implementing Legislation and Regulation Measures of *Enabling Elements*

Focus Area: C Legislation and Regulation				
General Measures				
Obj No.	Measure	COSTS		
		RECURRENT (O&M)	CAPITAL	TOTAL
C1	Ensure enactment of necessary legal instruments to support institutional functions including public-private partnerships, financing and funding arrangements, licensing, monitoring, control and ownership, of wastes, point and non-point discharges	60,000		60,000
Sub-Total General Measures		60,000		60,000
Specific Component Measures: Solid Waste Management				
C1	Identify (enact) appropriate legislation on the acquisition of land for treatment and disposal sites (including expropriation) and develop procedures to facilitate site valuation, negotiation and payment of compensation	40,000		40,000
C2	Develop regulation to support waste reduction, re-use, recycling and recovery	11,000		11,000
C4	Enforce legislations/regulations/bye-laws prohibiting the dumping of waste in wet lands and water courses (including drains)	400,000		400,000
Sub-Total Leg&Reg SWM		451,000		451,000
Specific Component Measures: Environmental Sanitation Education and Enforcement Management (Food Hygiene, Sanitary Inspection, Law Enforcement)				
C2	Ensure that all developments comply with EPA environmental assessment regulations	150,000		150,000
	Support the strengthening of the capacity of the judiciary and law enforcement agencies in dealing with environmental sanitation and related issues	100,000		100,000
	MLGRDE develop model bye-laws covering all aspects of environmental sanitation	10,000		10,000
	MMDAs shall promulgate bye-laws consistent with model bye-laws taking into consideration specific local conditions			
C6	Institute adequate measures to protect beaches and prevent marine pollution	7,530,000		7,530,000
	Develop rapid response systems for adopting emerging international regulations on issues such as global warming, e-waste and special hazardous waste etc	11,000		11,000
	Enforce/Enact statute for compulsory participation of environmental sanitation officers in destination inspections at entry points	25,000		25,000
Sub-Total Leg&Reg ES Education and Enforcement		7,826,000		7,826,000
Sub-Total Leg&Reg HCFW Management				
Grand Total Leg&Reg		8,337,000		8,337,000

Appendix 2.4 Costs for Implementing Financing and Cost-Recovery Measures of *Enabling Elements*

Focus Area: D Sustainable financing and cost recovery				
General Measures				
Obj No.	Measure	COSTS		
		RECURRENT (O&M)	CAPITAL	TOTAL
D1	MMDAs shall establish MMDA-level Environmental Sanitation Fund and actively implement systems to generate sustainable revenue to cover the costs of services	36,700		36,700
D2	Use “polluter- pays” mechanism in determining levels of charges and fees for environmental sanitation services (gradually increase)	50,000		50,000
	MMDAs shall establish separate budget lines for the components of environmental sanitation services and manage revenues for such services separately and exclusively for expenditure directly related to these services	21,630		21,630
	Develop a Strategic Environmental Sanitation Investment Plan (SESIP)	70,625		70,625
	Implement a Strategic Environmental Sanitation Investment Plan (SESIP)			
D3	Establish a National Environmental Sanitation Improvement Fund to be sourced from existing and planned sector funds for financing the SESIP			
Sub-Total General Measures		178,955		178,955
Specific Component Measures: Solid Waste Management				
D1	MMDAs shall set tariffs with full participation of private sector service providers and users (to be revised once a year)	225,000		225,000
	MMDAs shall implement differential tariffs to ensure overall cost recovery			
Sub-Total Fin&Cost Recovery SWM		225,000		225,000
Grand Total Fin&Cost Recovery		403,955		403,955

Appendix 2.5: Costs for Implementing Research and Development Measures of *Enabling Elements*

