REPUBLIC OF GHANA

GA-SOUTH MUNICIPAL ASSEMBLY

TOWN ENVIRONMENTAL SANITATION DEVELOPMENT PLAN
- OBOM -

WASTECARE

Consultant
WasteCare Associates
P. O. Box LG 486
Legon-Accra

Tel: 233-302-786072
Fax: 233-302-786072
E-mail: info@wcghana.com

Client
RCC-GAR
Environmental Health and
Sanitation Directorate, MLGRD.
P. O. Box M50
Accra
Tel: 233-302-682047
Fax: 233-302-682047

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EXECUTIVE SUMMARY

This Town Environmental Sanitation Development Plan (TESDP) for Obom provides a non-technical summary of the various remedial actions required to improve on reported poor environmental services.

This plan derives much of its information and data, and therefore its focus, from the preliminary results of the Environmental Sanitation Assessment and Audit (ESAA) sponsored by the Regional Coordinating Council –Greater Accra Region (RCC-GAR) for three towns in three districts of the region – Obom (Ga South Municipal Assembly, GSMA), Akplabanya (Dangme East District Assembly, DEDA) and Kordiabe (Dangme West District Assembly, DWDA). It forms part of the GoG/Danida Local Service Delivery and Governance Programme (LSDGP)

The TESDP closely follows the generic format prepared for use by cities under the first phase of the Urban Environmental Sanitation Project (UESP-I), aspects of the Guidelines for Preparing Waste Management Plans published by the Environmental Protection Agency (EPA) and the Ministry of Local Government and Rural Development (MLGRD); the Operational Manual for Planning, Budgeting, Monitoring and Evaluation, for Water and Environmental Sanitation prepared by the National Development Planning Council (NDPC) and the Community Water and Sanitation Agency (CWSA); and the Handbook for Preparation of District Environmental Sanitation and Action Plan (DESSAP) prepared by the Environmental Health and Sanitation Directorate (EHSD) of the MLGRD..

Following basic tenets of strategic planning, this initial TESD planning is part of a process and the plan will evolve as experience is gained and the required accompanying institutional structures improve and as GSMA updates its baseline information used for preparing its DESSAP.

This plan covers five main components of an integrated scheme for improving (i) storm-water drainage and sullage conveyance, (ii) excreta management, (iii) refuse collection and transport, (iv) wetland management and (v) management support for implementation.

The sub-projects to be considered under the first package of this plan form part of the process of gradually developing the TESDP for Obom. All sub-projects will be implemented by the GSMA through its relevant departments and units - the District Planning Coordinating Unit (involving the District Water and Sanitation Team, DWST), the Environmental Health Management Department (EHMD)[1], and District Works Department (DWD) and the **Obom Zonal Council**.

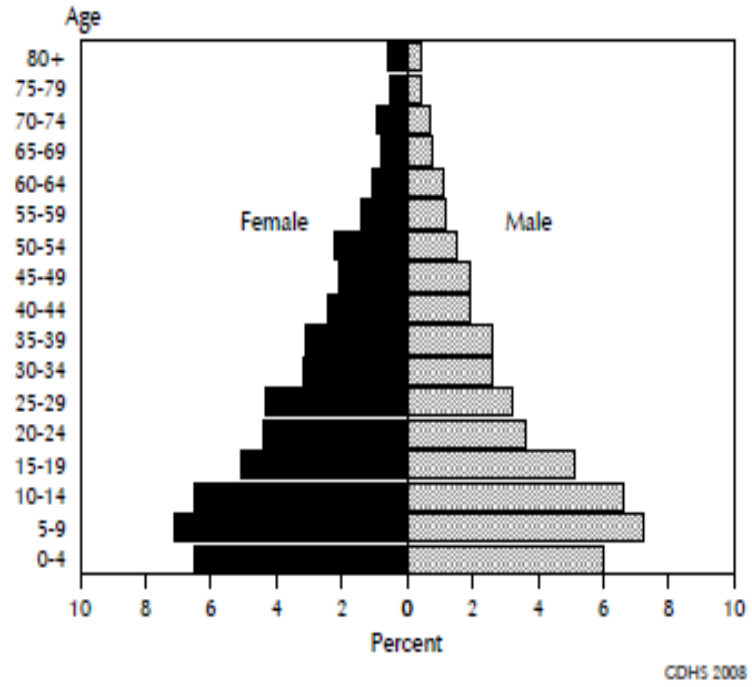
The pilot sub-projects under Excreta and Refuse Management will be facilitated by RCC-Regional Environmental Health and Sanitation Directorate (REHSD) and the drainage scheme will be facilitated by GSMA with support from the Hydrological Services Department (HSD) with inputs from the Department of Feeder Roads (DUR), where necessary.

Total cost of interventions provided in the first package for improving Environmental Sanitation in Obom is up to GH¢391,399 out of which GH¢ 126,720 is for improving excreta management; GH¢ 132,263 is for the provision of communal containers or pilot compost plant and establishing a "buy-back" centre for artisanal processing of thin film plastics and rubber and construction of an incinerator; GH¢17,064 is for drainage and sullage conveyance improvement scheme, and GH¢ 28,953 for the improvement of wetland management building . The Environmental Sanitation Sub- Component of the GoG/Danida Local Service Delivery and Governance Programme (LSDGP) will finance selected aspects of the plan to fit available funds and priorities of the GSMA.

[1] L.I. 1961 has integrated the EHMD and the former office of the District Medical Officer of Health into a Department of Health (DoH).

FIG 1.0 **HOUSEHOLD POPULATION BY AGE, SEX AND RESIDENCE AND POPULATION PYRAMID**

	Urban			Rural			Total		
Age	Male	Female	Total	Male	Female	Total	Male	Female	Total
<5	13.0	10.8	11.8	15.2	13.8	14.5	14.3	12.5	13.3
5-9	13.2	11.7	12.4	16.6	15.0	15.7	15.2	13.5	14.3
10-14	12.7	12.3	12.5	14.7	12.4	13.5	13.8	12.4	13.1
15-19	10.7	10.3	10.5	10.8	9.1	9.9	10.7	9.7	10.2
20-24	9.1	9.6	9.4	6.3	7.4	6.8	7.5	8.4	7.9
25-29	7.9	9.3	8.7	5.7	7.5	6.6	6.7	8.3	7.5
30-34	6.4	6.9	6.7	4.9	5.6	5.3	5.5	6.2	5.9
35-39	5.8	6.3	6.0	5.3	5.7	5.5	5.5	6.0	5.7
40-44	4.2	4.7	4.5	3.9	4.5	4.2	4.0	4.6	4.3
45-49	4.1	4.3	4.2	3.9	4.0	3.9	4.0	4.1	4.0
50-54	3.6	4.4	4.1	3.0	4.0	3.5	3.3	4.2	3.7
55-59	2.8	2.6	2.7	2.2	2.7	2.5	2.4	2.7	2.5
60-64	2.3	2.0	2.1	2.3	2.3	2.3	2.3	2.1	2.2
65-69	1.5	1.3	1.4	1.7	1.8	1.8	1.6	1.6	1.6
70-74	1.2	1.6	1.4	1.6	1.8	1.7	1.5	1.7	1.6
75-79	0.7	0.9	0.8	0.9	0.9	0.9	0.8	0.9	0.9
80+	0.7	1.0	0.8	1.0	1.4	1.2	0.9	1.2	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	8,706	10,144	18,850	11,920	12,510	24,430	20,626	22,654	43,280



Source: Ghana Demographic and Health Survey, 2008

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1 INTROUCTION

The purpose of this strategic Town Environmental Sanitation Development Plan (TESDP) for Obom, which covers the period 2010-2020, is to set out a strategy for improving Obom's environmental conditions by gradually and incrementally reducing the poor environmental burden due to indiscriminate disposal and littering of refuse and faecal matter as well as improving sullage and storm-water conveyance. The focus and direction of this plan is influenced by the results of the environmental sanitation and audit carried out in Obom as part of preparatory activities.

The TESDP is strategic in nature in the sense that it covers all the key categories of environmental sanitation and identifies the facilities needed to provide comprehensive services under each component; describes the implementation and financing arrangements for each component; and sets priorities for achieving the overall goal of the relevant sector policy, plan and/or programme. To implement this strategy the Ga South Municipal Assembly will (i) establish/strengthen its Environmental Health Management Department (and the District Water and Sanitation Team) to oversee implementation; (ii) mainstream data collection/verification to enable update of the DESSAP and for improving general development planning; (iii) promote provision of services by the private sector, where viable; and (iv) secure financing to improve drainage and watershed management, refuse management as well as for a mix of household, public and institutional (school) facilities to serve the community.

The plan differs from a traditional District Water and Sanitation Plan (DWSP) or a master plan in that it (i) tailors recommended technical options to each type of housing area in the town, (ii) considers user preferences and willingness-to-pay, (iii) uses a planning horizon of 10-15years, while emphasizing actions that can be taken now, and (iv) breaks the overall plan into project components that can be implemented independently but which together provide the whole range of environmental sanitation services to achieve the overall aim of health improvement. For this very first attempt at preparing a TESDP for Obom, a planning frame of 2010 – 2020 is employed to cover the period of the MDG and beyond.

The intent is to gradually introduce a means of providing integrated interventions and begin to address the issues confronting Ghana's small and medium-large towns that have similar challenges as cities but hitherto do not receive adequate attention. The plan endorses the use of a range of proven technologies which address the needs of all segments of the urban population, recognizing resource constraints, and paying due attention to willingness and capacity of users to pay for improved services.

Box 1.1: **Strategic ESDP Elements**

- Medium term planning horizon 10 – 15 years
- Strategic focus to meet overall goal of policy, plan or programme
- Focuses on integrated development of interventions
- Defines priority interventions over short term for remedial actions and improving on plan requirements e.g. *start-up years'* (1-3 years) projects, studies and institutional restructuring
- Considers all related sectors under environmental sanitation and requires inter-agency collaboration, coordinating unit or department in DA responsible for environmental sanitation

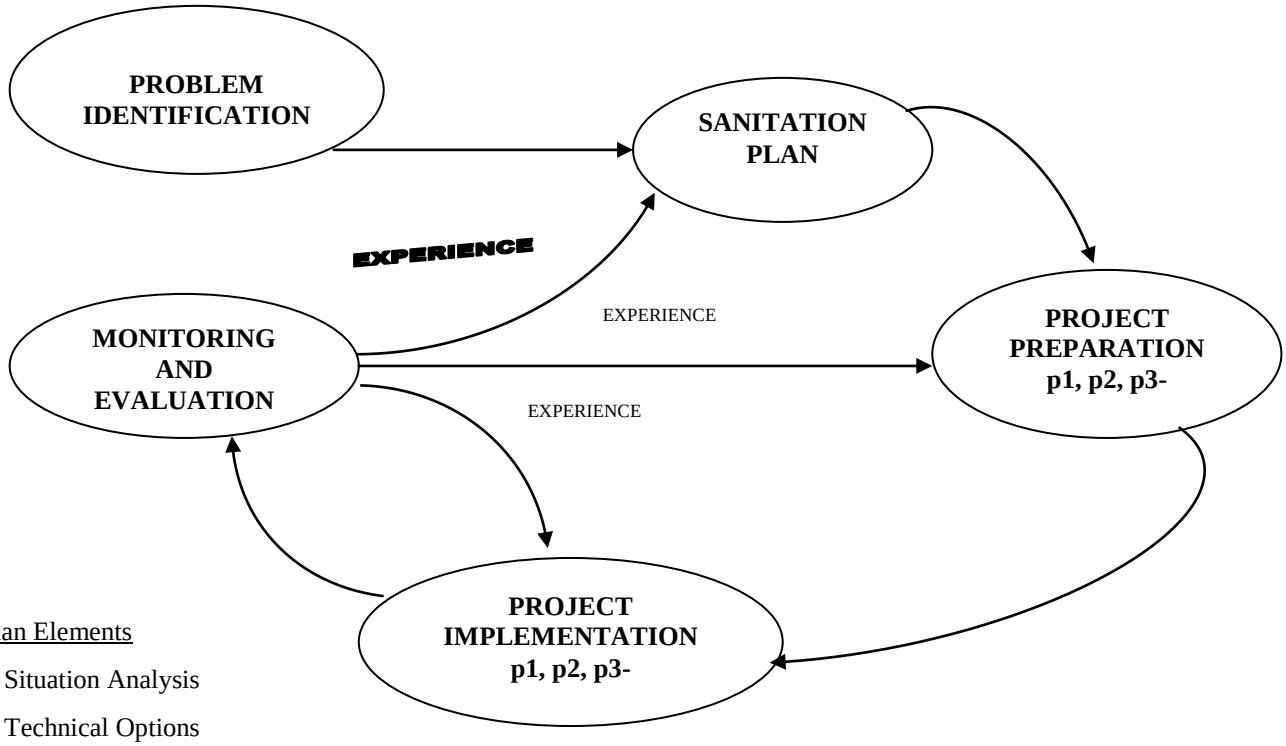
Box 1.2: **DWSP Elements**

- Short-term planning horizon typically 1-3 years, with annual roll-over delivery
- Focuses on single facility (commodity) e.g water and related hygiene and sanitation
- Developed/Facilitated by one sector agency to aid project specific outputs e.g. CWSA
- Project based and often end as plan for distribution of facilities based on demand
- Often Relies on project-type implementation for delivery of outputs e.g. DWST

Box 1.1 & 1.2: Comparison between elements of Strategic ESDP and DWSP

Priorities change with time and strategies will be redefined as experience is gained. Accordingly, the TESDP will be updated regularly with gradually improving data on services and coverage. This iterative process is shown in Figure 1.1.

Figure 1.1 THE STRATEGIC SANITATION PLANNING PROCESS



Plan Elements

- Situation Analysis
- Technical Options
- Financial Options
- Institutional Options
- Implementation Strategy

2 SITUATION ANALYSIS

PROFILE OF OBOM

2.1 Location

Obom is located in Ga South Municipal off the Accra – Cape Coast Highway and about 8.7km inland from Weija. The town has an estimated current population of 1,452.

2.2 Institutions and Services

These include primary and junior secondary schools, market and clinic.

Table 2.1 Population Projection

Town	Growth Rate (%)	2000	2010	2020
Obom	2.1	1,421	1,452	1,787

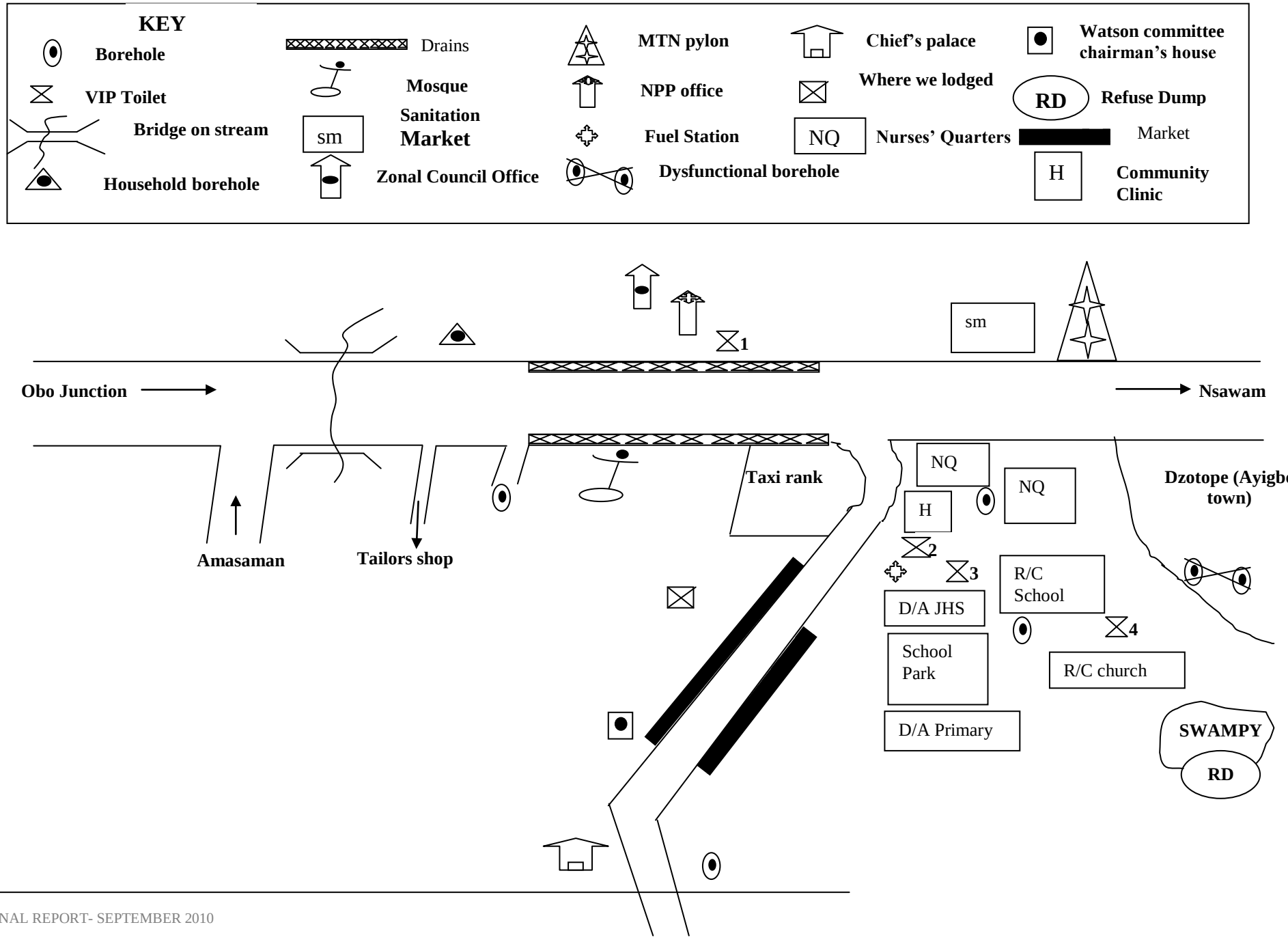
Table 2.2 Housing Characteristics

	Household Characteristics			Water Connections	Sanitation Facilities Total Number (percent of population served)				
Town	No Houses	HH per house	Persons per HH	Percent (0.0%)	WC/ST (0.0%)	Pit Latrine (0.0%)	VIP Latrine (35%)	Pan Latrine (0.0%)	Public Toilet (49.3%)
Obom	178	3	4.4	0	0	0	30	0	1

