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World Health Organization



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| <b>Project Title</b>   | <b>Reducing Unintended Persistent Organic Pollutants (UPOPs) and Mercury Releases from the Health Sector in Africa.</b>  |
| <b>UNDAF Outcome(s):</b>   | <p><b>Outcome 5:</b> An additional 2.5% of the population have sustainable use of improved drinking water and sanitation services and practice the three key hygiene behaviours by 2016.</p> <p><b>Thematic Area:</b> Transparent and Accountable Governance</p> <p><b>UNDAF/UAF Outcome 11:</b> Ministries, Department Agencies, (MDAs) Local Governments and CSOs have effectively developed, funded, coordinated and implemented national and sectoral policies, plans and programmes aimed at reducing poverty and inequalities and promote inclusive socio-economic growth in 2016.</p> |
| <b>Expected Output(s):</b><br><i>(extracted from the UNDAF Action Plan)</i>  | <ul style="list-style-type: none"> <li>• Policy advocacy, advice, and programme implementation informed by analytical work, and key national institutions able to conduct economic planning, management and M&amp;E using quality data.</li> <li>• Proposals for policy, institutional and operational reform in the justice sector formulated and actions taken to build consensus among stakeholders.</li> </ul>   |
| <b>Executing Entity:</b>   | <b>United Nations Development Programme- Ghana</b>   |
| <b>Implementing Partner:</b>   | <b>Ministry of Health</b>  |
| <b>Project Summary</b>   |  |
| <p>The overall objective of this full size GEF funded project, implemented by UNDP in partnership with WHO and the NGO Health Care Without Harm, is to implement best environmental practices and introduce non-incineration healthcare waste treatment technologies and mercury-free medical devices in four Sub-Saharan African countries (Ghana, Madagascar, Tanzania and Zambia) to reduce harmful releases from the health sector.</p> <p>Mercury, one of the world's most ubiquitous heavy metal neurotoxicants, has been an integral part of many medical devices, most prominently thermometers and sphygmomanometers. When these devices break or leak with regularity, they add to the global burden of mercury in the environment and expose health care workers to the acute effects of the metal itself. Considering the harmful effect of Mercury, the phase-out of such devices by 2020 is anticipated under the Minamata Convention on Mercury once it comes into force.</p> |  |



To help countries meet their obligations under the Stockholm and Minamata Convention, the project will apply a regional procurement approach, to equip a total of four central treatment facilities, 14 hospitals and 24 health posts (corresponding to HCW from a total of about 35,200 hospital beds) in the four project countries. The approach will contribute towards creating favorable market conditions, market demand and stimulate the growth of non-incineration HCWM systems and mercury-free technology distributors or manufacturers in Africa, to make it easier for Sub-Saharan African countries to have access to manufacturers, distributors and maintenance service providers of low cost non-incineration technologies and mercury-free devices as well as technical assistance from a network of national and regional experts.

Finally, because the project will improve the entire healthcare waste management chain in supported project facilities through improved classification, segregation, storage, transport and disposal, among else, it is expected that improved HCWM practices will reduce the spread of infections both at healthcare facility level as well as in places where healthcare waste is being handled, reducing human suffering and health care cost associated with improperly managed waste.

This project document covers activities implemented in Ghana under the NIM modality.

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| <p><b>Programme Period: 2015 – 2018</b><br/> <b>Atlas Award ID: 00089426</b><br/> <b>Project ID: 00095673</b><br/> <b>PIMS #: 4865</b></p> <p><b>Start Date: August 2015</b><br/> <b>End Date: July 2019</b></p> <p><b>Mgmt Arrangement: National Implementation Modality (NIM)</b></p> <p><b>PAC Meeting Date: 20<sup>th</sup> November, 2014</b></p> | <p>Total resources required \$ 5,825,601<br/> Total allocated resources: \$ 5,825,601</p> <p><b>Total GEF resources for Ghana (US\$) under NIM implementation: \$ 615,601</b></p> <p><b>Ministry of Health (MoH) : \$ 1,610,000</b><br/> <b>Ministry of Local Government and Rural Development (MLGRD) : \$ 1,900,000</b><br/> <b>Zoomlion Ghana LTD : \$ 1,250,000</b><br/> <b>EPA : \$ 450,000</b></p> <p><b>Total Co-financing (from Ghana): \$ 5,210,000</b></p> |
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Agreed by (UNDP):

Dominic Sar CD 8/10/2015

Name

Date/Month/Year

(Position)