Focus Area: F - Research and Development				
General Measures				
Obj No.	Measure	COSTS		
		RECURRENT (O&M)	CAPITAL	TOTAL
F1	Support the development of platform for transparent and credible assessment and reporting of sector performance	75,000		75,000
F2	Carry out assessments to determine effective demand of communities (urban, peri-urban, small towns and rural) for environmental infrastructure	24,550		24,550
	Support studies on alternative technology options for improving services to low-income urban areas, small towns and rural areas	90,000		90,000
F3	Ensure that relevant agencies, at all levels, provide timely and reliable data and information for tracking sector progress for national development planning	120,000		120,000
Sub-Total R&D General Measures		309,550		309,550
Specific Component Measures: Solid Waste Management				
F1	Develop framework for tracking the volumes and types of waste streams generated from all segments of the economy	25,620		25,620
	Examine and assess the capabilities of existing research and service institutions and provide appropriate support for research on environmental sanitation	36,000		36,000
F2	Support local private sector entrepreneurs and artisanal entities to produce machines, equipment and tools appropriate for local use	75,000		75,000
F3	Support research and studies in volumes and types of waste from predominant sectors and segments of the economy (especially sources of non-biodegradable-organic-fractions, special and hazardous wastes)	65,000		65,000
Sub-Total R&D SWM		201,620		201,620
Specific Component Measures: Environmental Sanitation Education and Enforcement Management (Food Hygiene, Sanitary Inspection, Law Enforcement)				
F1	Ensure effective dissemination of results of operational research and studies on waste stream composition and volumes from research institutions	125,000		125,000
Sub-Total R&D ES Education and Enforcement		125,000		125,000
Grand Total R&D		636,170		636,170

Appendix 2.6: Costs for Implementing M&E measures of *Enabling Elements*

Focus Area: G – Monitoring and Evaluation				
General Measures				
Obj No.	Measure	COSTS		
		RECURRENT (O&M)	CAPITAL	TOTAL
G1	Assess how existing M&E platforms can integrate environmental sanitation			
	Develop appropriate indicators for each of the policy focus areas	886,417		886,417
G1	Institute procedures for carrying out participatory M&E at all levels	1,150,000		1,150,000
	Monitor and evaluate the performance of facilities and services and institute remedial measures where required	102,850		102,850
G2	Assess capacity for implementing M&E at all levels			
	Establish/strengthen structures for effective M&E including mechanisms for DA- and community-level monitoring	650,000		650,000
G3	Define appropriate strategy for communicating information on M&E in collaboration with other allied institutions	60,000		60,000
	Ensure that relevant agencies, at all levels, provide timely and reliable data and information for tracking sector progress and contributing to periodic sector updates	150,000		150,000
	National Conferences	960,000		960,000
Sub-Total M&E General Measures		3,959,267		3,959,267
Specific Component Measures: Solid Waste Management				
G2	Assess capacity for implementing M&E at all levels	6,000,000		6,000,000
	Establish/strengthen structures for effective M&E including mechanisms for DA- and community-level monitoring			
Sub-Total M&E SWM		6,000,000		6,000,000
	LSIP Management Support	60,403,166		60,403,166
Grand Total M&E		70,362,433		70,362,433

Appendix 2.7: Cost of Level of Services

Focus Area: E Levels of Service				
General Measures				
Obj No.	Measure	COSTS		
		RECURRENT (O&M)	CAPITAL	TOTAL
Specific Component Measures: Solid Waste Management				
E1	Ensure that the bulk of environmental sanitation services shall be provided by the private sector under regulation by the public sector agencies			
	MMDAs shall maintain adequate capacity to intervene and provide the services in the event of failure of the private sector to deliver services due to industrial actions in their establishments or other reasons			
	Ensure that services meet the needs of specific target groups including vulnerable people, women and children, and the poor			
	Implement pro-poor improvements in low-income communities		725,000	725,000
	Ensure that sites for treatment and disposal of wastes (landfills, composting facilities, waste stabilisation ponds, trickling filters, septage treatment plants, etc.) are located so as not to create safety and health hazards or aesthetic problems in the surrounding area			
E2	Ensure that development and siting of communal storage and transfer depots, treatment and disposal facilities conform to statutory land-use norms and regulations	41,450		41,450
	Ensure acquisition of appropriate sites for treatment and disposal facilities (landfills, composting facilities, waste stabilisation ponds, trickling filters, septage treatment plants, etc.) using participatory principles including SEA			
	Metropolitan, contributing population >250,000		3,784,849	3,784,849
	Municipal, contributing population 95,000 - 250,000		9,845,676	9,845,676
	Large Urban, contributing population 40,000 - 95,000			
	Small urban, contributing population 15,000-40,000			
	Small/Large Rural, contributing population <15,000			
	Ensure that treatment and disposal facilities are provided and used in accordance with prescribed standards including the preparation of Environmental Impact Assessments			
	Metropolitan, contributing population >250,000		14,159,546	14,159,546
	Municipal, contributing population 95,000 - 250,000		21,399,505	21,399,505
Large Urban, contributing population 40,000 - 95,000		72,043,271	72,043,271	
Small urban, contributing population 15,000-40,000				
Small/Large Rural, contributing population <15,000				