HH = household WC/ST = WC/septic tank

Table 2.3 Obom Community Profile

ENVIRONMENT CATEGORY	DESCRIPTION
WATER SHED MANAGEMENT	• Pollution of river Ponpong through bathing and washing of cars in and along the river banks. • Dumping of solid waste into the wetlands. • Run-off water pollution into river Ponpong.
WATER SUPPLY	• Four (4) public boreholes and one (1) private borehole. • Water from river Ponpong
WASTE WATER DISPOSAL	• Waste water from bathhouses and kitchens (sullage) disposed of into open space.
LIQUID WASTE DISPOSAL	• One ten (10) seaterpublic KVIP toilet facility and 3 KVIP toilets for the two schools and clinic • About thirty (30) household VIP toilet facilities. • Indiscriminate defecation at open spaces and refuse dumps.
SOLID WASTE DISPOSAL	• One large refuse dump • Crude dumping and burning of solid waste
STORM WATER DISPOSAL	• New primary drainage system under construction • Gulley erosion at open spaces
PROMINENT FEATURES	• Health Centre • Sanitary market • Okada (motor cycle transport system) • MTN telecommunication mast. • Gari processing


KEY
Borehole
Drains
MTN pylon
Chief's palace
Watson committee chairman's house
VIP Toilet
Mosque
NPP office
Where we lodged
RD
Refuse Dump
Bridge on stream
Sanitation Market
sm
Fuel Station
NQ
Nurses' Quarters
Market
Household borehole
Zonal Council Office
Dysfunctional borehole
H
Community Clinic
1
sm
Obo Junction
Nsawam
Taxi rank
NQ
NQ
H
Dzotope (Ayigbe town)
2
3
R/C School
Amasaman
Tailors shop
D/A JHS
4
School Park
R/C church
D/A Primary
SWAMPY
RD

3 OVERVIEW OF ENVIRONMENTAL SANITATION

3.1 Stormwater Drainage and Sullage (grey-water) Conveyance

On the issue of flooding, 14.6% of respondents indicated occurrence of flooding whenever there is a heavy down pour. This is supported by the lack of storm drains in the town from the household level through some secondary drains into the primary drains by the main roads and finally to drainage outfalls and streams in the community. Erosion is therefore evident in Obom as shown in plate 3.1.

Plate 3.1: Exposed foundation due erosion.

The whole community is effectively drained during heavy rains and thunderstorms by the natural wetlands and the stream at the entry of the town close to the Obom junction.

Grey water from kitchens and bathrooms is poorly disposed of or managed in Obom. The predominant means of disposal is draining the grey water through pipes at back of the bathrooms into earth soakage pit *(See plate 3.2)*.

Plate 3.2: Wastewater from bathhouse disposed of into earth soakage pit.

14.6% of households manage the household sullage by the method described. The remaining 72.9% drain their grey water unto open spaces.

3.2 Excreta (Faecal liquid waste) Management

Only 35.4% of all households in Obom have their own household toilets. Meaning the remaining 64.6% of households in the town do not have their own toilets and may therefore either engage in open defecation, share with others or use the single public toilet in the town, which is an 8-seater KVIP toilet. .

Plate 3.3: A typical household VIP toilet facility.

Household latrines in Obom are all ventilated improved pit (VIP) latrines.The poorly planned and built up nature of the settlement without spaces makes vehicular access into individual houses to desludge the VIP toilets an impossible task. Because of this, household VIPs and pit latrines are closed down permanently when full. New pits are dug at any available space within homes for construction of new toilets. This event is fast degrading the residential land and diminishing space available for productive developments within the community.

Public Sanitation Facilities:
There is only one public toilet in Obom, an 8-seater KVIP toilet which is in a very precarious state.

School Sanitation: Obom has 2 basic schools, the District Assembly (DA) and Roman Catholic (RC) schools which comprise KGs, Primaries and JSS. The DA primary and JSS schools have been adequately served with 8 and 6-seater KVIP toilets built by the CWSA under the national rural water and sanitation programme of the Ministry of Works, Water Resources and Housing.

Plate 3.4: The DA primary and JSS 8-seater KVIP toilet facility provided by CWSA.

The 8 and 6 seater toilets have 14 cubicles in total. This is more than the 11 required for the entire student population of 571.

The toilets have been inspected to assess their physical states and found to be satisfactory. Floors and walls are without cracks, roofs are not leaking, width of the cubicles (i.e. 1.05m) is adequately spacious, and cubicles have solid wooden doors with locks. 4 of the 10 vent pipes of the primary toilets have broken down and needs to be replaced. All vent pipes of the 6-seater JHS toilet are in place.
The R/C KG of total enrollment of 150 has no toilet. The school intends to refurbish the old 8-seater bucket latrine which stands beside the uncompleted KG school block into a pour flush toilet for the KG.

Plate 3.5: Superstructure of the old 8-seaetr bucket latrine to be refurbished.

3.3 Watershed Management

The use of some wetlands as refuse dumpsites impacts negatively on the ecological importance of these lands. There is therefore the need to excavate the refuse from these sites and also curb the practice, by providing residents with adequate facilities.

3.4 Solid Waste Managements

Household Solid Waste Collection and Storage (Existing Situation)

The method of refuse collection and storage in households is by collection of sweepings from rooms and compounds, food leftovers, kitchen sweepings and toilet papers etc. into rubber buckets, boxes, cartons and baskets placed at backyards of homes. Size of refuse containers ranges between 20litres and 50litres.

Data from the household survey shows that 58.3% have sanitary dustbins for primary storage of household waste. The receptacles used are however not standard and varies from boxes, buckets, cartons etc.
.

Availability and Location of Refuse Dump Sites

Obom has two communal refuse dumpsites on which refuse collected and stored in homes are disposed of crudely and in an unplanned manner.

Data from the survey indicate that 79.2% of households have access to uncontrolled dump sites for disposing of their refuse. This means that the remaining 20.8% living in sections of the community far from the refuse dumpsites throw their rubbish indiscriminately into nearby bushes, open drains or backyards of the homes.

Plate 3.6: Dumpsite close to the D/A primary school..

The first dumpsite is located southwest of the D/A primary school, close to the school in a wetland which has been destroyed by the dumpsite. Children in houses close to this dumpsite openly defecate on it. Some adults also defecate on the dumpsite at nights
The second dumpsite is close to the site earmarked for the Obom market and lorry park near the chief's house. Dumping of refuse at the second site has however been stopped through an appeal to community by the community elders.

Management of Refuse in Schools

Refuse generated in schools in Obom is composed of classrooms sweepings, papers, sachet water rubbers and food debris. Refuse collected are dumped indiscriminately at unauthorized locations (i.e. nearby bushes) close the school.

Plate 3.7: Improvised incinerator used at the Obom clinic..

Management of Clinic Refuse

Refuse generated at the Obom clinic is collected and burnt in an improvised incinerator close to the clinic.

3.5 Water Supply

The town has groundwater pipe borne water comprising four (4) boreholes fitted with hand-pumps placed at four strategic locations in the community. There is one private borehole fitted with hand-pump belonging to the clinic not open to the public for patients water needs.
Table 3.1 presents a summary of the water demand and supply situation in Obom.

Table 3.1 Water Demand and Supply Situation in Obom

Item	Description	Criteria/Key Indicator(s)	Results
1.0	Water availability (Yes/No)	(Yes/No)	Yes
2.0	Main source of community water supply	Type and Description of Facility	Groundwater piped borne water comprising four (4) boreholes fitted with hand-pumps placed at four strategic locations in the community. There is one private BH fitted with hand-pump belonging to the clinic not open to the public for patients water needs.
3.0	Other source(s)	(Yes/No). Type and Description of Facility	Yes, Dedicated rain water catchment system at the clinic and 1-BH with handpump.
4.0	Measure of accessibility and level of service and sufficiency of water	a. Maximum allowable distance from any HH to any nearest water Point is 500m. CWSA guideline	Average distance measured from entry to the farthest standpipe is 486m, which is < 500m. Water can be/is easily assessed. Convenient to walk from anywhere in the community to fetch water from any available water point
		b. Minimum amount of water required (20l/c/d)	Not determined
		c. Average daily water demand	85,102l/d or 85.1m^3/d
		d. Available Supply from 4BHs	115,200l/d or 115.2m^3/d
		e. Max. queuing time ≤ 15mins	9mins. Satisfactory
		f. Avg. filling, 20litre bucket ≤3mins	2.5mins. Satisfactory
6.0	Reliability of water supply service	a. Physical state of water supply facilities	Satisfactory physical state
		b. No. of days of uninterrupted water supply/week	Very reliable. 7-days/week and all year round, in so far as there is no breakdown of the existing water supply facilities

3.6 Environmental Burdens and Public Health Impact

The prevalence of open defecation principally due to inadequacy of toilet facilities poses enough risk to Obom's public health situation and if not addressed may result in a possible outbreak of diarrhoeal diseases. The lack of stromwater conveyance and sullage drains contributes to the presence of pools of stagnant water which may serve as breeding grounds for mosquitoes in the town.

4 SERVICES IMPROVEMENT PROGRAMME

4.1 Minimum Service Standards

The overall service goal is the provision of improved environmental sanitation facilities to serve the whole of Obom. To reduce the environmental burden and enhance the quality of residents of Obom, the following policies, guidelines and service standards as well as those to be developed by relevant authorities from time to time, will be adhered to:

National Environmental Sanitation Strategy and Action Plan (NESSAP), Draft Final, April 2010

Environmental Sanitation Policy (Revised, April, 2010)

Guidelines for Small Town Systems, 2005, CWSA

Operational Manual for Planning, Budgeting, Monitoring and Evaluation, Water and Environmental Sanitation, December 2004, NDPC/CWSA

Manual for the Operation of Septage Treatment Plants, May 2003, MLGRD

Management of Public Toilets Guidelines, January 2003, MLGRD

Environmental Sanitation Services Monitoring Guidelines, January 2003, MLGRD

Manual on Environmental Health Inspections, October 2002, MLGRD

Best Practice Environmental Guidelines Series No.3, Manual for the Preparation of District Waste Management Plans in Ghana, July 2002, EPA/MLGRD

Best Practice Environmental Guidelines Series No.2, Guidelines for the Management of Health Care and Veterinary Waste in Ghana, July 2002, EPA/MLGRD

Best Practice Environmental Guidelines Series No.1, Ghana Landfill Guidelines, July 2002, EPA/MLGRD

Manual on Prosecution, May 2002, MLGRD

Management of Environmental Sanitation Services Guidelines, March 2002, MLGRD

Manual on Health Promotion, December 2001, MLGRD

Environmental Assessment Regulations, LI1652, June 1999, EPA

Notes on Latrine Technology, October 1999, MLGRD

4.2 Drainage Improvement Scheme

There is currently no effective drainage system in Obom. An immediate intervention would therefore be to provide 150m length of drain to be linked to the U600 drain along the main road. For improving sullage disposal, 108 households will be provided with properly designed and constructed soakage pit with concrete covers.

4.3 Excreta Management (faecal liquid waste) Improvement Programme

The Town Environmental Sanitation Plan is a comprehensive plan for providing improved household sanitation services to the entire Obom town covering homes, institutions and public facilities

Home Latrine Promotion Programme: Under this programme, household latrine construction by home-owners will be intensified through marketing by trained latrine artisans. Awareness raising and hygiene education will be supported through the Sub-district Environmental Health Office. The application of Community-Led Total Sanitation (CLTS) as recommended in the NESSAP for towns with population less than 7500 will be pursued

Funds for the training of artisans and the construction of squat slabs will be generated from special sanitation promotion fund to be created by GSMA from DACF and other sources and

other sustainable means of financing such as through micro-finance institutions will be explored. Other avenues of raising funds such as sanitation surtax on water will be explored. It is essential that the methods used in previous interventions be studied to afford copying for replication.

Box 4.1 Bangladesh's total sanitation campaign

Ten years ago Bangladesh, among the poorest countries in the world, had one of the lowest levels of coverage for rural sanitation. Today, it has ambitious plans to achieve nationwide sanitation coverage by 2010. Strongly supported by the country's aid partners, those plans target an achievable annual increase in sanitation coverage of 2.4 million households.

The total sanitation campaign is central to Bangladesh's success. Pioneered by a Bangladesh NGO in the late 1990s, it now involves more than 600 NGOs that work with local district authorities in marketing improved sanitation messages.

The starting point is engagement with local communities in identifying the problems associated with open defecation by calculating the amount of excreta deposited in the village environment, mapping dirty zones and identifying transmission routes to diarrhoea and wider public health problems. The "walk of shame" to defecation zones and the "excreta calculation" are the two initial tools for generating shared community concern. Communities discuss and document open defecation and consider the health consequences. Once interest is ignited, there is momentum for villagers to work with government agencies, NGOs, religious organizations and others to establish sanitation forums to identify concerns.

As the campaign has developed and demand for sanitation has increased, a vibrant small business sector has emerged. Bangladesh is now a world leader in producing, marketing and maintaining low-cost latrines. At the end of 2000 there were 2,400 registered small-scale production centres. That figure has since risen to 3,000 demonstrating again the capacity of small-scale providers to respond to local markets. The cost of latrines has fallen sharply. Meanwhile, village efforts have been supported by NGO-led microfinance schemes, mobilizing savings and providing loans.

While the programme has been based on demand-responsive apprOZChes, national policy has also been important. Successive governments have made rural sanitation a priority. The National Policy for Water and Sanitation, drawn up in 1998, establishes a policy framework for partnerships of small-scale entrepreneurs and community groups and provides support for marketing and training through local and national government agencies.

To get a sense of the effectiveness of this partnership, compare Bangladesh with India. Ten years ago the two countries faced similar problems. Since then, India has enjoyed far more rapid economic growth, widening the income gap between the two countries. But in rural sanitation India has fallen behind Bangladesh (see table), even though some Indian states have made progress.

In the decade to 2015 the biggest challenges are to sustain the momentum built up over recent years and to reduce inequalities in access. While data are patchy, the Bangladesh government is concerned that the improved national sanitation coverage rate may hide the fact that poor rural households are unable to finance even low-cost latrines. Its response has been to allocate the entire share of the annual development programme for sanitation to subsidize demand among the poorest 20% of the population.

	Bangladesh			India		
Indicator	**1990**	**2004**	**Change**	**1990**	**2004**	**Change**
Sanitation, national (%)	20	39	19	14	33	19
Rural sanitation (%)	12	35	23	3	22	19
Infant mortality (per 1,000 live births)	96	56	-40	84	62	-22
Source: Indicator table 10; WHO and UNICEF 2006						

Source: UNDP Human Development Report 2006 (**Bangladesh 1998, 2005; Kar and Pasteur 2005; Practical Action Consulting 2006a; VERC 2002; WSP-SA 2005)**

It is also important that the mode of promotion be consistent with what is pertaining in other districts to avoid undermining the progress of promoting sanitation within the larger jurisdiction of the region. It is therefore proposed that the adoption of CLTS be looked at as a district-wide strategy to be rolled out with Obom as one of the initial towns.

School Sanitation and Hygiene Education (SSHE): as part of this programme an assessment of the SSHE programme will be carried out to find out its effectiveness in schools. The SSHE programme is aimed at improving the conditions and reinforcing proper sanitation and hygiene behaviours and attitudes through use of improved facilities. Therefore, immediate intervention will be the provision of improved facilities in selected schools. Based on the assessment of SHEP effectiveness, Teaching and Learning Materials will be provided as part of re-orientation training of SHEP facilitators.

Public and Neighbourhood Facilities Improvement Programme: This programme is aimed at providing the community with a 20-seater pour flush toilet facility to replace the dilapidated one. The old 8-seater bucket latrine will also be refurbished into a pour flush latrine. This will be complemented by the establishment of private management franchises for sustainable operation and maintenance management. An estimated amount of GH¢73,382.00 is required for the programme.

4.4 Solid Waste Management Improvement Programme

Currently, there are no communal storage facilities in Obom. To prevent indiscriminate littering in some pockets of the town, there is need for provision of communal storage facilities.

An immediate intervention will be to provide a fenced and paved sanitary site near the clinic, with ancillary facilities as 1-10m^3 communal refuse bins mounted on concrete 2-skips of refuse holding bay and toll booth.

The R/C and D/A Schools, some households and the clinic shall be provided with litter bins. An incinerator shall also be provided for disposal of healthcare waste.

The potential for installing buy-back centres at strategic locations within the district to serve rural communities including Obom and nearby towns (e.g. Akoteaku) to feed artisanal thin-film plastic processing plants will be explored.

As an alternative to providing a communal transfer station, a pilot programme for the establishment of a community-based compost plant and/or a "buy-back" centre for plastics will be explored. At a current estimated cost of GH¢69,120 per buy- back centre (including installed processing and grinding machine and an initial working capital of GH¢14,400, a pilot programme for installing one facility within the district will be explored.

See Table 4.1 below for details of "buy-back" centre costing.