Agreed by (Ministry of Health on behalf of Government of the Republic of Ghana):



14/10/2015

Name:

Date/Month/Year

(Position) HON. ALEXANDER SEGBEFIA  
MINISTER OF HEALTH



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## LIST OF ACRONYMS

|          |  |
|----------|--|
| AIDS     | Acquired Immune Deficiency Syndrome                          |
| APR/PIR  | Annual Project Review / Project Implementation Review        |
| AWP      | Annual Work Plan   |
| BAT      | Best Available Technologies                                  |
| BEP      | Best Environmental Practices                                 |
| BMW      | Bio-Medical Waste  |
| BTOR     | Back to Office Report  |
| CBoH     | Central Board of Health                                      |
| CO       | Country Office   |
| CP       | Country Programme  |
| CTF      | Centralized Treatment Facility                               |
| ADB      | African Development Bank                                     |
| GEF      | Global Environment Facility                                  |
| HCWM     | Health Care Waste Management                                 |
| HC       | Health Centre  |
| HCF      | Health Care Facility   |
| HIV/AIDS | Human Immunodeficiency Virus/Auto-Immune Deficiency Syndrome |
| Hg       | Mercury  |
| ICP-IS   | Infection prevention and control and injection safety        |
| IPC      | Infection Prevention Committee                               |
| I-RAT    | Individualized Rapid Assessment Tool                         |
| IV       | Intravenous  |
| JSI      | John Snow Inc  |
| M&E      | Monitoring and Evaluation                                    |
| MHMT     | Municipal Health Management Team                             |
| MMIS     | Making Medical Injections Safer                              |
| MESTI    | Ministry of Environment Science Technology and Innovation    |
| MOH      | Ministry of Health   |
| MLGRD    | Ministry of Local Government and Rural Development           |
| MoF      | Ministry of Finance  |
| MoHSW    | Ministry of Health and Social Welfare                        |
| MoU      | Memorandum of Understanding                                  |
| MSD      | Medical Stores Department                                    |
| MSW      | Municipal Solid Waste  |
| NGO      | Non-Governmental Organization                                |
| NAP      | National Action Plan   |
| NIP      | National Implementation Plan for the Stockholm Convention    |
| PAC      | Project Approval Committee                                   |
| PA       | Project Assistant  |
| PB       | Project Board  |
| PC       | Project Coordinator  |
| PCBs     | Polychlorinated Biphenyls                                    |
| PCDDs    | Polychlorinated Dibenzo Dioxins                              |
| PCDFs    | Polychlorinated Dibenzo Furans                               |

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|        |  |
|--------|--|
| POP    | Persistent Organic Pollutant                       |
| PPG    | Project Preparation Grant                          |
| PPE    | Personal Protection Equipment                      |
| PPP    | Public Private Partnership                         |
| PPR    | Project Progress Report                            |
| PRF    | Project Results Framework                          |
| PTS    | Persistent toxic substance                         |
| PVC    | Polyvinyl Chloride                                 |
| QPR    | Quarterly Progress Reports                         |
| RCU    | Regional Coordination Unit                         |
| SOP    | Standard Operating Procedures                      |
| TOR    | Terms of Reference                                 |
| UNDAF  | United Nations Development Assistance Framework    |
| UNDP   | United Nations Development Programme               |
| UNEP   | United Nations Environment Programme               |
| UNIDO  | United Nations Industrial Development Organization |
| UNICEF | United Nations Children Education Fund             |
| UPOP   | Unintentional Persistent Organic Pollutants        |
| UTH    | University Teaching Hospital                       |
| US CDC | United States Center for Disease Control           |
| UDSM   | University of Dar es Salaam                        |
| VPO    | Vice President's Office                            |
| WHO    | World Health Organization                          |