Appendix 2.7: Cost of Level of Services Cont'd

E3	Develop and ensure provision of programme for incremental coverage of, and access to services to meet increasing population and growing economy			
	Minimum targets of collection and transport in five largest cities			
	75% in year 2010;			
	85% in year 2015;	93,433,615		93,433,615
	100% in year 2020.			
	Minimum targets of collection and transport , for all other districts			
	60% in year 2015; municipalities(top row) and districts (bottom row)	143,235,394 282,540,759		143,235,394 282,540,759
	75% in year 2020;			
	100% in year 2025.			
E3	Provide services and facilities for primary separation of solid wastes at household, community, public levels and commercial areas			
	20% by 2015	66,666,667		66,666,667
	25% by 2020			
	70% by 2025			
	90% by 2035			
E4	Identify all environmentally sensitive areas such as wetlands and water courses prone to impact from waste-abuse			
	Provide adequate targeted services in areas close to wetlands, water courses and other vulnerable water resources prone to waste-abuse			
	Provision of Street and Public Places Sweeping/Cleansing & Litter Storage Bins	7,417,783	5,820,000	13,237,783
	Cleansing of Beaches and shores		1,800,000	1,800,000
	Mining (Evacuation) of large refuse dumps in small, medium & large towns	6,271,500		6,271,500
E5	Develop mechanisms for integrating the activities of 'scavengers' in improved waste collection, transfer, treatment and disposal facilities			
	Development of VC Entreprises and YES module	75,000	24,250,000	24,325,000
	Installation of compost facilities		57,769,184	57,769,184
	Installation of Recycling facilities			
	WEEE Facilities		15,000,000	15,000,000
Sub-Total Levels of Service SWM		599,682,168	226,597,031	826,279,199

Appendix 2.7: Cost of Level of Services Cont'd

Specific Component Measures: Excreta Management				
E1	Ensure that the bulk of environmental sanitation services shall be provided by the private sector under regulation by the public sector agencies	3,850,000	13,400,000	17,250,000
	MMDAs shall maintain adequate capacity to intervene and provide the services in the event of failure of the private sector to deliver services due to industrial actions in their establishments or other reasons			
	Ensure that services meet the needs of specific target groups including vulnerable people, women and children and the poor			
	. Implement pro-poor improvements in low-income communities		73,200,000	73,200,000
	Ensure that sites for treatment and disposal of wastes (landfills, composting facilities, waste stabilisation ponds, trickling filters, septage treatment plants, etc.) are located so as not to create safety and health hazards or aesthetic problems in the surrounding area			
E2	Ensure that development and siting of communal storage and transfer depots, treatment and disposal facilities conform to statutory land-use norms and regulations			
	Ensure acquisition of appropriate sites for treatment and disposal facilities (landfills, composting facilities, waste stabilisation ponds, trickling filters, septage treatment plants, etc.) using participatory principles including SEA			
E3	Ensure that treatment and disposal facilities are provided and used in accordance with prescribed standards including the preparation of Environmental Impact Assessments		13,050,000	13,050,000
	Ensure adequate systems for managing wastewater treatment, re-use and disposal	25,000	7,500,000	7,525,000
E4	Identify all environmentally sensitive areas such as wetlands and water courses prone to impact from waste-abuse			
	Provide adequate targeted services in areas close to wetlands, water courses and other vulnerable water resources prone to waste-abuse			
E5	Ensure adequate options of facilities are available for all segments of the population especially vulnerable and physically challenged persons		50,000	50,000
	. Provide seed for revolving fund for country-wide home-latrine promotion targeting low-income communities of urban, large and small towns using identifiable groups and MFIs		125,000,000	125,000,000
Sub-Total Levels of Service Excreta Management		3,875,000	232,200,000	236,075,000
Specific Component Measures: Storm Water Drainage and Sullage Conveyance				
E3	Ensure adequate systems for managing storm water drainage and sullage conveyance			
	Develop Drainage Development Plans (DDPs) for all Regional Capitals by 2012	75,000		75,000
	Develop DDPs for all District Capitals by 2015	225,000		225,000
	Implement First-round sub-projects of DDPs beginning 2010			
	Implement pro-poor improvements in low-income communities		8,500,000	8,500,000
E4	Identify all environmentally sensitive areas such as wetlands and water courses prone to impact from waste-abuse			
	Provide adequate targeted services in areas close to wetlands, water courses and other vulnerable water resources prone to waste-abuse			
	Cleansing of Communal Drains (CAIP)	24,384,000		24,384,000
Sub-Total Levels of Service Drainage and Sullage Conveyance		24,684,000	8,500,000	33,184,000