Table 4.1 Costing per "buy-back" centre

	ITEM	COST GH¢
1	Grinding Machine	4,320.00
2	Extruding Machine	17,280.00
3	2 Sheds	14,400.00
4	Electrical Wiring, etc	7,200.00
5	Rental od Plot	4,320.00
6	Start Up Capital for purchasing plastics	14,400.00
7	Contingency	7,200.00
	Total	**69,120.00**

The provision of artisanal buy-back centres and processing plants, compost plants and the promotion of household-latrines all have potential for creating jobs for the youth, especially for females who make up a larger proportion of the youth (20-45 yrs) in rural communities (*see fig. 1.0 after Executive Summary*). This is in line with GoG's goal of improving sustainable employment opportunities for the youth.

4.5 Improvement of Wetland Management

The programme would focus on the excavation of refuse from wetlands and planting of trees. The effect of implementing the various programmes above will further improve the ecological property of the wetlands.

4.6 Programme for Institutional and Management Support

The delivery of the various components of the Town Environmental Sanitation Development Plan and their management depends on improving the capacity of the front-line institutions responsible for the services. As a matter of strategy although financing of the various components may come from different sources, each of these sources will contribute to the implementation of a single, comprehensive and integrated capacity development programme anchored around the District Environmental Health Management Department (including DWST) of GSMA and Area Council covering Obom. The immediate support will be to strengthen and improve the EHMD in GSMA including provision of equipment and refurbishment of offices and the provision of targeted training to its staff.

Figure 4.1 Value chain map for thin film plastics waste

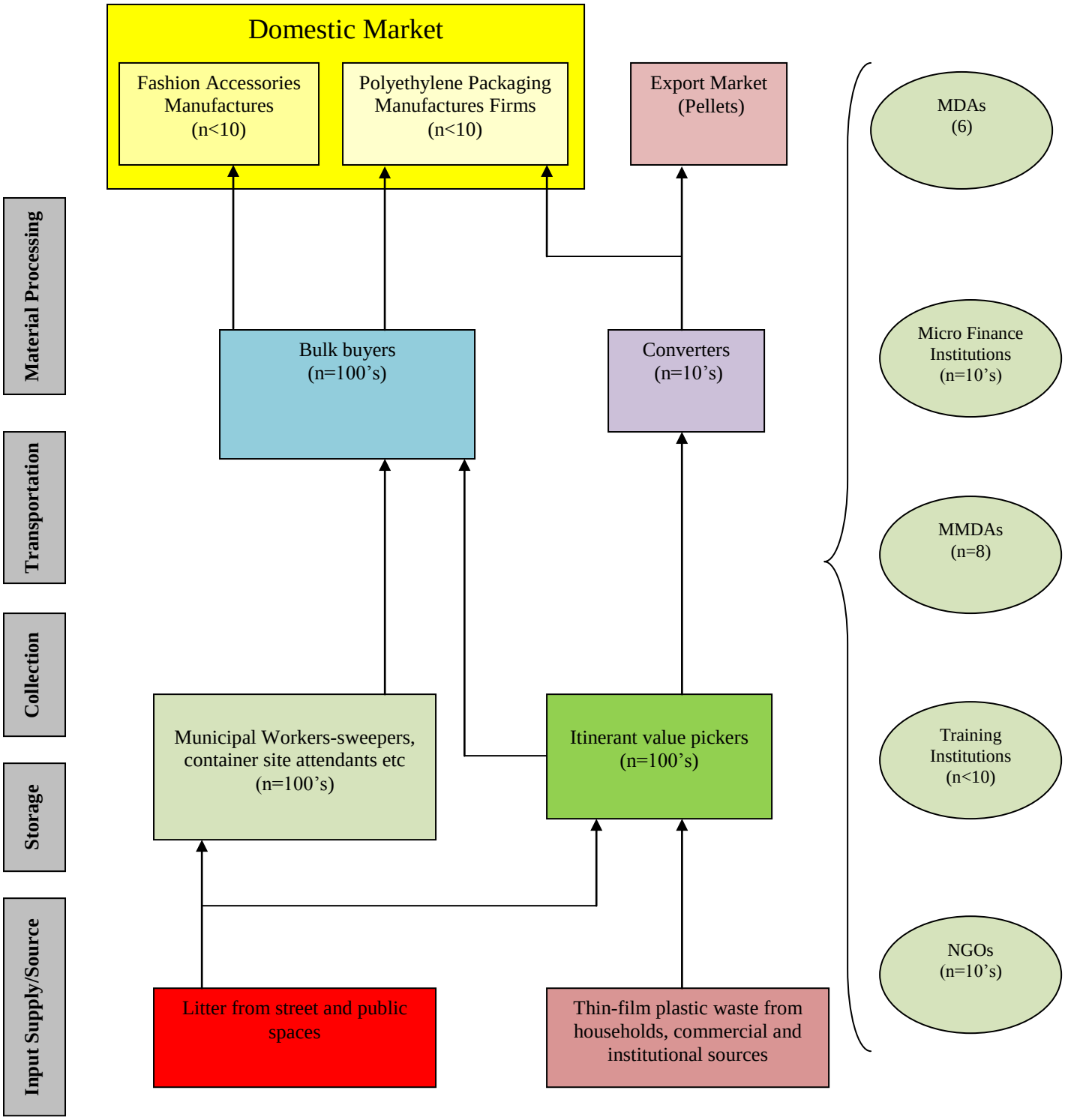
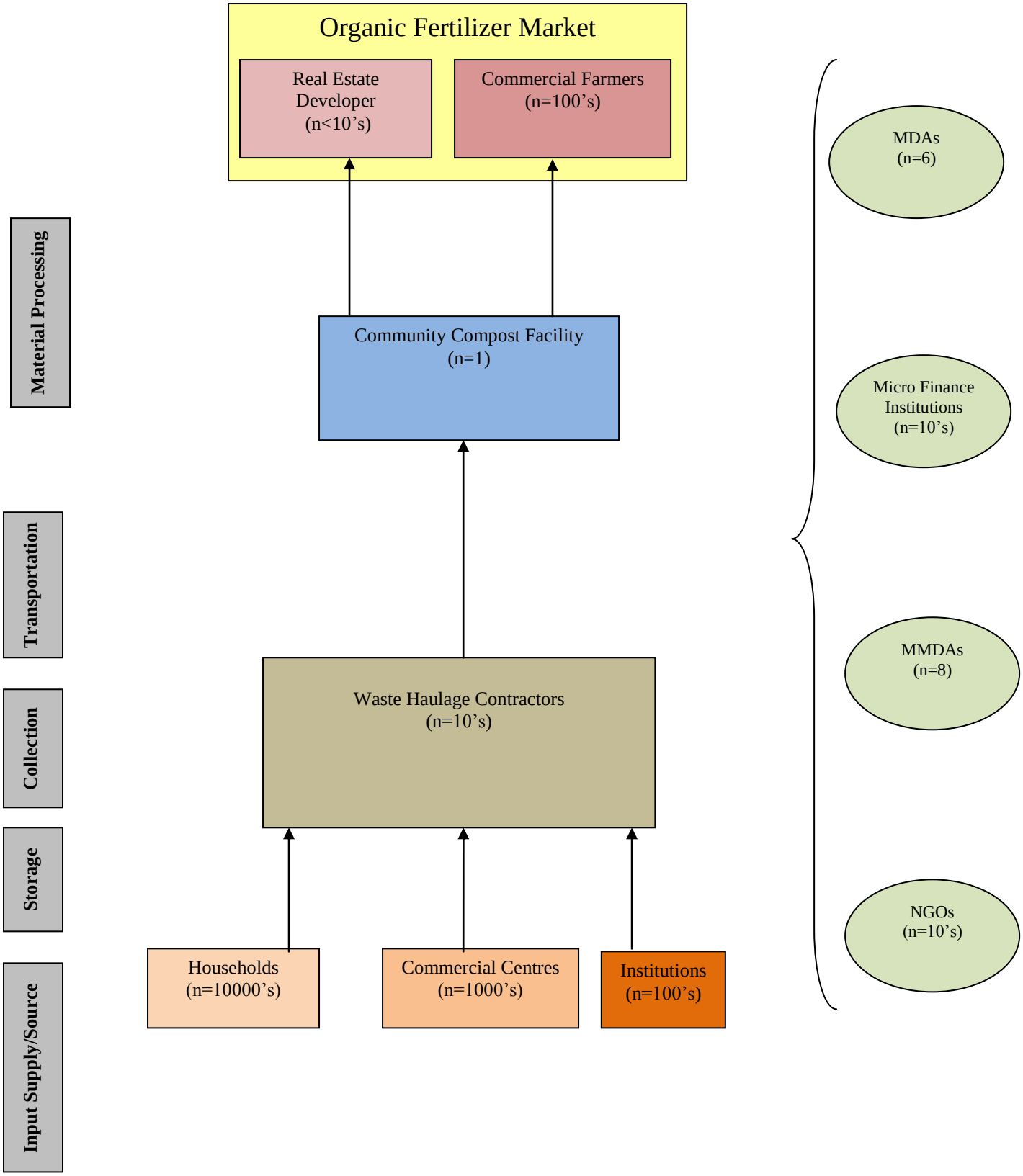


Figure 4.2 Compostables value chain map



PROGRAMME PACKAGES UNDER THE OBOM ESDP (2010-2020)

Component 1: Drainage Improvement Scheme

- Construction of drain in sanitary site and linked to drain along the main road
- Provision of drain maintenance equipment
- Provision of deep chambers made with block-work, plastered and pit filled with stones covered with concrete covers in households

Component 2: On-site Sanitation Promotion Programme

Home latrines

- User education and establishment of community participation framework to encourage home latrine ownership using district-wide Community-Led Total Sanitation (CLTS) and micro-finance institutions/artisans for promoting sanitation.

School Facilities

-Provision of Teaching and Learning Materials (TLMs) for hygiene promotion
-Training of School SHEP facilitators

Public Facilities

- Construction of one (1) neighbourhood/public facilities
- Establishment of private management franchises for operation and maintenance and cost recovery and introduction of privatized haulage of septage
- Remodeling of old school toilet facility

Component 3: Solid Waste Management Improvement Programme

- Identify an appropriate site for the construction of a sanitary site with ancillary facilities/compost plant.
- Identity and develop final disposal site for Obom (and neighbouring communities), the establishment of pilot "buy-back" centres and artisanal processing plant for thin-film and rubber
- Establish improved collection scheme
- Provision of litter bins to institutions, households and clinic
- Construction of an incinerator for disposal of healthcare waste.

Component 4: Improvement of Wetland Management

- Excavation of refuse and planting of trees.

Component 5: Management Support

- Provision of Office equipment to DEHMD-GSMA
- Technical Assistance - including project(s) preparation
- Training: CLTS, latrine promotion & construction, environmental management and planning and costing for DESSAP

5 INSTITUTIONAL ARRANGEMENTS

5.1 Ga South Municipal Assembly (GSMA):

In line with National Policy, the GSMA will gradually move away from direct provision of environmental sanitation services, and instead will promote active involvement of both communities and the private sector in their delivery. It is now mandatory that each Metropolitan, Municipal and District Assembly (MMDA) collect/update baseline data on environmental sanitation for the preparation of District Environmental Sanitation Strategy and Action Plan (DESSAPs). The DESSAPs will feed into the Medium-Term Development Plan (MTDP) and ensure the provision of needed funds for implementing sub-projects as the one developed for Obom. As part of its functions, the GSMA will refine and periodically update its DESSAP and thus this TESD Plan in consultation with the relevant area council administration, mobilize resources to implement it, supervise the design and construction of the facilities, oversee service contracts, and set and enforce regulations on waste discharges.

5.2 District Environmental Health and Management Department

In line with Local Government Act, 1993 (Act 462) and the Environmental Sanitation Policy (Revised, 2009) the GSMA's Environmental Health and Management Department (EHMD) is responsible for Environmental Protection and Standards Enforcement, Food and Water Hygiene, Environmental Health Promotion, and Waste Management. The new Local Government (departments of District Assemblies) (Commencement) Instrument, 2009, (L.I. 1961) has integrated the EHMD into a Department of Health (DoH).The Liquid Waste section will manage the programmes for households (home latrine promotion), public facilities (neighborhoods, and commercial areas), and schools. The solid waste section will manage the programme for solid waste improvement (including establishment of "buy-back" stations, sullage and drainage infrastructure.

The responsibilities of the two section managers include planning, community liaison, monitoring and evaluation, and the supervision of service contracts. The environmental protection section will be responsible for improvement of wetland management while the environmental health promotion section handles hygiene education including the proposed CLTS programme. The District Planning Coordinating Unit (DPCU) will coordinate and liaise with RCC-GAR, development partners, NGOs other external agencies and facilitate the rolling out of these programmes during the initial period. Ultimately, when a full District Works Department (DWD) is established in GSMA, as envisaged under Act 462, all works will be managed by the DWD in cooperation with the DoH and its Environmental Health Management section

5.3 Obom Area/Town Council

The Obom Zonal Council (OZC) will be the first-line institution responsible for dealing directly with the community. The functions, as stipulated, in the Establishment Instrument of the GSMA will include:

Validating data and designs; community mobilization; identification of needs and appraisal of applications for assistance; validating type of on-plot sanitation technologies and their suitability; soliciting community views and comments on capital and, O&M costs of facilities; responsible for managing franchises and quality of services by operators under guidance of EHMD (or the DoH as required); validate completion of projects and programmes; managing participatory monitoring and evaluation of programmes and projects.

5.4 Other Ministries, Departments and Agencies (MDAs)

In order to effectively coordinate the implementation of the various components of Obom TESDP, there is need for the involvement of several agencies besides GSMA and RCC-Greater Accra Region as initiators of this plan.

As indicated under Section 5, the sources of financing for implementing the TESDP make this essential. The mandates and facilitation roles of RCC-GAR, the Regional Environmental Health and Sanitation Directorate (REHSD) of the MLGRD, EHSD (MLGRD), and Department of Feeder Roads, and the central implementation responsibility of GSMA and its departments need to be coordinated effectively. The roles of the Community Water and Sanitation Agency (CWSA) and how projects managed by that entity is effectively integrated into the DESSAP of GSMA should also be given critical attention

6 IMPLEMENTATION PACKAGES

The facilities required to provide immediate interventions are set out in Table 6.1. As the TESDP evolves and more data becomes available the subsequent years interventions shall be defined to cover up to 2020. The facilities under the various components are grouped into financing packages. The estimated cost of each package is also given in Table 6.3.

In summary, the total cost of the first package for the Obom TESDP is estimated at **GH¢ 391,399** out of which **4.4%** would be for remedial intervention to improve drainage, **32.4%** for Excreta (liquid waste management) which includes provision of neighbourhood and public facilities **(18.8%),** School Sanitation and Hygiene Education **(2.0%).** Of the remainder **33.8%** will be for the Solid Waste Improvement Programme, **7.4%** for improvement of wetland and **22.1%** is for implementation and management support. It is expected that GSMA will seek financing through its share of DACF, donor-supported programmes including this (current) phase of the Local Service Delivery and Governance Programme and internally generated funds including household levies.

Table 6.1 Facilities to be provided under the proposed TESDP Financing Packages

Component Description	Total	Package 1	Package 2	Package 3
1. Drainage and Sullage Improvement				
Drain in sanitary sites to link drain along the main road.(m-length)	150	100	50	
Deep chambers made with block-work , plastered and pit filled with stones and covered with concrete covers (No.)	108	50	58	
2. Excreta (Liquid Waste) Management				
Home Latrine Promotion				
Community- Led Total Sanitation Program	-			
Artisan Training and Support to Sanitation Marketing (No.)	5	2	2	1
School Sanitation and Hygiene Educ.				
Provision of TLMs for hygiene promotion	-			
Training of SHEP Facilitors (No.)	5	2	2	1
Public Facilities Programme				
Construction of new public facilities (No.)	1	1		
Remodelling of old school toilet faclity	1	1		
3. Solid Waste Management				
Develop improved collection programme for households (No. of Houses)	323	100	123	100
Provide sanitary sites with ancillary facilities (communal containers and refuse holding bays) (No.)	1	1		
Construction of incinerator (No.)	1	1		
Establishment of buy- back centre with processing and grinding machines installed.	2	1	1	
Provision of litter bins to institutions (school and clinic)	5	5		
4. Improvement of Wetland Management				
Evacuate refuse and Plant trees (No. of sites)				

6.1 DA-level Programme Management

While the TESDP is dedicated to Obom Township there is need for close administration by the GSMA. For the timely updating and further improvement of the TESDP, the GSMA shall allocate program management resources to enable its departments bare the extra costs of managing the various components of the plan including hiring of specialist input for carrying out issue-specific studies, appraisals and timely technical and financial auditing. The GSMA will ensure that institutional strengthening and capacity building is harmonized and comprehensive to allow specific programmes buy into it.

A total amount of GH¢ 86,400 is earmarked for the start-up phase (2010) of implementing the TESDP.

Table 6.2 DA-Level Management Support (US '000)

Institutional Strengthening	Total	2010	2011	2012
Project Mgt Support (incl. Consultants)	**42**	15.8	14.4	11.5
Development/Review of TESDP	**37**	13.0	14.4	10.1
Capacity Devp. & Training	**42**	15.8	14.4	11.5
Community Management Framework	**29**	13.0	8.6	7.2
Refurbishment of EHMD and Sub-District Office	**37**	15.8	11.5	10.1
Provision of Office Equipment (EHMD/MTC)	**29**	13.0	8.6	7.2
Total	**216**	**86.4**	**72.0**	**57.6**

Note: Development/review of TESDP include preparation of drainage plan, developing Community Management Framework (for the MTC) & other studies

Specific Studies: as part of the implementation of the first package of the TESDP, a number of issue-specific studies will be carried out. To respond to the immediate needs of Obom the following studies will be carried out.

- Community Management Framework and Roles of Obom Zonal Council
- Value-Chain Analysis of Waste Management within Ga South Municipal Assembly leading to the establishment of "buy-back" centres and artisanal plastic waste recycling facility to service selected communities and towns.