#### LIST OF DEFINITIONS

|                                    |   |
|------------------------------------|---|
| Alternative treatment technologies | For the purposes of this document, alternative treatment technologies are non-incineration technologies that are used to disinfect infectious health-care waste, while avoiding the formation and release of dioxins. Depending on the waste being treated, alternative treatment technologies may also render health-care waste unrecognizable, reduce its volume, eliminate the physical hazards of sharps, decompose pathological or anatomical waste and/or degrade chemotherapeutic waste. |
| Blood-borne pathogens              | Infectious agents transmitted through exposure to blood or blood products.  |
| Chemotherapeutic waste             | Chemotherapeutic waste is waste, resulting from the treatment of cancer and other diseases, that contains chemical agents known to cause cancer, mutations and/or congenital disorders.   |
| Dioxins                            | For the purpose of this document, dioxins refer generally to polychlorinated dibenzo-p-dioxins, polychlorinated dibenzo furans and other unintentional POPs discussed in Annex C of the Stockholm Convention.   |
| Health-care waste                  | Health-care waste includes all the waste generated by health-care establishments, medical research facilities and bio-medical laboratories.   |
| Infectious waste                   | Infectious waste is waste suspected to contain microorganisms such as bacteria, viruses, parasites or fungi in sufficient concentration or quantity to cause disease in susceptible hosts. (Infectious waste is synonymous with bio-medical and bio-hazardous waste.)   |
| Nosocomial infections              | Nosocomial infections, also called "hospital-acquired infections," are infections acquired during hospital care that are not present or incubating upon admission.  |

#### LIST OF WEBSITES

|                           |   |
|---------------------------|---|
| Project website           | <a href="http://www.gefmedwaste.org">http://www.gefmedwaste.org</a>   |
| World Health Organization | <a href="http://www.who.int/water_sanitation_health/medicalwaste/en/">http://www.who.int/water_sanitation_health/medicalwaste/en/</a> |
| Health Care Without Harm  | <a href="http://www.noharm.org">http://www.noharm.org</a>   |

## I. SITUATION ANALYSIS

### Context and Global Significance

1. The Ghana project components as proposed in this document, will be implemented and carried out as an integral part of a regional project entitled “*Reducing Unintentional Persistent Organic Pollutants (UPOPs) and Mercury Releases from the Health Sector in Africa*”. This project will be implemented in four African countries including the Republic of Ghana (“Ghana”), Republic of Madagascar (“Madagascar”), United Republic of Tanzania (“Tanzania”) and the Republic of Zambia (“Zambia”).

2. The project is being developed because the generation of healthcare waste (HCW) is rapidly increasing in Ghana, as a result of expanding healthcare systems, increased utilization of single-use items, and poor segregation practices. As an unintended consequence, the resulting larger healthcare waste quantities and their subsequent treatment (often in low technology incinerators), will result in increased releases of POPs and Mercury.

3. To reduce the spread of HIV/AIDS and other infectious diseases from healthcare waste, and waste resulting from immunization campaigns, African countries including Ghana have started to rely heavily on incineration. In the last few years though, there has been growing controversy over the incineration of health-care waste. Under certain circumstances, in particular when healthcare wastes (which often contain polyvinyl chloride (PVC) plastics) are incinerated at low temperatures (< 800 degrees Celcius), dioxins and furans and other toxic air pollutants (e.g. co-planar PCBs) are produced as air emissions or end up as solid residues in the bottom or fly ash (WHO, 2011)<sup>1</sup>.

4. Exposure to dioxins, furans and other toxic air pollutants resulting from the incineration of HCW may lead to adverse health effects. Long-term, low-level exposure of humans to dioxins and furans may lead to the impairment of the immune system, the impairment of the development of the nervous system, the endocrine system and the reproductive functions. Short-term, high-level exposure may result in skin lesions and altered liver function. Exposure of animals to dioxins has resulted in several types of cancer (WHO, 2011).

5. Due to the fact that dioxins, furans and co-planar Polychlorinated Biphenyls are persistent substances that do not readily break down in the environment, (bio-accumulate in the food chain, and are able to travel long distances far away from the place where they were produced), they are considered as a global threat to human and environmental health worldwide. This reason these substances are controlled under the Stockholm Convention on POPs.

6. Sub-Saharan countries face particular challenges because waste treatment technologies that meet the Stockholm Convention’s guidelines on Best Available Technologies (BAT) and Best Environmental Practices (BEP) and fit local circumstances are simply not available at market prices that facilities or their Governments can afford. As a consequence, countries opt for low-

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<sup>1</sup> WHO, Fact sheet N°281 <http://www.who.int/mediacentre/factsheets/fs281/en/>

cost medical waste incinerators, such as the “*De Montfort incinerators*”. Unfortunately, such incinerators, even if they are properly operated, emit significant levels of dioxins and furans, 40 grams of Toxic Equivalent (g-TEQ) in air emissions and in ash residues per kilotonne of waste burned<sup>2</sup>). Unfortunately though, often even these low cost incinerators are badly maintained, and inadequately operated resulting in even lower temperatures, further aggravating the environmental pollution caused by such technologies.