Appendix 2.7: Cost of Level of Services Cont'd

Specific Component Measures: Environmental Sanitation Education and Enforcement Management (Food Hygiene, Sanitary Inspection, Law Enforcement)				
E1	Ensure that all environmental services at all levels meet minimum prescribed sector standards			
	Ensure that various levels of service meet the health needs of people and the environment and are consistent with related services such as water, energy, transport etc.			
	Ensure that sites for treatment and disposal of wastes (landfills, composting facilities, waste stabilisation ponds, trickling filters, septage treatment plants, etc.) are located so as not to create safety and health hazards or aesthetic problems in the surrounding area			
E2	Ensure that treatment and disposal facilities are provided and used in accordance with prescribed standards including the preparation of Environmental Impact Assessments			
	Ensure that facilities are managed so as to satisfy approved environmental protection standards			
E4	Ensure that DESSAPs address issues of pollution of water resources			
Sub-Total Levels of Service ES Education and Enforcement				
Specific Component Measures: Health-care, Industrial and Hazardous Wastes				
E3	Ensure implementation and operation of proper Health-care waste management systems and facilities			
	Full compliance by 100% Regional and Specialist Hospitals with guidelines by 2013		1,469,275	1,469,275
	Full Compliance by 50% District Hospitals by 2015		1,231,935	1,231,935
	Full Compliance by 100% District Hospitals by 2025			
	Full compliance by 25% all other health-care facilities by 2025			
E4	Ensure (and monitor) that industries establish and operate proper facilities/systems for hazardous wastes			
Sub-Total Levels of Service HCFW Management			2,701,210	2,701,210
Grand Total Levels of Service		628,241,168	469,998,241	1,098,239,409

APPENDIX 3: Implementing Packages Tables and Cost

Appendix 3.1: Appendix 3.1: Summary of Total Cost of Implementation Packages (2011-2015)

Appendix 3.2: Annual Implementation Cost of Institutional Development and Capacity Enhancement Programme (2011-2015)

Appendix 3.3: Annual Cost Implementing Community Participation and Public Awareness Programme 2011- 2015)

Appendix 3.4: Annual Implementation Costs – Research, Performance Monitoring and Governance Programme (2011-2015)

Appendix 3.5: Annual Cost Implementation-Local Service Improvement Programme (2011-2015)

Appendix 3.1: Summary of Total Cost of Implementation Packages (2011-2015)

Implementation Packages	Total Cost		RECURRENT		CAPITAL	
	GH¢	% of Total Cost	GH¢	% of Specific Programme	GH¢	% of Specific Programme
Institutional Development and Capacity Enhancement Programme	15,141,120	1.10	10,462,620	69.10	4,678,500	30.90
Community Participation and Public Awareness Programme	133,660,075	10.1	133,310,075	99.70	350,000	0.30
Research, Performance Monitoring and Governance Programme	70,620,516	5.40	70,620,516	100	0	0
Local Service Improvement Programme	1,098,239,376	83.40	628,241,135	57.2	469,998,241	42.8
Total	<u>1,317,661,087</u>	100	<u>842,634,346</u>	64	<u>475,026,741</u>	36
US\$ Equivalent	<u>941,186,491</u>		<u>601,881,676</u>		<u>339,304,815</u>	

Appendix 3.2: Annual Implementation Cost of Institutional Development and Capacity Enhancement Programme (2011-2015)

Item	Activity Description	Estimated Cost					
		(GH¢)	2011	2012	2013	2014	2015
1	Institutional Strengthening of EHSD/REHSUs	5,477,500	1,375,000	1,138,333	1,113,834	937,417	912,917
2	Upgrading of Schools of Hygiene	2,571,000		1,285,500	1,285,500		
3	Specialised Training Programmes & Courses	4,267,500	711,250	1,066,875	1,066,875	711,250	711,250
4	Services Improvement Support (Consultancies, Evaluations, Appraisals & Updates)	1,025,120	700,000	325,120			
5	Provision of Equipment, Tools and Machinery	1,800,000		1,200,000	600,000		
	TOTAL	15,141,120	2,786,250	5,015,828	4,066,209	1,648,667	1,624,167