In addition the status of the various facilities and amenities listed under Annexes A-C will have to be updated regularly by the team responsible for the oversight of the update of the TESDP:

To ensure proper ownership of the TESDP by GSMA, the Obom Zonal Council and traditional authorities, it is essential that the gathering of data and update of the TESDP be done in a participatory manner involving all key stakeholders.

Table 6.3 Costs for Components Studies, Sub-projects, and Institutional Strengthening for Comprehensive Environmental Sanitation Coverage - Year 2020

Component Description	Total (GH¢)	Package 1	%	Package 2	Package 3
1. Drainage and Sullage Improvement					
Drain in sanitary sites to link drain along the main road.(m-length)	18,576	12,384	3.2%	6,192	0
Deep chambers made with block-work , plastered and pit filled with stones and covered with concrete covers	6,998	3,240	0.8%	3,758	0
Provision of Maintenance Equipment	1,440	1,440	0.4%		-
Sub-total	**27,014**	**17,064**	**4.4%**	**9,950**	**0**
2. Excreta (Liquid Waste) Management					
Home Latrine Promotion					
Community- Led Total Sanitation Program	100,800	43,200	11.0%	28,800	28,800
Artisan Training and Support to Sanitation Marketing	5,256	2,102	0.5%	2,102	1,051
School Sanitation and Hygiene Educ.					
Provision of TLMs for hygiene promotion	17,280	7,200	1.8%	5,760	4,320
Training of SHEP Facilitators	2,088	835	0.2%	835	418
Public Facilities Programme					
Construct new public facility	54,720	54,720	14.0%	-	
Remodeling of old school toilet facility	18,662	18,662	4.8%	-	-
Sub-total	**198,806**	**126,720**	**32.4%**	**37,498**	**34,589**
3. Solid Waste Management					
Develop improved collection programme	16,279	5,040	1.3%	6,199	5,040
Provide sanitary sites with ancillary facilities (communal containers, refuse holding bays and toll booth)	51,651	51,651	13.2%	-	-
Construction of incinerator	5,587	5,587	1.4%		
Establishment of buy- back centre with processing and grinding machines installed.	138,240	69,120	17.7%	69,120	-
Provision of litter bins to institutions (school and clinic)	864	864	0.2%	-	-
Sub-total	**212,622**	**132,263**	**33.8%**	**75,319**	**5,040**
4. Improvement of Wetland Management					
Excavation of refuse and planting of trees	28,953	28,953	7.4%		
Sub-total	**28,953**	**28,953**	**7.4%**		
5. DA-Management Support	216,000	86,400	22.1%	72,000	57,600
Sub-total	**216,000**	**86,400**	**22.1%**	**72,000**	**57,600**
Total	683,395	391,399	100.0%	194,767	97,229
Add 10% to Cater for All Contingencies					
Total	751,735				

6.2 LSDGP Financed Sub-Projects

As part of the Environmental Sanitation Sub -Component of GoG/Danida Local Service Delivery and Governance Programme, the RCC-Greater Accra Region will provide **GH¢375,306.56** of the first stage implementation over a three year period to cover provision of aspects of drainage and sullage improvement, excreta management, solid waste management and improvement of wetland management. Counterpart funds for this include **GH¢16, 093.44** from the GSMA.

The LSDGP financed sub-projects will be carried out as part of on-going programmes by GSMA and the actual sub-project items will be finalized with the Assembly.

Chapter 7; **"*Summary of Sub-projects and Financing Packages*"** of this report presents the proposed items to be financed. The sub-projects and activities related to the Excreta Management Component (home, school and public facilities) will be completed by the GSMA with the assistance of local consultants. The MLGRD will facilitate the implementation process following the national procurement guidelines and RCC's procedures with active involvement of the Regional Environmental Health and Sanitation Directorate (RCC).

6.3 Human Resources Development

The Environmental Health Management Department (EHMD) (or as a section of the Department of Health when it becomes operational): The EHMD, Obom Zonal Council and private service operators are at the center of the TESDP. Consequently, it is important that the EHSD, Town councilors (including Assembly-members) and private operators (including artisans) are trained to carry out their responsibilities in implementing town-wide programmes.

Through the implementation of first stage sub-projects under Package 1, staff of EHMD (or DoH), DPCU (and DWST) and private operators will gain experience in all aspects of managing and implementing the proposed TESDP. Key areas of specialization and resource persons for the component(s) will be identified and linked to GSMA staff (DoH/EHMD, DPCU) responsible, so they can obtain ongoing support from local experts. Key areas of specialization for which the GSMA departments (with EHMD as the focus) are responsible and for which resource persons are needed include:

- Monitoring, evaluating and refining the TESDP.
- Financial management of the EHMD and accounting.
- Management of service/construction contracts.
- Management of the TESDP funds.
- Management and training of on-site construction contractors and inspectors.
- Management and training of service franchise managers for public latrines
- Monitoring wastewater discharges.
- Sanitation marketing and user education.

Community-Led Total Sanitation (CLTS): is emerging as one of the effective demand-responsive strategies that have the potential of *igniting* the involvement of all individuals and households to collectively identify the main routes of transmission of common diseases and impacts of environmental health problems. The identification of the extent of the problems and the challenges that need to be overcome in order to address the issues of poor sanitation, by community members themselves, usually serve as the initial *trigger* for community mobilization and action.

Unlike previous supply-driven approaches which have proven ineffective, CLTS is not prescriptive but embraces all the tools and approaches that enable empowerment of communities to be motivated and so take collective action, with the support of local government and other agencies to effectively promote sanitation awareness and behaviour change.

There are, however, a number of basic ingredients that serve to sustain community action beyond the "ignition point" (See Box 6.1).

In Ghana, pilot activities in CLTS commenced in selected towns in Central region under District-Based Water and Sanitation (DBWS) Component of the Second-phase of the Danida Water and Sanitation Sector Support Programme (WSSPSII), while the Regional Environmental Health Unit – RCC (Northern Region) piloted CLTS in 16.

Box 6.1: Basic Ingredients for Effective CLTS

- Community-based appraisal of current sanitation practices, including open-defaecation.
- Recognizing first the "public" good nature of sanitation and its impact as a "private" good and therefore stimulating demand at the collective level
- The need to maintain personal hygiene by all community members for good public health outcomes, and recognizing the main pathways for common diseases related to poor sanitation and hygiene, not water
- Maintaining an open-defaecation-free (ODF) environment, as an essential element that triggers and sustains collective behaviour change
- Avoiding the reliance of project-type subsidy driven installation of even demonstration latrines
- Identifying existing "anchor groups" within communities and building strategies around their main thrust of activities
- Harnessing political motivation through innovative messages that bring focus on the sanitation problem to enhance policies, institutional strengthening and capacity improvement for scaling-up CLTS momentum
- Assembling all the effective and successful participatory approaches for awareness raising and behavioural change
- Providing enabling support for all facilitators of sanitation and hygiene promotion - private artisans, CBOs and environmental health workers

On-site sanitation construction artisans, contractors and inspectors: Artisans and selected contractors will be given the opportunity to participate in periodic workshops so that they can learn to build all types of household sanitation systems including single and twin-pit VIP latrines, pour flush toilets, septic tank systems, and treatment and disposal units.

In addition they will be trained to market their services to individual households, to prepare design sketches and quotations, and to keep appropriate records. Staff of EHMD responsible for administering the funds for delivering of TESDP will be trained to review design proposals and cost estimates, process loan requests and inspect construction of household latrines, public and neighbourhood facilities, and drainage systems.

- Public latrine managers: franchise managers of public and neighbourhood facilities will be trained to operate and maintain the facilities, to collect revenues, and to keep technical and financial records.
- Homeowners and residents: Households will be informed of the technical options, encouraged to upgrade their household facilities, and information provided on use and maintenance of facilities through meetings organized by the OZC and through local radio.
- School children: Selected teachers and health education extension workers will be trained in participatory/interactive training techniques and appropriate training and teaching materials provided. User education will focus on the proper use of latrines, including cleansing materials and hand washing, and procedures for keeping latrines clean. Hygiene education material to be produced will cover environmental cleanliness; excreta, sullage and solid waste disposal; personal hygiene and food hygiene. Special workshops will also be organized through Parent and Teacher Associations to encourage proper use and maintenance of school and household facilities.

6.4 Monitoring and Evaluation

Results-Based Monitoring and evaluation is an important part of strategic environmental sanitation planning, since it is the means by which the TESDP is refined and updated. In the initial stages monitoring and evaluation will focus on implementation arrangements and quality control, but in the long run it must also include forward looking planning to ensure that the TESDP keeps up with changing circumstances in Obom and that future financing is arranged well in advance.

Monitoring and evaluation is the responsibility of the EHMD supported by the DPCU (and DWST), as each must track progress of the component for which the respective units (including DWD when it becomes established and functional) are responsible, identifying strengths and weaknesses of implementation strategy and modifying the approach as required. GSMA departments will be assisted in this by local consulting firms that specialize in urban environmental sanitation planning, and by the EHSD (MLGRD).

The framework for Environmental Sanitation Assessment and Audit will be updated as elements become clearly defined through its routine application. In addition to ongoing involvement by each of these groups, it is important that periodically (e.g. every two years) the TESDP and its focus be appraised to bring emerging international experience to bear on implementation arrangements. The implementation packages of the TESDP need to monitored and evaluated periodically, including the following:

Public latrine programme

- Performance of franchise operators including condition of facilities, sludge levels, rehabilitation/repair work required, general operation and maintenance, record keeping, and feedback from operators and users.
- Performance of septage hauling operations, quantities of sludge collected, dumping practices, and costs of operations including treatment and disposal
- Revenue collection, record keeping, and payments to OZC and GSMA.
- Periodic estimate of revenue and assessment of the financial viability of the franchise operator's business.
- Performance of twin versus single pit facilities, WC systems and user preferences for each.

Home latrine programme

- Quality of construction of each licensed artisan
- Contracting and construction management.
- Operation and maintenance of facilities.
- Number of persons using the facilities.
- Nuisance problems like flies and odors.
- Marketing and user feedback.
- Cost reducing measures.

School sanitation program

- Quality of construction.
- Operation and maintenance of facilities including condition of facilities, sludge levels, nuisance problems, and repair work required.
- User training and hygiene education.
- Number of pupils using the facilities.
- User feedback.

Environmental Health and Management Department

- Management capability and progress of each component.
- Accounting system and financing plan.

7 SUMMARY OF SUBPROJECTS AND FINANCING PACKAGES

7.1 SUB-PROJECT No. 1, TESDP-OBOM

1.	**PLAN COMPONENT**	**:**	**DRAINAGE AND SULLAGE CONVEYANCE IMPROVEMENT SCHEME**
2.	**SCHEDULE**	**:**	2010 - 2020
3.	**IMPLEMENTING AGENCY(S)**	**:**	GSMA, OBOM ZONAL COUNCIL
4.	**ESTIMATED PROJECT COST**	**:**	GOG/DA - GH¢ 2,559.60 EXTERNAL FUNDING- GH¢ 14,504.40 Total- GH¢ 17,064

5. PILOT SUB-PROJECT: Construction of Drains in Sanitary Sites and Provision of Deep Chambers for Sullage Disposal.

6. SCHEDULE: 2010 – 2012

7. OJECTIVES AND DESCRIPTION OF SUB-PROJECTS:

Introduction

This pilot sub-project is the initial intervention of the drainage and sullage conveyance improvement scheme of the Obom TESDP. The plan will benefit the whole of Obom.

Objectives

The primary objective of this intervention is to abate the perennial flooding of areas in the town and provide a more hygienic way for disposal of wastewater (water from kitchens and bathhouses). A secondary objective is to institute a community-level operation and maintenance management services of storm-water drainage.

Description/Scope

i. Construction of drains in sanitary sites to be linked to drain along the main road that provides immediate collection of storm water.
ii. Deep chambers made with block-work , plastered and pit filled with stones and covered with concrete covers
iii. Institution of community-level operation and management services the Obom Zonal Council

8. MANAGEMENT OF SUB-PROJECT:

a. Responsible Government/Co-ordinating Agency

The Ga South Municipal Assembly will be the responsible government agency with implementation support provided by the (DPCU and DWST). The EHSD of MLGRD will provide facilitation and coordination focus for central government level agencies such as HSD, DFR and GWCL.

b. Project Management

The District Planning Coordinating Unit (DPCU/DWST) with support from the DWD will be responsible for the management of the sub-project. HSD and local consultants will assist the GSMA the design of drainage interventions and supervision of contractors.

c. Implementation Strategies

■ **Project Development:** due to low levels of experience in DAs implementing drainage projects in small towns within the district and the need to provide quality supervision it is recommended that the OZC be formed to oversee the implementation of the project.

■ **Management of Maintenance:** The involvement of the community in the maintenance of sullage flow is central to achieving sustained improvement. The arrangements for community-level maintenance and management will include the involvement of the Obom Zonal Council (OZC) members to organize periodic clean-up exercises.

■ **Community Participation:** The formation and inauguration of the OZC will aid in the implementation of a community-level maintenance scheme for drains (as indicated above). The OZC being closer to the people will ensure active engagement of opinion leaders and traditional authority in evolving plans for active community participation for maintaining drains.

■ **Institutional Restructuring/Human Resources Development:** GSMA will take advantage of this pilot sub-project to institute its DWD and EHMD as required by Act 462 and seriously consider filling positions with the requisite personnel. In the interim appropriate staff will require specific training in drain cleansing and maintenance.

9. IMPLEMENTATION SCHEDULE:

Full scale implementation of the pilot sub-project is scheduled for October 2010 to December 2012, as shown in the schedule below.

WORK SCHEDULE FOR SUB-PROJECT No. 1, TESDP-KORDIABE

No.	Activities	2010				2011				2012				Cost (GH¢)
		1	2	3	4	1	2	3	4	1	2	3	4	
1	Construction of drain in sanitary sites and linked to suitable outfall or soakaway													12,384
2	Construction of deep chambers made with block-work , plastered and pit filled with stones and covered with concrete covers													3,240
3	Provision of Maintenance Equipment													1,440
	TOTAL													17,064

Financing Plan

Funding Source	Amount (GH¢)	% of Total
DANIDA/GoG (LSDGP)	17,064	100
Total	17,064	

7.2 SUB-PROJECT No. 2, TESDP-OBOM

1.	**PLAN COMPONENT**	**:**	**EXCRETA (LIQUID WASTE) MANAGEMENT**
2.	**SCHEDULE**	**:**	2010 - 2020
3.	**IMPLEMENTING AGENCY(S)**	**:**	GSMA, OBOM ZONAL COUNCIL
4.	**ESTIMATED PROJECT COST**	**:**	GOG/DA GH¢ 19, 008.00
			EXTERNAL FUNDING GH¢ 107,712.00
			Total GH¢ 126,720.00

5. PILOT SUB-PROJECT: Home Latrine Promotion, School Sanitation and Hygiene Education and Construction of Public and Institutional Facilities

6. SCHEDULE: 2010 – 2012

7. OJECTIVES AND DESCRIPTION OF SUB-PROJECTS:

Introduction

This pilot sub-project cover the three (3) sub-components of Excreta (Liquid Waste) Management discussed in the main ObomTESDP. The immediate intervention will focus on:

- *Home-Latrine Promotion* -35.4% of households in Obom have their own latrines. A situation quite satisfactory. However some households share their facilities with others and at times at a fee. With some residents still resorting to open defecation, this aspect of the subproject will initiate a community – led total sanitation programme and sanitation marketing employing local artisans to be selected and trained.
- *School Sanitation and Hygiene Education*: the need to emphasize user education and engender improved hygienic behaviour and practices are fundamental to the successful execution of the TESDP for Obom. This aspect of the plan focuses on school children and is seen as a rational step in meeting the objectives of sustainable planning. This phase targets the provision of teaching and learning materials and the training of 2 SHEP facilitators.
- *Public Facilities Provision Programme* – The mass of residents use either public facilities or resort to open defecation. As stated earlier, the ultimate goal is to increase the number of houses with home-latrines. However, there is the need to increase the number of facilities to maintain adequate public health in the town.

Objectives

The primary objective of this sub-project is to provide a comprehensive remedial action that when implemented will gradually abate the problem of poor excreta management in Obom and its effect on the health of residents. The specific objectives of the subproject are;

- To introduce a community-managed, demand driven and sustainable home on-site sanitation delivery system.
- To provide school children with the basis of developing the correct attitudes towards sanitation and personal hygiene through the use of improved and appropriate facilities and backup user education in schools.
- To provide improved sanitation facilities at selected public places and institutions within the town. Complementary to this objective is the formalization/introduction of private management franchise for sustained maintenance and management of public facilities.

Description/Scope

- Home Latrine Promotion
  - i. Comprehensive needs assessment in Obom.
  - ii. Comprehensive user education and training of latrine artisans
  - iii. Sanitation marketing employing trained artisans – employing *output-based-aid* tools
- School Sanitation and Hygiene Education
  - i. Training of facilitators
  - ii. Dissemination of appropriate teaching/training materials.
- Public Facilities Provision Programme
  - i. Detailed inventory of sites, market analysis, design of facilities and scheduling of implementation by OZC and GSMA for provision of additional facilities.
  - ii. Establishment of formal management franchises for operation and maintenance of facilities and cost-sharing arrangements between franchisee and licensor (GSMA and OZC).

8. MANAGEMENT OF SUB-PROJECT:

a. Responsible Government/Co-ordinating Agency

The Ga South Municipal Assembly will be the responsible agency with implementation support provided by EHMD or the DEHU with active participation of the OZC.

b. Project Management

The District Planning Coordinating Unit (DPCU) with support from the DWD (until the creation of a well functioning DWD, the DWST) will be responsible for the management of the sub-project. RCC-GAR (with support from the DPCU and DWST) will facilitate the provision of artisan training, and make available standardized drawings for home latrines.

c. Implementation Strategies

■ **Project Development:** the piloting activity for the home latrine improvement programme will depend largely on the procedures adopted by RCC-GAR. Together with results of the Environmental Sanitation Assessment and Audit, OZC will make the final choice start-up houses. For public/neighbourhood facilities, the construction of the (1 No. 20 seater pour flush latrine) public/neighbourhood facility will be finalized with the OZC and traditional authorities. *(See Annex for drawings of the proposed facilities and locations*).

■ **Management of Maintenance:** user education for hygienic maintenance of household facilities will be provided as part of community hygiene education. For public facilities, the expected levels of hygienic maintenance shall be provided in facility management plans (FMPs) as part of franchise agreements to be signed between GSMA/OZC and the franchisee. The EHSD will provide standardized FMPs and agreements for franchise management of facilities.

■ **Community Participation:** with the inauguration of the OZC it is expected that the GSMA will aid the OZC to implement vigorous education for home-latrine promotion at the community-level. The OZC will be involved in the process of letting franchises for the management of public/neighbourhood toilets and will be the first point of receipt of performance reports on the management of public toilets in Obom.

■ **Institutional Restructuring/Human Resources Development:** GSMA will take advantage of this pilot sub-project to establish its DWD and EHMD as required by Act 462 and seriously consider filling positions with the requisite personnel. In the interim, selected staff will benefit from training in projects and construction management (including procurement) and participatory health/hygiene education methodologies.

9. IMPLEMENTATION SCHEDULE:

Full scale implementation of the pilot sub-project is scheduled for October 2010 to December 2012, as shown in the schedule below.

WORK SCHEDULE FOR SUB-PROJECT No. 2, TESDP-OBOM

No.	Activities	2010				2011				2012				Cost (GH ¢)
		1	2	3	4	1	2	3	4	1	2	3	4	
1	Home Latrine Promotion													
	i. Community- Led Total Sanitation Program													43,200
	ii. Artisan training and Support to sanitation mkt.													2,102
2	SSHE													
	i. Provision of TLMs													7,200
	ii. Training of SHEP Facilitators													835
3	Public/Neighbourhood Improvement Programme													
	i. Constructlion new Public KVIP Toilet Facilities													54,720
	ii. Remodelling of old school toilet facility													18,662
	TOTAL													126,720

Financing Plan

Funding Source	Amount (GH¢)	% of Total
DANIDA/GoG (LSDGP)	110,626.56	87.3
GSMA	16,093.44	12.7
Total	126,720.00	

7.3 SUB-PROJECT No. 3, TESDP-OBOM

1.	**PLAN COMPONENT**	**:**	**SOLID WASTE MANAGEMENT IMPROVEMENT PROGRAMME**
2.	**SCHEDULE**	**:**	2010 - 2020
3.	**IMPLEMENTING AGENCY(S)**	**:**	GSMA, OBOM ZONAL COUNCIL
4.	**ESTIMATED PROJECT COST**	**:**	GOG/MA – GH¢ 19,839.45 EXTERNAL FUNDING – GH¢ 112,423.55 Total GH¢ 132,263.00

5. PILOT SUB-PROJECT: Improved Refuse Collection Programme, Provide refuse container and Upgrade selected site

6. SCHEDULE: 2010 – 2012

7. OJECTIVES AND DESCRIPTION OF SUB-PROJECTS:

Introduction

This pilot sub-project will be one of several to be implemented in small towns with oversight from area councils. The sub-project will also target the evacuation of refuse from communal dump sites and the identification of appropriate sites for secondary facilities.

Objectives

The primary objective of the Solid Waste Management Improvement Programme is to gradually improve and restore the currently poor refuse collection system in Obom. The secondary objective will also include how improved solid waste management is integrated into excreta management, storm-water drainage and sullage conveyance and the required institutional collaboration.

Description/Scope

- Identification of appropriate site for communal containers based on housing distribution
- Provision of communal containers at selected sites and establishment of improved collection scheme
- Identification and development of final disposal site for Obom (and neighbouring communities), the establishment of pilot "buy-back" centre and artisanal processing plant for thin film and rubber.
- Exploring the possibility of the establishment of a community compost plant.
- Construction of an incinerator for disposal of healthcare waste.

8. MANAGEMENT OF SUB-PROJECT:

a. Responsible Government/Co-ordinating Agency

The Ga South Municipal Assembly will be the responsible government agency with implementation support provided by DPCU and the District Environmental Health Office (or the Environmental Health and Management Department).

b. Project Management

The District Environmental Health Office will be responsible for project management. The District Planning Coordinating Unit (DPCU) with support from the DWD will be responsible for the managing the related works for site improvement and upgrading.

c. Implementation Strategies

■ **Project Development:** the OZC will initially designate sites for rehabilitation or upgrading as well as placement of communal containers. Local NGOs and/or consultants will be engaged to design refuse collection programme and site upgrading works.

■ **Community Participation:** while maintenance of drains is provided for under the drainage improvement sub-project, it is important to implement an effective community education and enforcement with recourse to appropriate sanction and penalty against littering and indiscriminate dumping into drains.

■ **Institutional Restructuring/Human Resources Development:** GSMA will take advantage of this pilot sub-project to establish its DWD and EHMD as required by Act 462 and seriously consider filling positions with the requisite personnel. The EHSD and the REHU-Greater Accra Region will assess ESICOME programme and carry out training of EHOs. A training programme for prosecution and enforcement of bye-laws will be designed for EHOs and selected councilors of the OZC.

9. IMPLEMENTATION SCHEDULE:

Full scale implementation of the pilot sub-project is scheduled for October 2010 to December 2012, as shown in the schedule below.

WORK SCHEDULE FOR SUB-PROJECT No. 3, TESDP-OBOM

No.	Activities	2010				2011				2012				Cost (GH ¢)
		1	2	3	4	1	2	3	4	1	2	3	4	
1	Immediate evacuation of refuse from communal dump sites and develop improved collection programme													5,040
2	Provision of litter bins to institutions													864
3	Provide sanitary site with ancillary facilities (communal containers, refuse holding bays and tollbooth)													51,651
4	Construction of an Incinerator													5,587
3	Establishment of buy- back centre and artisanal processing plant for thin film and rubber.													69,120
	TOTAL													**132,263**

Financing Plan

Funding Source	Amount (GH¢)	% of Total
DANIDA/GoG (LSDGP)	132,263.00	100
Total	132,263.00	

7.4 SUB-PROJECT No. 4, TESDP-OBOM

1.	**PLAN COMPONENT**	**:**	**IMPROVEMENT OF WETLAND MANAGEMENT**
2.	**SCHEDULE**	**:**	2010 - 2020
3.	**IMPLEMENTING AGENCY(S)**	**:**	GSMA, OBOM ZONAL COUNCIL
4.	**ESTIMATED PROJECT COST**	**:**	GOG/DA - GH¢ 4,342.95
			EXTERNAL FUNDING – GH¢ 24,610.05
			Total - GH¢ 28,953.00

5. PILOT SUB-PROJECT: Remediation of Wetland

6. SCHEDULE: 2010 – 2012

7. OBJECTIVES AND DESCRIPTION OF SUB-PROJECT:

Introduction

This pilot aims at carrying out immediate remedial actions for restoring wetlands. There is therefore need to remedy the current poor situation and put in place improved maintenance management arrangements.

Objectives

The objectives of the subproject are:

- To restore wetlands and derive its' potential functions and products
- To safeguard processes for maintaining the wetlands; after remediation projects to be carried out under this sub-project.

Description/Scope

- Evacuation of refuse from wetlands
- Planting of trees to maintain wetlands.

8. MANAGEMENT OF SUB-PROJECT:

a. Responsible Government/Co-ordinating Agency

The Ga South Municipal Assembly will be the responsible government agency with implementation support provided by the District Environmental Health Office (or the Environmental Health and Management Department where is established), and the Obom Zonal Council. The Ghana Water Company Limited (GWCL) has direct responsibility for maintaining water-abstraction reservoirs and related watersheds. The Water Resources Commission (WRC) as the regulating agency for all sources of water also has a role as part of developing the national framework and strategy for managing wetlands in the country.

b. Project Management

The District Environmental Health Office will be responsible for project management. The District Planning Coordinating Unit (DPCU) will provide support for managing the remediation works to be carried out for improving and upgrading the wetland.

c. Implementation Strategies

■ **Project Development:** the Obom Zonal Council (OZC) and the GSMA will work with a local NGO to identify and assess all point and non-point sources of pollution and document their levels (quantities, volumes). The current state and history of previous land-use patterns (e.g. location of old refuse dumps "bola") together with the identified sources and their impacts will serve as the basis for drawing the remediation and after care plan for restoring the wetland.

■ **Community Participation:** the natural use of the wetland as a sink places a burden of responsibility on all residents and especially the OZC for the proper maintenance of the wetland. The OZC will champion community education and target residents who live close to, and along the banks of the wetland.

9. IMPLEMENTATION SCHEDULE:

Full scale implementation of the pilot sub-project is scheduled for October 2010 to December 2012, as shown in the schedule below.

WORK SCHEDULE FOR SUB-PROJECT No. 4, TESDP-OBOM

No.	Activities	2010				2011				2010				Cost (GH¢)
		1	2	3	4	1	2	3	4	1	2	3	4	
1	Immediate evacuation of refuse from wetlands													28,512
2	Planting of trees													441
	TOTAL													28,953

10. Financing Plan

Funding Source	Amount (GH¢)	% Total
DANIDA/GoG(LSDGP)	28, 953	100
Total	28,953.00	

7.5 SUB-PROJECT No. 5, TESDP-OBOM

1.	**PLAN COMPONENT**	**:**	**INSTITUTIONAL STRENGTHENING AND CAPACITY BUILDING**
2.	**SCHEDULE**	**:**	2010 - 2020
3.	**IMPLEMENTING AGENCY(S)**	**:**	GSMA, OBOM ZONAL COUNCIL
4.	**ESTIMATED PROJECT COST**	**:**	GOG/MA - GH¢ 12,960.00 EXTERNAL FUNDING – GH¢ 73,440.00 Total - GH¢ 86,400.00

5. PILOT SUB-PROJECT: Municipal Assembly Management Support

6. SCHEDULE: 2010 – 2012

7. OBJECTIVES AND DESCRIPTION OF SUB-PROJECT:

Introduction

This pilot aims at building the institutional capacity of the Municipal Assembly (MA) by equipping the MA staff with adequate technical and resource management skills for the efficient management and implementation of programmes outlined in the TESDP.

Objectives

The objective of the subproject is:

- Train MEHMD staff and allocate program management resources to enable its departments bare the extra costs of managing the various components of the plan including hiring of specialist input for carrying out issue-specific studies, appraisals and timely technical and financial auditing

Description/Scope

- Provision of office equipment to the MEHMD-GSMA
- Provide technical assistance- including project(s) preparation
- Training : CLTS, latrine promotion & construction, environmental management and planning & costing for DESSAP

8. MANAGEMENT OF SUB-PROJECT:

a. Responsible Government/Co-ordinating Agency

The Ga South Municipal Assembly will be the responsible government agency with implementation support provided by the Municipal Environmental Health Office (or the Environmental Health and Management Department where is established), and the Obom Zonal Council. .

b. Project Management

The District Environmental Health Office will be responsible for project management.

c. Implementation Strategies

■ **Project Development:** The Obom Zonal Council (OZC) and the GSMA will work with a local NGO to identify all sectors of the EHMD that need some capacity building and institutional management resources.

9. IMPLEMENTATION SCHEDULE:

Full scale implementation of the pilot sub-project is scheduled for October 2010 to December 2012, as shown in the schedule below.

WORK SCHEDULE FOR SUB-PROJECT No. 5, TESDP-OBOM

No.	Activities	2010				2011				2010				Cost (GH ¢)
		1	2	3	4	1	2	3	4	1	2	3	4	
1	Municipal Assembly/ EHMD Institutional Strengthening and Capacity Development													86,400
	TOTAL													86,400

10. Financing Plan

Funding Source	Amount (GH¢)	% Total
DANIDA/GoG(LSDGP)	86,400.00	100
Total	86,400.00	

8 ANNEX A: SANITATION TECHNOLOGY OPTIONS

Description of Facilities

The strategic sanitation planning process emphasizes mix of different types of technologies and levels of service instead of the selection of a single technology for the entire town. In reviewing options for selection, the following range of technologies was considered;
KVIP
WC/Septic Tank
Pour/flush toilet
Aqua privy
Vault chamber
Ecological sanitation options

Ventilated Improved Pit Latrines

A ventilated improved pit (VIP) latrine is a traditional latrine to which a vent pipe covered with a screen has been added to minimize odour and fly problems. In urban areas where available land is limited, an offset, double-pit design, fitted with either a squat plate or seat (KVIP), is recommended. Such a design can easily be retro-fitted into an existing house and is almost maintenance-free. When a pit is full, it is sealed for 18-24 months during which wastes undergo decomposition and pathogens are destroyed. The decomposed pit contents can then be removed manually without health risks and used as a soil conditioner.

The offset pit can be sized according to the number of users and enlarged at a later time if necessary. The usual usage population is 25-30 person or 5-6 households for a single-seater alternating twin-pit KVIP latrine and around 15 persons or 3 households for the ordinary VIP latrine. KVIP latrines are advantageous because no water is required for flushing and all kinds of anal cleansing materials can be used without threat of blockage. In addition, they can accommodate the water needed for anal cleansing if that is preferred. Wherever, a property has sufficient space to allow a detached latrine to be constructed and then moved when filled with solids, a single, deep-pit model will yield major savings as it is one-third the price of a twin-pit latrine.

Septic Tank and Drain Field Systems

Low volume flush toilets (WCs) with septic tanks are a relatively expensive but good option. Wastewater flows from the home by gravity to a septic tank which is usually a double-chambered, watertight, concrete tank where heavier solids settle to the bottom and accumulate as sludge, and grease and lighter particles rise to the surface and form a scum. The clarified effluent then flows to a drain field. Septic tank systems are particularly advantageous as they can accommodate both excreta and sullage. A properly designed system can provide many years of good service, however, the tank will become blocked with solids if it is not cleaned out every 3-4 years and wastewaters will surface if the drainfield is not large enough to accommodate the wastewater flow. It is important that drainfields (either seepage pits or gravel filled trenches) are sized to provide one square meter of infiltration area for every 10 to 25 liters/day of wastewater, depending on the soil permeability. A simple percolation test can be used to determine the proper design factor.

9 ANNEX B: SCHOOL SANITATION FACILITIES

List of schools and inventory of existing sanitary facilities in schools

- Name of school
- Facility ID number
- Location (sub-metro area or sector)
- Type of school (primary, junior secondary)
- Cluster (ID number of adjacent schools)
- Number of students
- Type of sanitation facility (WC, KVIP, pit latrine)
- Number of cabins
- Condition

10 ANNEX C: PUBLIC SANITATION FACILITIES

List of Public Facilities in Neighborhood

- Facility ID
- Location (sub-metro area or sector)
- Type (KVIP, pit latrine, WC)
- Number of cabins
- Average number of users
- Condition

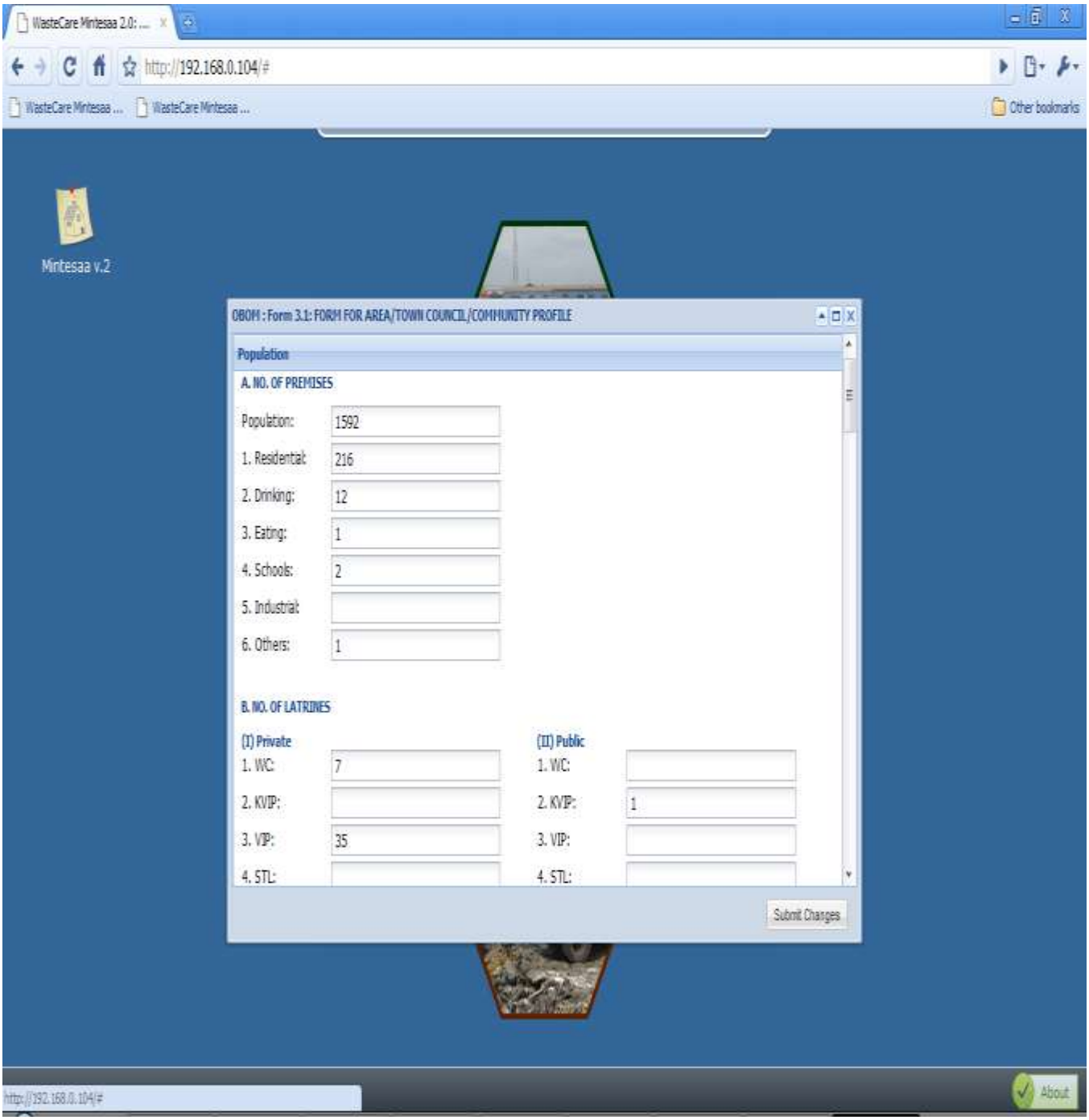
List of Public Facilities in Commercial Areas