Appendix 3.3: Annual Cost Implementing Community Participation and Public Awareness Programme (2011- 2015)

Item	Programme Activity	Estimated Cost					
		(GH¢)	2011	2012	2013	2014	2015
1	Behavioral Change Communication & Public Campaigns	350,000	116,667	58,333	58,333	58,333	58,333
2	CLTS (National Outreach)	124,177,500	5,000,000	39,344,870	35,203,854	20,754,583	23,874,193
3	Dissemination of Policies, Standards, etc	746,575	618,700	50,000	40,000	30,000	7,875
4	Support to NGOs, CBOs & Traditional Authorities	60,000	15,000	25,000	10,000	10,000	
5	Enforcement Management for Services Improvement	8,226,000	1,371,000	2,056,500	2,056,500	1,371,000	1,371,000
6	Support to Promotion of Programmes, Projects & Products	100,000	50,000	50,000			
	TOTAL	133,660,075	7,171,367	41,584,703	37,368,688	22,223,917	25,311,401

Appendix 3.4: Annual Implementation Costs –Research (2011-2015)

	Programme Activity	Estimated Cost					
		(GH¢)	2011	2012	2013	2014	2015
1	Research & "MINT" Products Development	811,170	135,195	270,390	135,195	135,195	135,195
2	Environmental Sanitation Assessment & Audits (ESAAs)	6,000,000	750,000	2,250,000	1,000,000	1,000,000	1,000,000
3	Improvement of Local Finance Mgt.	333,330	83,332	83,334	55,555	55,555	55,555
4	R-Based M&E	1,962,850	490,713	441,641	441,641	294,421	294,435
5	Joint Monitoring and Performance Reviews /(NESCON)-61574	1,110,000	185,000	370,000	185,000	185,000	185,000
	Sub-Total	10,217,350	1,644,239	3,415,365	1,817,391	1,670,171	1,670,185
6	LSIP Management Support	60,403,166	1,000,000	16,100,792	19,392,788	13,842,392	10,067,194
	TOTAL	70,620,516	2,644,239	19,516,156	21,210,179	15,512,563	11,737,379

Appendix 3.5: Annual Cost Implementation-Local Service Improvement Programme

Item	Component	Programme Activity	Estimated Cost					
			(GH¢)	2011	2012	2013	2014	2015
1	Solid Waste Management	Improving Municipal Refuse Collection and Transport	519,209,769	23,267,482	129,802,442	149,802,442	129,802,442	86,534,962
		Pro-Poor Improvement Programme	725,000	483,333	241,667			
		House-to-House Improvement & Pilot Source-Separation Scheme	66,666,666	6,111,111	22,222,222	27,222,222	11,111,111	
		Street and Public Cleansing	13,279,200	1,426,400	2,213,200	4,213,200	3,213,200	2,213,200
		Cleansing of Beaches & Shores (CAIP)	1,800,000	360,000	360,000	360,000	360,000	360,000
		Mining of Large Refuse Dumps	6,271,500	3,135,750	3,135,750			
		Acquisition of Land for final Disposal Sites (MRFs)	13,630,525		6,815,263	6,815,263		
		MRF - Improved (Mechanised) Disposal Sites	107,602,322	1,600,000	35,867,441	26,900,580	25,300,581	17,933,720
		Establishment of WEEE & Value-Chain Enterprises (YES Programme)	39,325,000	1,000,000	16,662,500	13,831,250	5,831,250	2,000,000
		MRF-Recycling Plants						
		MRF-Compost Plants	57,769,184	5,000,000	11,553,837	14,553,837	15,107,673	11,553,837
			SUB-TOTAL	826,279,166	42,384,076	228,874,321	243,698,794	190,726,257
2	Excreta Management	Increasing Access to Improved Household Sanitation Facilities	125,050,000.00	500,000	31,137,500	31,137,500	31,137,500	31,137,500
		Provision of Treatment/Disposal Facilities & DETERR Systems	20,575,000.00		6,858,333	6,858,333	6,858,333	
		TATT Schemes	17,250,000.00	1,500,000	2,812,500	10,781,250	2,156,250	
		Pro-Poor School Sanitation Programme	73,200,000.00	4,000,000	2,300,000	24,300,000	14,000,000	8,600,000
		SUB-TOTAL	236,075,000	6,000,000	63,108,333	73,077,083	54,152,083	39,737,500

Appendix 3.5: Annual Cost Implementation-Local Service Improvement Programme Continued

Item	Component	Programme Activity	Estimated Cost					
			(GH¢)	2011	2012	2013	2014	2015
3		Drainage Development Plans	300,000	150,000	150,000			
		Pro-Poor Drainage Improvement Scheme	8,500,000	1,600,000	1,233,333	2,833,333	2,833,333	
		Cleansing of Communal Drains (CAIP)	24,384,000	4,876,800	4,876,800	4,876,800	4,876,800	4,876,800
		SUB-TOTAL	33,184,000	6,626,800	6,260,133	7,710,133	7,710,133	4,876,800
4	Health-Care Facility Wastes Mgt.	Installation of Biogas Plants and Utilization Accessories (Regional & Specialist HCFs)	1,469,275	489,758	489,758	489,759		
		Installation of Biogas Plants and Utilization Accessories (District HCFs)	1,231,935	410,645	410,645	410,645		
		SUB-TOTAL	2,701,210	900,403	900,403	900,404		
		TOTAL (LSIP)	1,098,239,376	55,911,279	299,143,190	325,386,414	252,588,474	165,210,019

Appendix 4: Financing Tables

Appendix 4.1 Allocation of Cost of activities of the Implementation Packages to Stakeholders (2011-2015)

Appendix 4.2: Annual Financing Table-2011-2015

Appendix 4.3: Annual Financing Gap (2011-2015)

Appendix 4.4 Proposed procedures for establishing and operating Household Toilet Revolving Fund

Appendix 4.1 Allocation of Cost of activities of the Implementation Packages to Stakeholders (2011-2015)

Institutional Development and Capacity Enhancement Programme (2011 – 2015)						
Item	Activity Description	Estimated Cost	Allocation to Stakeholders			
		(GH¢)	Users	Private Sector	MMDAs	GoG
1	Institutional Strengthening of EHSD/REHSUs	5,477,500				5,477,500
2	Upgrading of Schools of Hygiene	2,571,000				2,571,000
3	Specialised Training Programmes & Courses	4,267,500				4,267,500
4	Services Improvement Support (Consultacies, Evaluations, Appraisals & Updates)	1,025,120				1,025,120
5	Provision of Equipment, Tools and Machinery	1,800,000			1,800,000	
	TOTAL	15,141,120	0	0	1,800,000	13,341,120
Community Participation and Public Awareness Programme (2011 - 2015)						
Item	Programme Activity	Estimated Cost	Allocation to Stakeholders			
		(GH¢)	Users	Private Sector	MMDAs	GoG
1	Behavioral Change Communication & Public Campaigns	350,000				350,000
2	CLTS (National Outreach)	124,177,500			121,177,500	3000000
3	Dissemination of Policies, Standards, etc	746,575				746,575
4	Support to NGOs, CBOs & Traditional Authorities	60,000				60,000
5	Enforcement Management for Services Improvement	8,226,000			7,226,000	1,000,000
6	Support to Promotion of Programmes, Projects & Products	100,000				100,000
	TOTAL	133,660,075	0	0	128,403,500	5,256,575

Appendix 4.1 Allocation of Cost of activities of the Implementation Packages to Stakeholders (2011-2015) cont'd

Local Services Improvement Programme (2011-2015)							
Item	Component	Programme Activity	Estimated Cost	Allocation to Stakeholders			
			(GH¢)	Users	Private Sector	MMDAs	GoG
1	Solid Waste Management	Improving Municipal Refuse Collection and Transport	519,209,769	214,174,030	0	297,696,329	7,339,410
		Pro-Poor Improvement Programme	725,000	0		241,667	483,333
		House-to-House Improvement & Pilot Source-Separation Scheme	66,666,666	0	66,666,666		
		Street and Public Cleansing	13,279,200	0		13,279,200	
		Cleansing of Beaches & Shores (CAIP)	1,800,000	0		1,800,000	
		Mining of Large Refuse Dumps	6,271,500	0		6,271,500	
		Acquisition of Land for final Disposal Sites (MRFs)	13,630,525	0		13,630,525	
		MRF - Improved (Mechanised) Disposal Sites	107,602,322.00	0		106,052,322	1,550,000
		Establishment of WEEE & Value-Chain Entreprises (YES Programme)	39,325,000	0	39,325,000		
		MRF-Recycling Plants	-	0			
		MRF-Compost Plants	57,769,184.00	0	51,269,184		6,500,000
		SUB-TOTAL	826,279,166	214,174,030	157,260,850	438,971,543	15,872,743
		2	Excreta Management	Increasing Access to Improved Household Sanitation Facilities	125,050,000	62,775,000	0
Provision of Treatment/Disposal Facilities & DETERR Systems	20,575,000					14,925,000	5,650,000
TATT Schemes	17,250,000				17,250,000	0	
Pro-Poor School Sanitation Programme	73,200,000					73,200,000	
SUB-TOTAL	236,075,000			62,775,000	17,250,000	88,125,000	67,925,000