- Facility ID
- Location (sub-metro area or sector)
- Type (KVIP, pit latrine, WC)
- Number of cabins
- Average number of users
- Condition

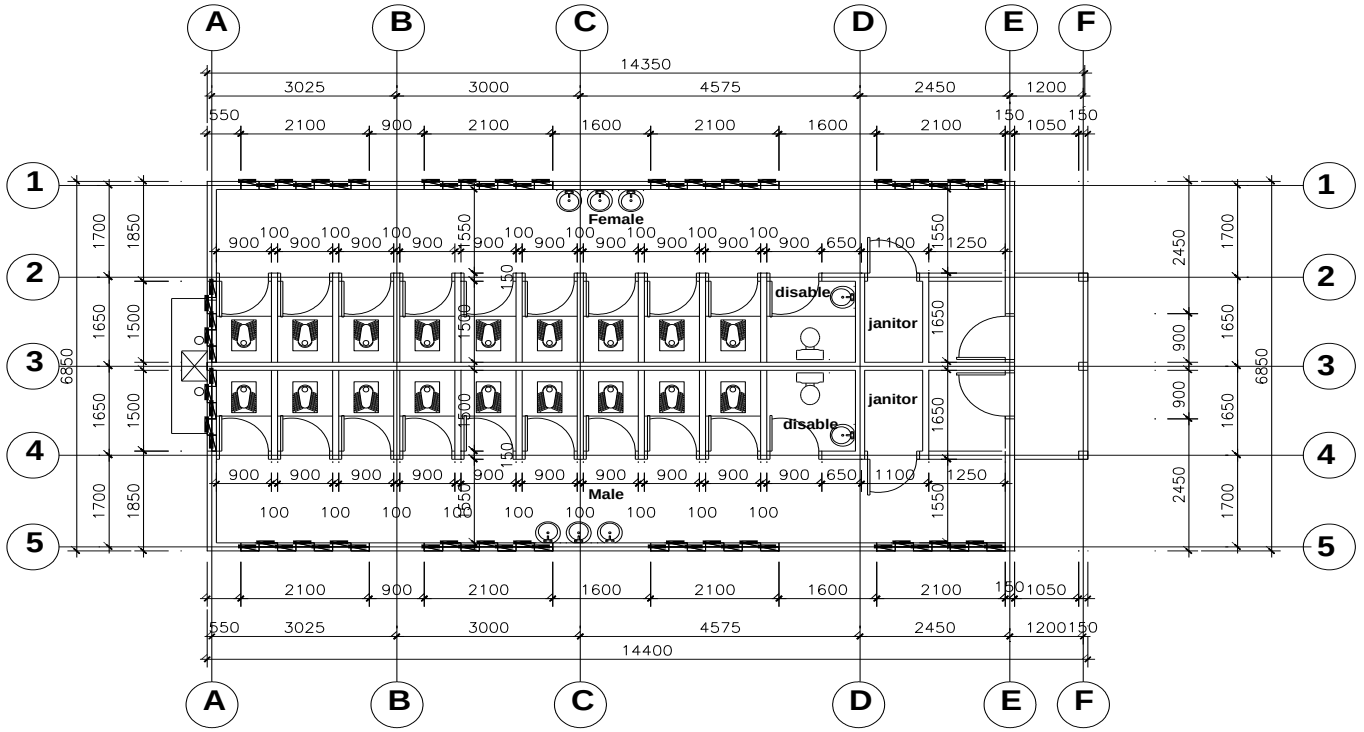
Inventory of sites should also cover user analysis and scheduling of implementation of sub-projects under Packages.

- Sample Design of facilities and block layouts.
- Preparation of contract document for franchise operation of the public facilities and program to train franchise operators.

11 ANNEX D: INTERFACE OF THE MINTESAA 2.0 SHOWING DATA ON SOME SANITATION FACILITIES IN OBOM.



12 **ANNEX E:** Designs for Proposed Facilities

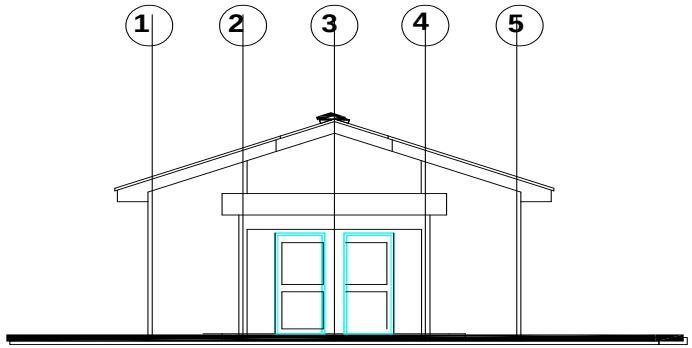


GROUND FLOOR PLAN

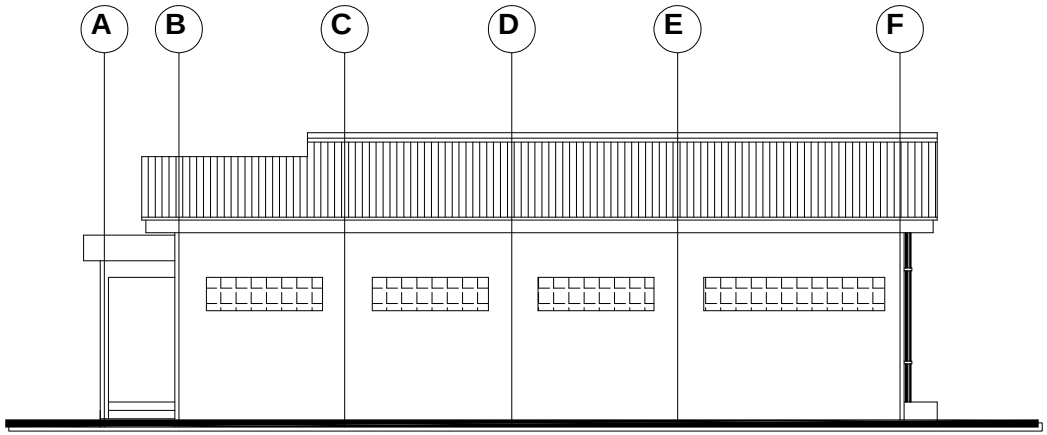
20- SEATER POURFLUSH TOILET

WASTECARE

20- SEATER POURFLUSH TOILET

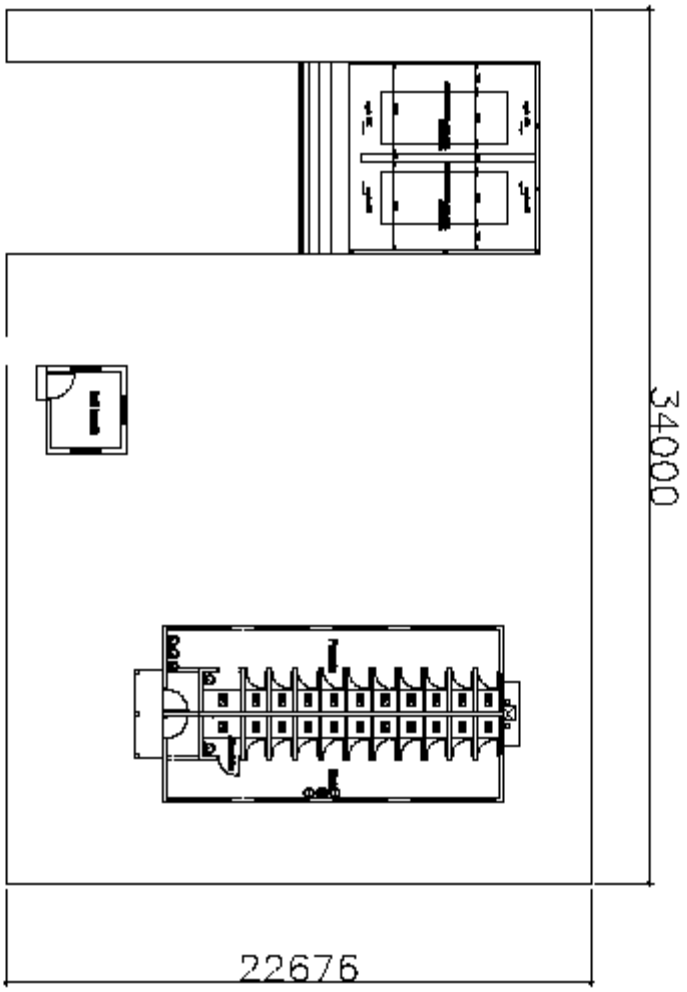


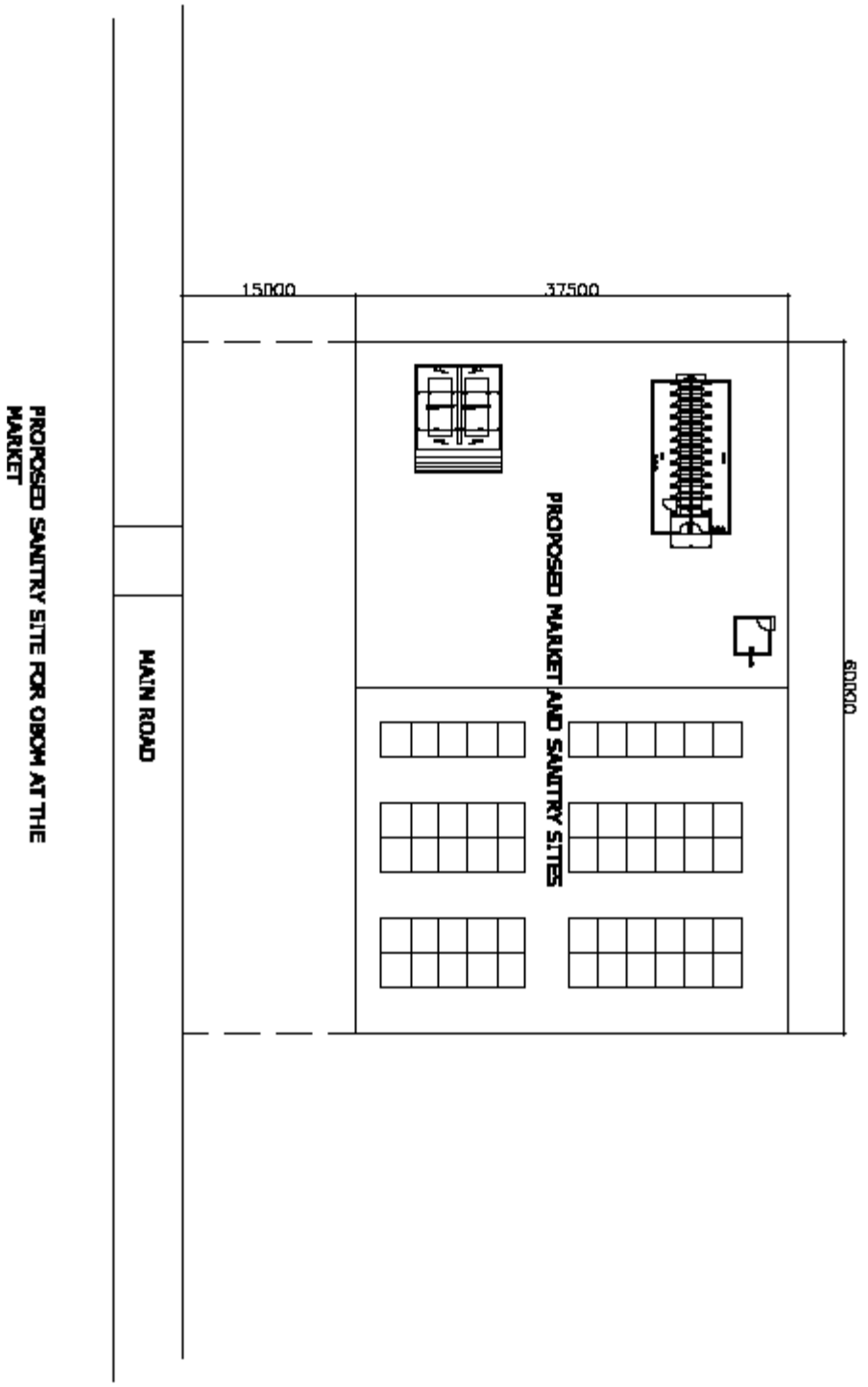
FRONT ELEVATION

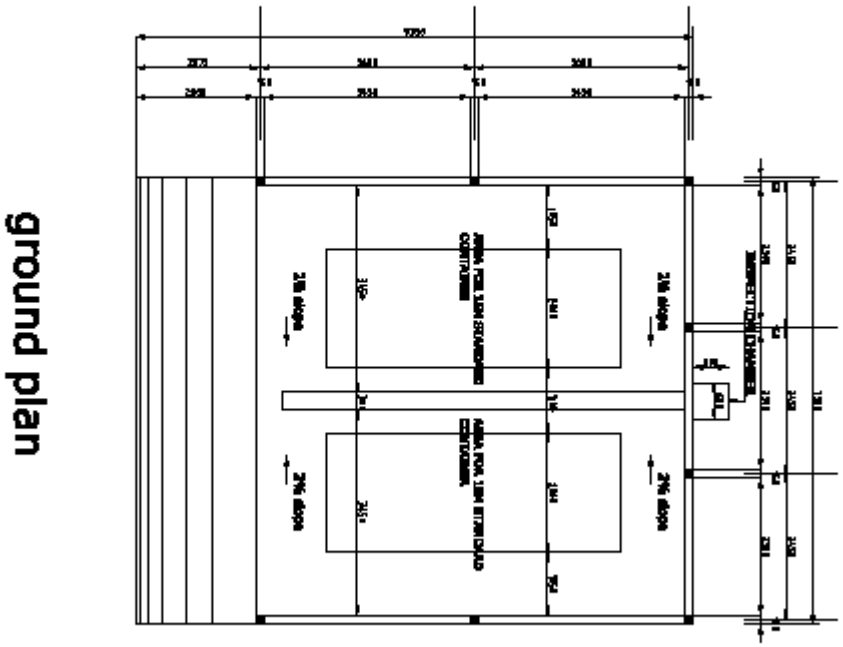


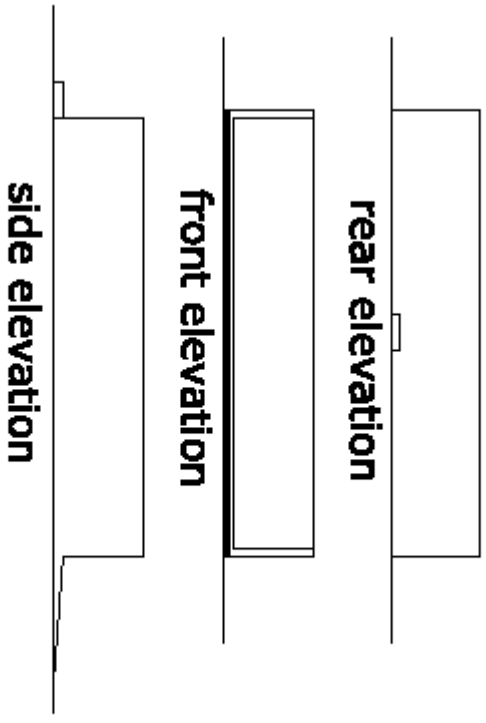
RIGHT SIDE ELEVATION

PROPOSED SANITRY SITE FOR OBOM CLOSE TO THE CLINIC

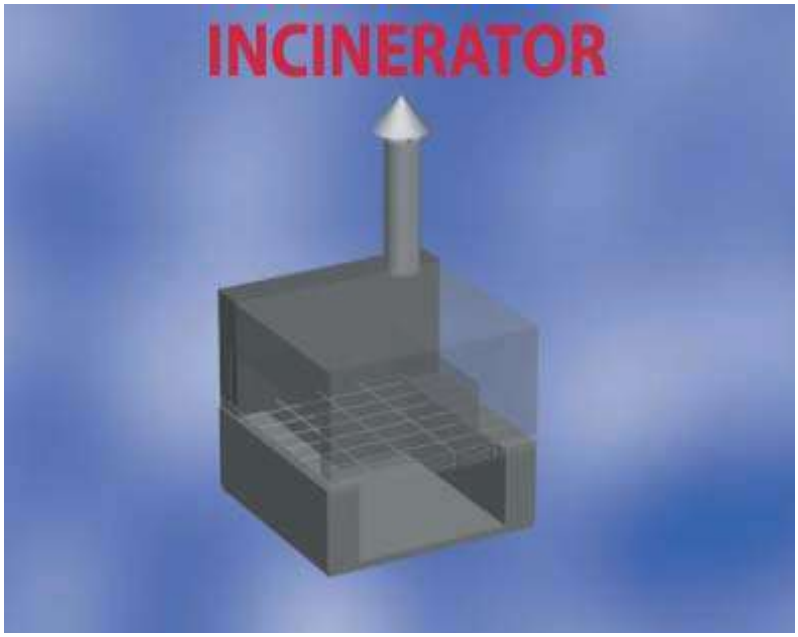



PROPOSED SANITRY SITE FOR OBOM AT THE MARKET
MAIN ROAD
15000
37500
PROPOSED MARKET AND SANITRY SITES
61000


ground plan


side elevation
front elevation
rear elevation

BRICK INCINERATOR FOR THE DISPOSAL OF HEALTHCARE WASTE



13 **ANNEX F:** Environmental Sanitation Assessment and Audit

MINISTRY OF LOCAL GOVERNMENT AND RURAL DEVELOPMENT

REPUBLIC OF GHANA

GREATER ACCRA REGIONAL COORDINATING COUNCIL

Local Service Delivery and Governance Programme
(LSDGP)

ENVIRONMENTAL SANITATION SUB-COMPONENT

ENVIRONMENTAL SANITATION ASSESSMENT AND AUDIT FOR SMALL TOWNS

- OBOM -

WASTECARE

Consultant
WasteCare Associates
P. O. Box LG 486
Legon-Accra

Tel: 233-302-786072
Fax: 233-302-786072
E-mail: info@wcghana.com

Client
RCC-GAR
Environmental Health and
Sanitation Directorate, MLGRD.
P. O. Box M50
Accra
Tel: 233-302-682047
Fax: 233-302-682047

SEPTEMBER 2010

CONTENTS

1 INTRODUCTION

This assignment forms part of the Government of Ghana (GoG)/Danida-supported Local Service Delivery and Governance Programme (LSDGP). The Environmental Sanitation Sub–Component is expected to carry out environmental sanitation studies in selected small towns in the Greater Accra, Eastern and Volta regions.

The Environmental Sanitation Sub–Component of the LSDGP seeks to support small towns to undertake environmental sanitation assessments and audits that will aid the development of plans for incremental improvement in excreta management and disposal/treatment, refuse collection and disposal/treatment, as well as infrastructure for sullage and storm-water conveyance.

1.1 BACKGROUND

In fulfillment of the above programme, the Regional Coordinating Council (RCC), Greater Accra Region acting through the Environmental Health and Sanitation Directorate (EHSD) engaged WasteCare Associates to provide:

'CONSULTANCY SERVICES FOR SMALL TOWNS ENVIRONMENTAL SANITATION ASSESSMENT AND AUDIT IN GREATER ACCRA REGION'

The environmental sanitation assessments and audits were carried out in three selected small towns in three districts of Greater Accra region, namely ***Obom in Ga South Municipality, Akplabanya in Dangme East District and Kordiabe in the Dangme West District***.

1.2 OBJECTIVES

The immediate objective of the assignment is *to carry out an assessment and audit of environmental sanitation to determine the existing situation of environmental sanitation in the three small towns*. This will lead to the development of Town Environmental Sanitation and Development Plans (TESDP) for each town that can be incorporated in the District Environmental Sanitation Strategy and Action Plan (DESSAP) for particular districts, and to prepare sub-projects to address prioritized interventions.

1.2.1 Expected Outputs

Immediate Output (Draft Report)

- Environmental Sanitation Assessment and Audit report for the three towns.

Final Outputs (Final Report)

- Town Environmental Sanitation Development Plan for each of the selected small towns with optimal solutions (sub-projects focusing on both social and infrastructural services), corresponding preliminary costs and proposed funding sources from (i) the LSDGP and (ii) other sources.

1.3 METHODOLOGY AND TOOLS

1.3.1 Literature Review

The following documents were assembled and reviewed in planning the assessment and audit protocols and procedures:

- Local Government Act, 1994 (Act 462)
- Revised Environmental Sanitation Policy, 2009
- Environmental Protection Act, 1994 (Act 490)
- Environmental Assessment Regulations, 1999 (LI 1652)
- USAID/EHP Guidelines for the Assessment of Sanitation Policies
- National Environmental Sanitation Strategy and Action Plan, (NESSAP, 2010)

- Local Government Service Act, 2003 (Act 656)
- Local Government (Departments of District Assemblies) (Commencement) Instrument, 2009 (L.I. 2009)
- Strategic Planning for Municipal Sanitation
- SEA Practical Guide for Water and Environmental Sanitation
- Landfill Guidelines
- Health-care waste policy
- District Economic profiles
- Other relevant documents

Material gathered from the review was used to inform the development of the assessment and audit tools and related procedures that were followed.

1.3.2 Field Study

The environmental sanitation assessment and audit was carried out by segmenting the town into sampling areas:

- Obom was divided into 3 sampling areas based on housing segments and concentration of population. The sampling areas were as follows:
  - Sample Area 1 – Obom New Site
  - Sample Area 2 – School Area
  - Sample Area 3 – Mosque Area

(Refer to Map for enumeration areas).

1.3.3 Study Tools

Three instruments were applied:

- A structured household questionnaire for gathering data on environmental sanitation facilities and services
- Focus group discussions and key person interviews
- Environmental Profiling form

These participatory tools were derived from the Practical Guide on Strategic Environmental Assessment (SEA) of Water and Environmental Sanitation and supplemented with additional information from other sources.

1.3.4 Administering the Assessment and Audit Instruments

The processes adopted for the assessment and audit were highly participatory, in conformity with SEA principles.

District Administration officials, traditional authorities and opinion leaders were briefed on the whole process and their contributions taken into consideration prior to commencement. District Planning officers, District Water and Sanitation Teams (DWSTs), Regional and District Environmental Health officers were involved in the planning and identification of relevant issues in the town.

Household/Community Survey

In administering the questionnaire, the following parameters were taken into consideration:

- Population – based on 2000 Population and Housing Census data and projected to 2009 using the generic formula:
  $P_{2009} = P_{2000} \times (1 + r)^n$, where r = district growth rate and n = number of intervening years (i.e. 9)
- Estimate of household size – based on 2000 Population and Housing Census and site visits
- Physical layout of survey areas – town maps, generated schematic layouts

The survey was designed for gathering information from households on:

a) Watershed management – including wetlands, surface water embankments etc
b) Water supply – types of systems, access, quality, quantity etc
c) Wastewater disposal – practices, effluents, ponding etc
d) Liquid (faecal) waste disposal – types of facilities, institutional facilities, location, access, management
e) Solid waste disposal – households, communal facilities, medical/health wastes, industrial wastes, sites, management etc.
f) Storm water drainage – types of drains, adequacy, capacity, flooding etc
g) Health and Hygiene practices – hand washing, cleanliness,
h) Bye Laws – availability, compliance, enforcement, etc.
i) Other significant features of interest – animal wastes, community mobilization, public spaces, green areas, markets, lorry parks etc

Focus Group Discussions

Focus group discussions were conducted with men, women, elders and key local leaders in Obom. The list of persons met and consulted during FGDs and KPIs is attached as Annex 3.

Data Entry and Analysis

Household data gathered in the survey was entered and analysed using statistical analysis software – SPSS.

1.3.5 Mobilization of Personnel

Survey assistants were identified and trained in administering the questionnaires. Each enumeration team was assisted by a survey assistant under the supervision of a senior member of the consultant's team.

Table 1.1: Survey Effort in Obom

Town	No. of Enumerators	No. of Days for Enumeration
Obom	3	2

The field studies comprising surveys and profiling were carried out from 18 – 21 February 2010.

2 PROFILE OF GA-SOUTH MUNICIPAL ASSEMBLY AND OBOM

This section covers findings from desk studies as well as field results from surveys, environmental sanitation profiling and consultations.

2.1 GA SOUTH MUNICIPAL ASSEMBLY

Location: The Greater Accra region of Ghana

Boundaries: The municipal assembly is bounded to the north-east by Akwapim South district, to the north-west by West Akim district, to the west by Awutu Efutu Senya district, to the east by Ga West district, to the south- west by Gomoa district whiles the Ablekuma North and South Sub- Metropolitan assemblies share its south-eastern border. The municipal assembly has the Gulf of Guinea as its southern boundary.

Capital: Weija

Natural Resource: Weija dam.

This municipality is one of the newly upgraded municipal assemblies in the Greater Accra region. This step was taken by the government of Ghana as a result of the large size of some of the then 138 MMDAs which constrained the government's ability to fully implement its policies of local governance to the benefit of the entire citizenry.

The municipal assembly, in conjunction with stakeholders, is in the process of collecting relevant data concerning its size, topography and drainage; climate and vegetation; geology and soil; social infrastructure; economy, etc that is required for effective planning and management.

Demographic Characteristics

Although the municipal assembly is in the process of collating the demographic indicators of the district, data gathered from field surveys carried out for the preparation of the District Environmental Sanitation Strategy and Action Plan (DESSAP, 2008) estimates current the population as 301,147.

Table 2.1 provides the estimated population of the five largest towns in the district.

Table 2.1: Population of the Five largest towns in the Ga South Municipality.

TOWN	POPULATION
Gbawe	39,425
Kokrobite	30,526
Anyaa	20,560
Chantan	17,715
Amanfrom	17,284

Source: DESSAP Field Survey Data, 2008

2.2 ENVIRONMENTAL SANITATION PROFILE OF OBOM

2.2.1 Population and Household Data

According to the 2000 population and housing census, Obom has a population of 1, 179 (561 males and 618 females) with 178 houses. The number of households is 271 and the average household size is 4.4. Based on the 2000 population figure and the district growth rate of 2.1%, the current estimated population of Obom is 1452 (761 females and 691 males). Data gathered from the DESSAP however puts the current population at1592.

The total number of households interviewed is 50.

2.2.2 Characteristics of Respondents

On characteristics of respondents, the questionnaire addressed the following:

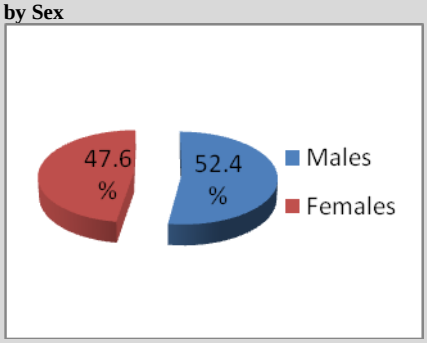
Sex of Respondents

32% of respondents were males and 68% females.

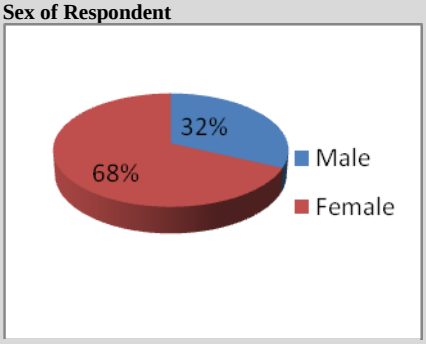
Age of Respondents

96% of respondents are above 18 years of age and 4% below 18 years who interpreted for adult respondents.

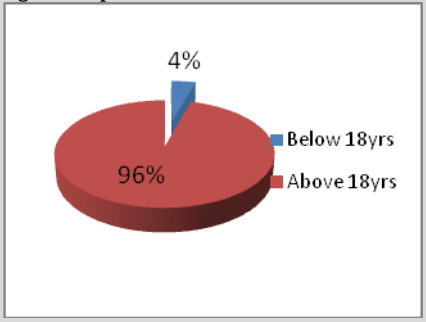
Estimated Current Population Distribution by Sex



Sex of Respondent



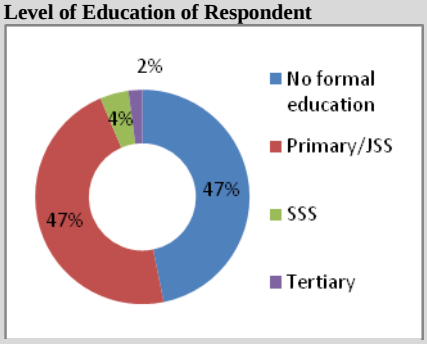
Age of Respondent



Level of Education of Respondents

2% have attained tertiary education, 4% secondary education, 47% primary/JSS/middle school, and 47% have no formal education.

Level of Education of Respondent



2.2.3 Potable Water Coverage

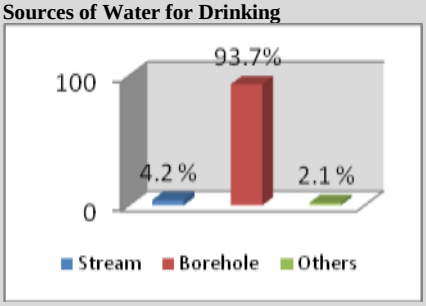
Water Connection

In Obom, 96% of respondents have no water connection to their houses and therefore depend on the few public boreholes (mechanized) in the community. 4% depend on other sources of water supply which include private boreholes, wells and harvested rain water.

Sources of Water for Drinking

Data from the survey shows that sources of water for drinking purposes include stream (4.2 %), borehole (93.7 %) and others (2.1%).

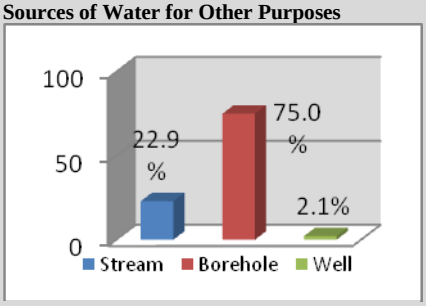
Sources of Water for Drinking



Sources of Water for Other Purposes

Responses from the survey shows that sources of water for other purposes aside drinking include stream (22.9%), Borehole (75.0%) and well (2.1%).

Sources of Water for Other Purposes



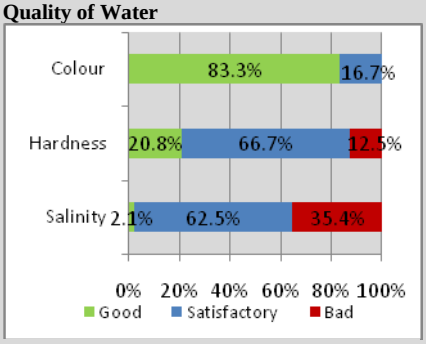
Quality of Water

For salinity, 2.1% of respondents indicated neutral taste of their water, 62.5% slightly salty and 35.4% salty.

With respect to hardness of water, 20.8% of respondents indicated good lathering, 66.7% said the water lathers slightly well with soap and 12.5% said the water does not lather with soap.

For appearance of water, 83.3% of respondents pointed out the fact that the water was generally clear and the remaining 16.7% pointed out that the water was slightly turbid .(coloured)

Quality of Water



2.2.4 Refuse Management

Household Solid Waste Storage

Data from the household survey shows that 58.3% have sanitary dustbins for primary storage of household waste. The receptacles used are not standard and varies from boxes, buckets, cartons etc. 92.9% of respondents use sanitary dustbins of volume up to 50liters whilst the remaining 7.1 % use dustbins of volume between 50 and 100liters.

Availability/Access to Refuse Dump Sites

Data from the survey indicate that 79.2% of households use uncontrolled dump sites for disposing of their refuse.

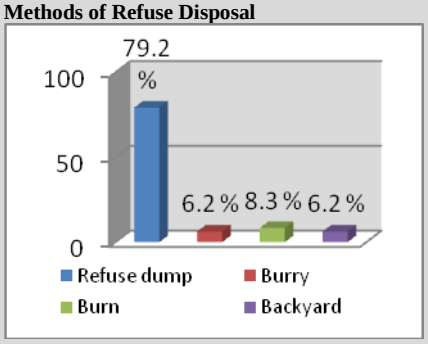
Plate 2.1: Poor sanitation practices with waste discharged into wetland

Plate 2.2: Domestic and market refuse with high plastic content at an uncontrolled dump

Method of Refuse Disposal

Responses from administering questionnaires show that there are no communal containers for refuse disposal, 6.2% throw at backyard, 6.2% bury them, and 8.3% burn their refuse and 79.27% use refuse dump sites (uncontrolled dumping).

Methods of Refuse Disposal



Perception of Respondents

The residents of Obom view refuse management as very poor due to absence of formal refuse collection, indiscriminate dumping and long distances of dump sites to houses. This perception is supported by prevalence of indiscriminate littering.

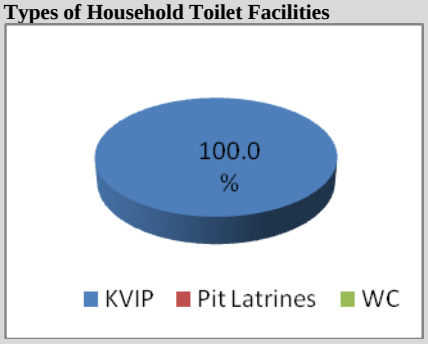
2.2.5 Excreta Management

In Obom, 35.4% of respondents have a household toilet facility. Most of the household facilities are however all full up and have been closed down due to lack of vehicular access for dislodging. The remaining 64.6% use the only public KVIP in the town. Of those who have household toilet facilities, 69.2% indicate that toilet facility is outside the main building and 30.8% indicate that the facility is within the main building.

Types of Household Toilet Facilities.

Data from the household survey shows that all household toilets are VIPs.

Types of Household Toilet Facilities

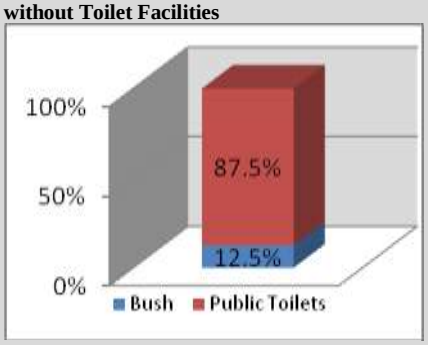


Methods of Excreta Disposal by Households Without Toilet Facilities

Human excreta disposal trends for households without toilets shows that 12.5% defecate in the bush and on refuse dump 87.5% use public toilets.