Appendix 4.1 Allocation of Cost of activities of the Implementation Packages to Stakeholders (2011-2015) cont'd

Local Services Improvement Programme (2011-2015)							
3	Storm Water & Sullage Conveyance	Drainage Development Plans	300,000			300,000	
		Pro-Poor Drainage Improvement Scheme	8,500,000			8,500,000	
		Cleansing of Communal Drains (CAIP)	24,384,000			24,384,000	
		SUB-TOTAL	33,184,000	0	0	33,184,000	0
4	Health-Care Facility Wastes Mgt.	Installation of Biogas Plants and Utilization Accessories (Regional & Specialist HCFs)	1,469,275		1,469,275		
		Installation of Biogas Plants and Utilization Accessories (District HCFs)	1,231,935		1,231,935		
		SUB-TOTAL	2,701,210	0	0	2,701,210	0
		TOTAL (LSIP)	1,098,239,376	276,949,030	174,510,850	560,280,543	86,498,953
Research, Performance Monitoring and Governance Programme (2011 - 2015)							
		Estimated Cost	Allocation to Stakeholders				
		(GH¢)	Users	Private Sector	MMDAs	GoG	
1	Research & "MINT" Products Development	811,170				811,170	
2	Environmental Sanitation Assessment & Audits (ESAAs)	6,000,000			6,000,000	0	
3	Improvement of Local Finance Mgt.	333,330			0	333,330	
4	R-Based M&E	1,962,850			1,962,850		
5	Joint Monitoring and Performance Reviews /(NESCON)-61574	1,110,000				1,110,000	
	Sub-Total	10,217,350	0	0	7,962,850	2,254,500	
6	LSIP Management Support	60,403,166			60,403,166		
	TOTAL	70,620,516	0	0	68,366,016	2,254,500	
	Grand Total GHc	1,317,661,087	276,949,030	174,510,850	758,850,059	107,351,148	
	Exc Rate	1.40					
	US\$ Equivalent	941,186,491	197,820,735	124,650,607	542,035,756	76,679,392	

Appendix 4.2: Annual Financing Table-2011-2015

		User Fees	Private Sector Investors	MMDAs	GOG	Total-GHC	US\$ EQUIV
2011	Institutional Development & Capacity Enhancement Programme	0.00	0.00	0.00	2,786,250	2,786,250	1,990,179
	Community Participation and Public Awareness Programme	0.00	0.00	2371000.00	4,800,367	7,171,367	5,122,405
	Local Service Improvement Programme	8,643,619	7,111,111	17,733,403	22,423,147	55,911,279	39,936,628
	Research, Performance Monitoring and Governance Programme	0.00	0.00	2,240,713	403,527	2,644,239	1,888,742
	TOTAL	8,643,619	7,111,111	22,345,115	30,413,290	68,513,135	48,937,953
2012	Institutional Development & Capacity Enhancement Programme	0.00	0.00	1,200,000	3,815,828	5,015,828	3,582,734
	Community Participation and Public Awareness Programme	0.00	0.00	41,401,370	183,333	41,584,703	29,703,359
	Local Services Improvement Programme	51,658,355	53,251,059	168,423,373	25,810,403	299,143,190	213,673,707
	Research, Performance Monitoring and Governance Programme	0.00	0.00	18,792,433	723,724	19,516,156	13,940,111
	TOTAL	51,658,355	53,251,059	229,817,176	30,533,288	365,259,877	260,899,912
2013	Institutional Development & Capacity Enhancement Programme	0.00	0.00	600,000	3,466,209	4,066,209	2,904,435
	Community Participation and Public Awareness Programme	0.00	0.00	37,260,354	108,333	37,368,688	26,691,920
	Local Services Improvement Programme	64,885,855	66,388,559	174,529,096	19,582,904	325,386,414	232,418,867
	Research, Performance Monitoring and Governance Programme	0.00	0.00	20,834,429	375,750	21,210,179	15,150,128
	TOTAL	64,885,855	66,388,559	233,223,880	23,533,196	388,031,489	277,165,350
2014	Institutional Development & Capacity Enhancement Programme	0.00	0.00		1,648,667	1,648,667	1,177,619
	Community Participation and Public Awareness Programme	0.00	0.00	22,125,583	98,333	22,223,917	15,874,226
	Local Services Improvement Programme	83,583,721	34,206,284	122,343,469	12,455,000	252,588,474	180,420,339
	Research, Performance Monitoring and Governance Programme	0.00	0.00	15,136,813	375,750	15,512,563	11,080,402
	TOTAL	83,583,721	34,206,284	159,605,865	14,577,750	291,973,621	208,552,586
2015	Institutional Development & Capacity Enhancement Programme	0.00	0.00	0.00	1,624,167	1,624,167	1,160,119
	Community Participation and Public Awareness Programme	0.00	0.00	25,245,193	66,208	25,311,401	18,079,572
	Local Services Improvement Programme	68,177,481	13,553,837	77,251,201	6,227,500	165,210,019	118,007,156
	Research, Performance Monitoring and Governance Programme	0.00	0.00	11,361,629	375,750	11,737,379	8,383,842
	TOTAL	68,177,481	13,553,837	113,858,023	8,293,625	203,882,965	145,630,689