There is only one public KVIP toilet which is in a dilapidated state.

Methods of Excreta Handling by Households without Toilet Facilities



2.2.6 Storm Water and Sullage Conveyance

Storm Water Conveyance

On the issue of flooding 14.6% of respondents indicated occurrence of flooding whenever there is a heavy down pour. This is supported by the lack of storm drains in the town. The few existing earth drains in the town are heavily silted and choked with refuse.

Disposal of Sullage from Kitchen and Bathroom

Disposal of sullage from kitchens and wastewater from bathrooms in Obom is poor. 14.6% use soakaway pits, 8.3% collect in buckets and containers, 4.2% throw into shallow earth channels (drains) and 72.9% dispose in open spaces.

Disposal of Sullage from Kitchen and Bathrooms

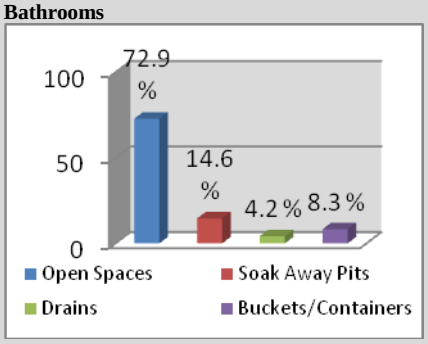


Plate 2.3 Sullage discharged from bathrooms

2.2.7 Health and Personal Hygiene

Handwashing Practices

The responses on handwashing practices in Obom are shown in the table below:

Hand washing with soap practices	Response	Proportions of Responses (%)
Before food preparation	Always	27.3
	Sometimes	54.5
	Never	18.2
Before meals (eating)	Always	25.0
	Sometimes	68.2
	Never	6.8
After using toilet	Always	29.6
	Sometimes	65.9
	Never	4.5
After attending to defaecation by children	Always	16.3
	Sometimes	67.4
	Never	16.3

General Hygiene Standards in Households and Community

Observations were made in the houses and community on the following:

- Use and keep latrine
- Remove animal or children's faeces from the home and safely dispose of them
- Manage and maintain safe, public sanitary solutions (for human and animal waste)
- Consume safe water
- Keep all water containers covered
- Obtain water for drinking/cooking from the least contaminated source available
- Manage and maintain safe, sanitary garbage disposal

The results have been summarised in Table 2.2.

Availability of Bye-Laws

100% of respondents indicated that there are environmental bye-laws in the town. These bye-laws are usually enforced by the town council authorities.

SKETCH OF OBOM LAYOUT

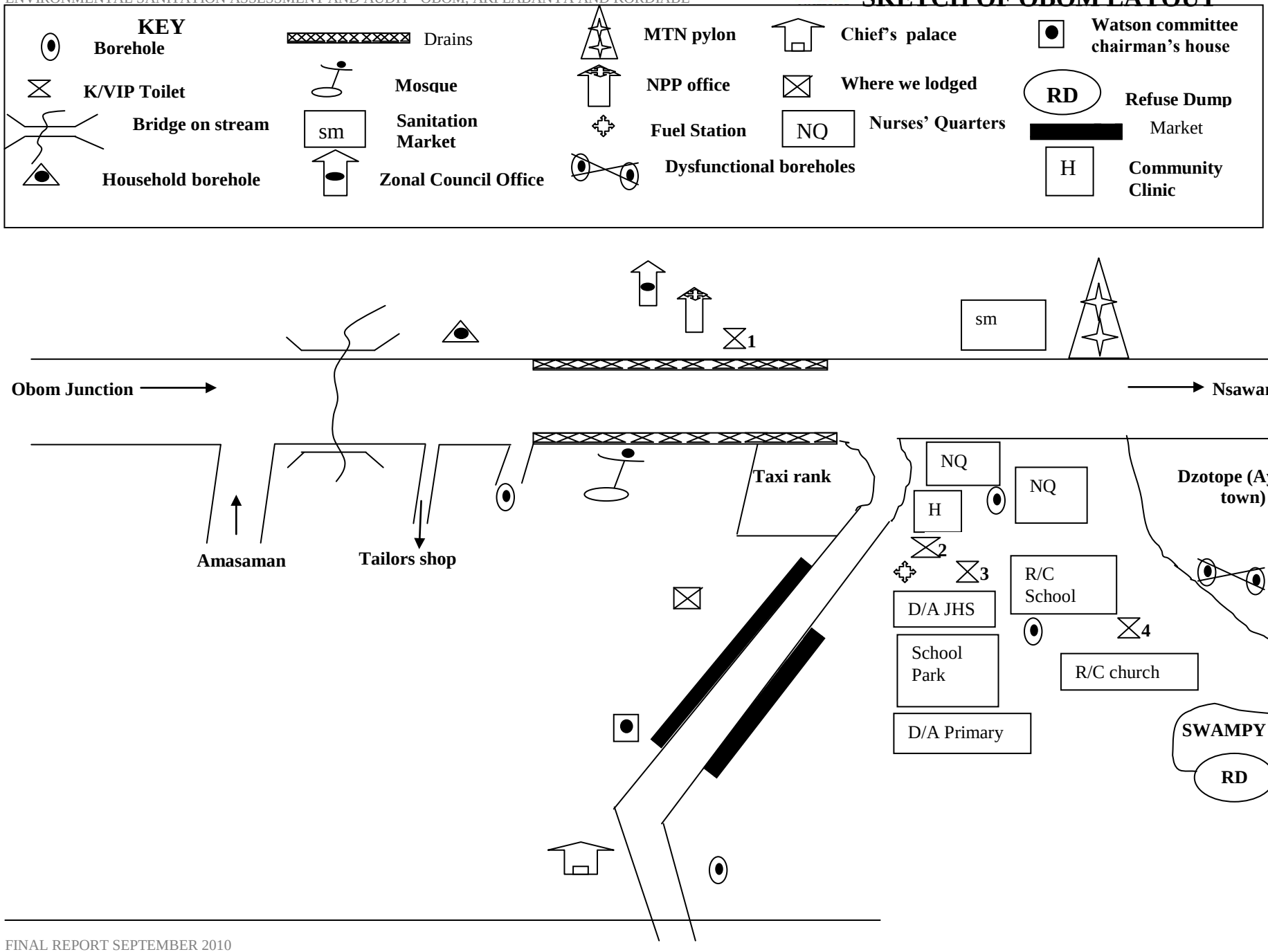


Table 2.2: OBOM COMMUNITY PROFILE

ENVIRONMENT CATEGORY	DESCRIPTION
WATER SHED MANAGEMENT	• Pollution of river Ponpong through bathing and washing of cars in and along the river banks. • Dumping of solid waste into the wetlands. • Run-off water pollution into river Ponpong.
WATER SUPPLY	• Four (4) public boreholes and one (1) private borehole. • Water from river Ponpong
WASTE WATER DISPOSAL	• Waste water from bathhouses and kitchens (sullage) disposed of into open space.
LIQUID WASTE DISPOSAL	• One ten (10) seaterpublic KVIP toilet facility and 3 KVIP toilets for the two schools and clinic • About thirty (30) household KVIP toilet facilities. • Indiscriminate defecation at open spaces and refuse dumps.
SOLID WASTE DISPOSAL	• One large refuse dump • Crude dumping and burning of solid waste
STORM WATER DISPOSAL	• New primary drainage system under construction • Gulley erosion at open spaces
PROMINENT FEATURES	• Health Centre • Sanitary market • Okada (motor cycle transport system) • MTN telecommunication mast. • Gari Processing

3 RECOMMENDATIONS

From the environmental sanitation assessment and audit and the town profile, the following interventions are recommended:

- Improvement in drainage scheme
- On-site sanitation improvement programme
- Solid waste management improvement programme
- Improvement of wetland management
- Management support

4 CONCLUSION

Details of the interventions mentioned are discussed in the Town Environmental Sanitation Development Plans (TESDPs) which gradually introduces a means of providing integrated interventions to address issues confronting small and medium-large towns.

ANNEX B: QUESTIONNAIRE FOR ENVIRONMENTAL SANITATION ASSESSMENT AND AUDIT

REGION:	FIELD OFFICER:	POPULATION
TOWN:		AGE:
DISTRICT:	DATE	SEX:

1 CHARACTERISTICS OF RESPONDENT

a	Sex of Respondent	Male	Female		
b	Age of Respondent	Below 18	Above 18		
c	Level of Education attained	No formal education	Primary/JSS	SSS	Tertiary

2 HOUSE/HOUSEHOLD CHARACTERISTICS (PLEASE TICK)

a	Type of Household	Rural	Low Income	Middle Income	High Income		
b	Number of Households in House	1-2	2-4	4-6	6-8	8-10	>10
c	Household size	2-4	4-6	6-8	8-10	>10	

3 WATER MODULE

a	Is there water connection to your house	Yes	No		
b	Is it reliable?	Yes	No		
c	Where do you fetch drinking water	Stream	Borehole	Standpipe	Well
d	Where do you fetch water for other purposes	Stream	Borehole	Standpipe	Well
e	Who usually fetches the water?	Adult	Children		
f	How far is the source of water	Close	Far	Very far	
g	Are the yields of water sufficient	Yes	No		
h	Is the colour of surface/groundwater good?	Yes	slightly coloured	No	
i	Does the ground water taste salty	Yes	slightly	No	
j	Does the surface/groundwater lather well with soap	Yes	slightly	No	

4 SOLIDWASTE MANAGEMENT MODULE

a	Do you have Sanitary Dustbin for storage of refuse?	Yes	No

if Yes

b	What is the volume of your sanitary bin?	0-50 L	20-100 L	100-150 L	150-200 L	200-250 L	
c	How many times do you empty your sanitary bin?	Once everyday	Twice a week	Thrice a week	Once a week	More than thrice a week	
d	Where do you dispose off your refuse?	Refuse dump	Burry	Burn	Back yard	ommunal Contair	other(specify)

e What are the proportions of waste type generated?

Organic		Metal	
Paper		Textiles	
Plastics		Wood	
Glass		Miscellaneous	

f	What is the distance from your house to the refuse disposal site?		Close	Far	Very Far
g	Is the refuse dump close to a water body?	Yes	No		

h How would you grade the waste management system in this community?

	waste collection	waste dumping	distance from the waste dump
Bad			
Satisfactory			
Good			

5 LIQUID WASTE MANAGEMENT MODULE

a	Do you have toilet facility in your house?		Yes	No	

if Yes

b	What the type of toilet facility	KVIP	W/C	Pit Latrine	Others (Specify)

if No

c	Where do you ease yourself?	Public KVIP	Public W/C	Public Pit Latrine	Bush
d	How far is the toilet facility from where you live?	Close	Far	Very far	
e	Are the public toilets close to water bodies	Yes	No		

f How do you dispose of water from bathrooms and kitchens?

Open Spaces	Soakaway p	Drains	Buckets/Containe	Septic tank	Others (Specify)

6 STORM WATER CONVEYANCE MODULE

a	Do you experience Flooding when it rains?	Yes	No

If Yes

b	Do you have drains that convey the storm water?	Yes	No

If Yes

c	Are the drains cleansed periodically?	Yes	No

If Yes

d	Who is responsible?	Individuals	Area Authorities	Other (Specify)

7 HANDWASHING PRACTICES MODULE

a	Do you wash your hands with water and soap (or other cleaning agent) before preparing food?						
		Always		Sometimes		Never		
b	Do you wash your hands with water and soap (or other cleaning agent) before eating?						
		Always		Sometimes		Never		
c	Do you wash your hands with water and soap (or other cleaning agent) after use of toilet?						
		Always		Sometimes		Never		
d	Do you wash your hands with water and soap (or other cleaning agent) after helping/cleaning children						
	after defecation?	Always		Sometimes		Never	

8 HEALTH INFORMATION MODULE

a	Are you aware of any predominant disease(s) in your community?			Yes	No
b	What is/are the dieases?	Malaria	Cholera	Skin disease	Other (Specify)
c	Do you have Health Facility in your community?			Yes	No
d	If "No" where do you treat such disease(s)?				
	Chemical sellers				
	Traditional healers				
	Faith based healers				
	Other (state)				
e	Which vectors are prevalent in household/community			housefly	mosquito	tsetsefly

9 AVAILABILITY OF BYE LAWS MODULE

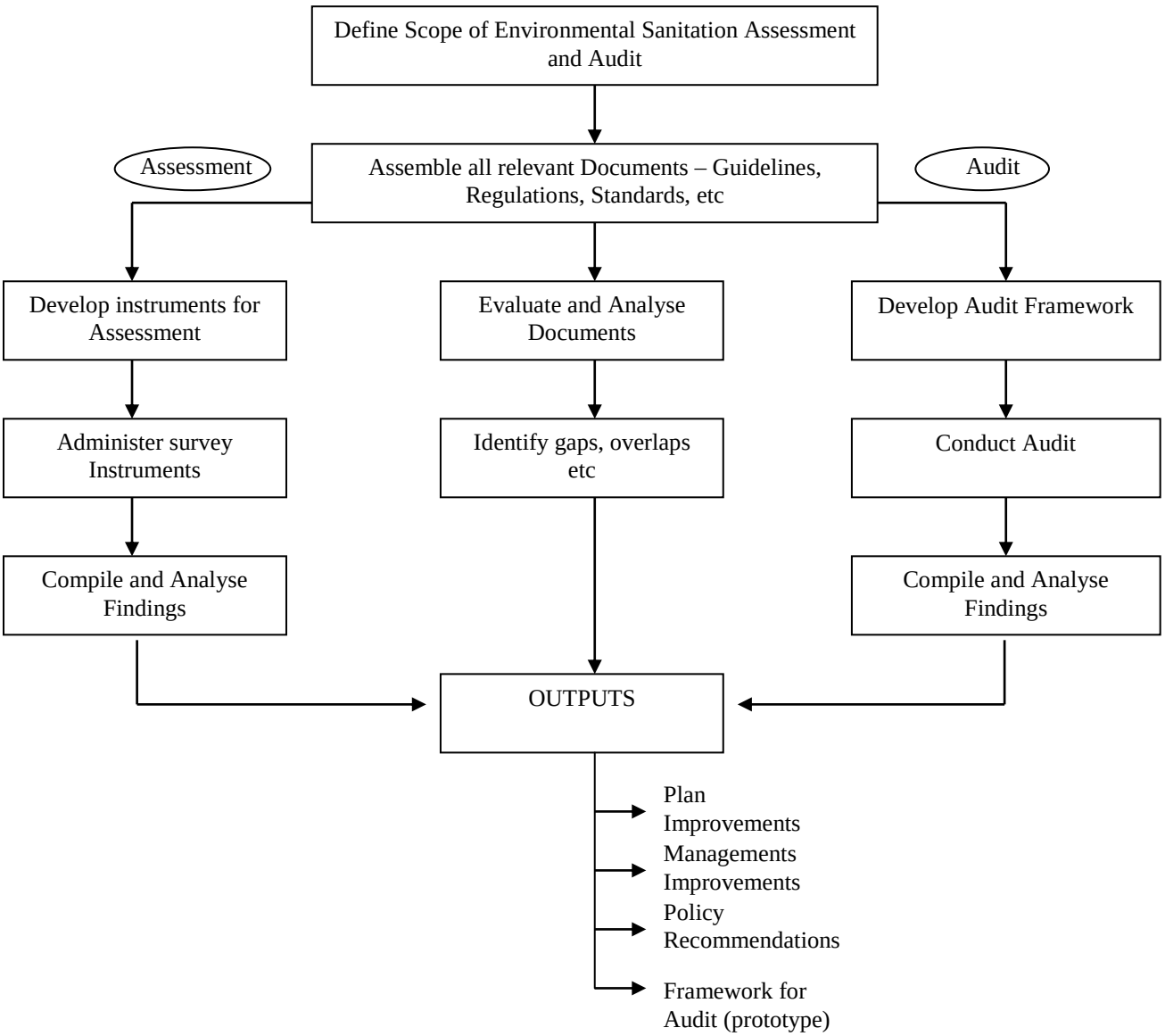
a	Do you have environmental laws for your community?	Yes	No	
b	Who is responsible for law enforcement in communities?	Area/Town Council	Sub Metro	Metropolitan/Municipal/District Assembly

10 GENERAL OBSERVATIONS TO BE MADE BY INTERVIEWERS IN HOUSEHOLDS

a	Availability of water and soap/other cleaning agents for hand washing			Yes	No	
b	Is it conveniently placed in vicinity of private toilet?			Yes	No	
c	Hygienic standard of private latrines					
	Clean	Tidy	Faeces on slab	Flies	Smell	Used cleaning material littered around
d	Storage of Water					
	- Covered	- Clean	Uncovered pots	- Cleaning/filter facility		
e	Hygienic standard of kitchen/cooking place			Clean	Flies	Animals around
f	Accumulation of water within 20 meters radius (by observation)				Yes	No
g	Evidence of open standing foul smelling water			Yes	No	
h	Water accumulated in discarded containers			Yes	No	

ANNEX 2: FRAMEWORK FOR CONDUCTING ENVIRONMENTAL SANITATION ASSESSMENT AND AUDIT

FLOW CHART FOR ENVIRONMENTAL SANITATION ASSESSMENT AND AUDIT



ANNEX 3: LIST OF PERSONS MET FOR CONSULTATIONS, FGDS AND KPIS

No.	Name	Position/Designation
Ga South District Assembly		
1.	Hon. Daniel Danfro	Assemblymember, Obom
2.	Mr. Dartey	EHO, Obom