Grand Total		User Fees	Private Sector Investors	MMDAs	GOG	Total GH¢	US\$ EQUIV
	Institutional Development & Capacity Enhancement Programme	0.00	0.00	1,800,000	13,341,120	15,141,120	10,815,086
	Community Participation and Public Awareness Programme	0.00	0.00	128,403,500	5,256,575	133,660,075	95,471,482
	Local Service Improvement Programme	276,949,030	174,510,850	560,280,543	86,498,954	1,098,239,376	784,456,697
	Research, Performance Monitoring and Governance Programme	0.00	0.00	68,366,016	2,254,500	70,620,516	50,443,226
	TOTAL	276,949,030	174,510,850	758,850,059	107,351,149	1,317,661,087	941,186,491

Appendix 4.3: Annual Financing Gap (2011-2015)

	2011	2012	2013	2014	2015	Total-GHc	US\$ EQUIV
MMDAs Projected Contributions	22,345,115	229,817,176	233,223,880	159,605,865	113,858,023	758,850,059	542,035,756
MMDAs achievable Contributions	(6,703,535)	(68,945,153)	(93,289,552)	(63,842,346)	(45,543,209)	(278,323,794)	(198,802,710)
MMDA Financing Gap	15,641,581	160,872,023	139,934,328	95,763,519	68,314,814	480,526,264	343,233,046
GOG Projected Contributions	30,413,290	30,533,288	23,533,196	14,577,750	8,293,625	107,351,149	76,679,392
Annual Budgeted GOG Allocation to Sector	(30,413,290)	0	0	0	0	(30,413,290)	(21,723,778)
Total Financing Gap	15,641,581	191,405,311	163,467,524	110,341,269	76,608,439	557,464,123	398,188,659
US\$ Equiv	11,172,558	136,718,079	116,762,517	78,815,192	54,720,313	398,188,659	

Appendix 4.4: Procedures for establishing and operating DA Household Toilet Revolving Fund

1. MMDAs will set their annual targets of household toilets to be constructed.
2. MMDAs will vet and approve MFIs/Rural Banks to operate the Fund.
3. MFIs/Rural Banks will issue receive annual funds from a central point /MMDA representing the loan component of toilets budgeted for construction.
4. MFIs/Rural Banks will issue Debenture Certificates for funds received for the operation of the Revolving Fund.
5. Households will pay a deposit of 20% of cost of toilet and take a loan for the 80% balance from a MFI/RRB to be spread equally annually for 5 years.
6. MFIs/Rural Banks will charge households' interest on loans at rates negotiated with the MMDAs and households to enable them recover their management costs.
7. Toilet construction artisans will register with the MMDAs and the MFIs/Rural Banks to market and construct toilets for households.
8. The contract fee for the toilet will be standardized and fixed at a rate to ensure the recovery of the artisans' labour and a small profit.
9. The MMDAs will support the entire programme with CLTS, advertisements and enforcement of environmental sanitation bye-laws.
10. The Government's seed money will either be refunded by the MFIs/Rural Banks at the end of the programme or applied to start a new cycle to provide more facilities