7. Healthcare facilities (HCFs) are also a significant source of atmospheric releases of mercury. Mercury spills and the breakage/disposal of mercury-containing devices, such as thermometers and sphygmomanometers, are the principal ways by which mercury from health facilities enters the environment. The use of mercury-containing devices in healthcare is widespread in the African region, mostly due to limited availability of low cost mercury-free devices, unfamiliarity with their use as well as occasional donations from abroad.

8. Mercury is also used in the healthcare sector in the form of dental amalgam. The use of dental amalgam is a significant source of mercury discharge into the environment, including scrap amalgam and amalgam waste. In most Sub-Saharan countries such wastes are predominantly discharged with wastewater into the sewerage, as there are often no solutions available to deal with such waste streams<sup>3</sup>. Like POPs, Mercury remains in the environment for decades, it is transported long distances and is deposited in the air, water, sediments, soil and biota in various forms. Atmospheric Mercury can be transported long distances, is incorporated by microorganisms and is concentrated up the food chain. It is because of these characteristics, that Mercury is regarded as a global pollutant.

9. Data from the baseline analysis which was conducted during the project’s preparation phase (see section “UPOPs and Mercury Release Baseline”) suggests that in the four project countries the healthcare sector releases up to 165 g-TEQ/yr of UPOPs (based on 2007/2006 NIPs) and up to 287 kg Hg/yr . The hospitals that have been pre-selected in the four project countries for project participation currently release up to 31.8 g-TEQ/yr and 25.3 kg/Hg/yr.

10. Data gathered from Ghana during the baseline assessment (see table 4) suggests that at national level the healthcare sector in Ghana releases up to 4.6 g-TEQ/yr of UPOPs (based on 2007/2006 NIPs) and up to 169 kg Hg/yr. The hospitals that have been pre-selected for project participation are estimated to release up to 19.8 g-TEQ/yr of UPOPs and 8.2 kg/yr of Mercury.

11. Mercury is neurotoxin. Mercury exists in various forms, with each of its forms having a different severe toxic effects on human- and environmental- health. Exposure to elemental Mercury, Mercury in food, and Mercury vapors may pose significant health problems including kidney, heart and respiratory problems, tremors, skin rashes, vision or hearing problems, headaches, weakness, memory problems and emotional changes.

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<sup>2</sup> (UNDP, 2009) Annex B & C “Guidance on estimating Baseline Dioxin Releases for the UNDP Global Healthcare Waste Project”  
<http://www.gefmedwaste.org/downloads/Dioxin%20Baseline%20Guidance%20July%202009%20UNDP%20GEF%20Project.pdf>

<sup>3</sup> Dental mercury should also be considered a source of air borne emissions from cremation of dental amalgam.

12. Because of the global threats to human health and the environment from Mercury, the Minamata Convention on Mercury, which was adopted in October 2013, aims to reduce releases of Mercury. The Convention aims to reduce mercury emissions from all sources, including gold mining, dental practices, chlor-alkali plants, coal combustion, medical uses as well as waste management, storage, fate and transport in the atmosphere and other related issues.

#### *Aims of the project*

13. The proposed regional project therefore aims to reduce the reliance of African countries on heavily polluting low-cost low technology incineration and create a tipping point for the use of non-incineration technologies which will generate significantly less air pollutants than incinerators and other high-heat thermal processes. Secondly, the use of non-incineration technologies can also provide for the opportunity to recycle disinfected waste fractions, in particular plastics, and allow Health care facilities to reduce their costs for waste treatment, by selling shredded plastics to recyclers.

#### *Objectives*

14. The project will promote best practices and techniques for health-care waste management with the aim of minimizing or eliminating releases of Persistent Organic Pollutants (POPs) to help countries meet their obligations under the Stockholm Convention on POPs. The project will also support these countries in phasing-down the use of mercury containing medical devices and products, while improving practices for Mercury containing wastes with the objective to reduce releases of mercury in support of countries' future obligations under the Minamata Convention. Finally, because the project will improve the healthcare waste management chain (e.g. classification, segregation, storage, transport and disposal), it is assumed that it will reduce the spread of infections both at healthcare facility level as well as places where healthcare waste is being handled.

15. The proposed regional project therefore aims to support project countries in phasing-down/out the use of Mercury containing medical devices, improving practices for Mercury containing wastes (including dental amalgam), and adopting measures in order to reduce releases of Mercury and meet future obligations under the Minamata Convention<sup>4</sup>.

#### *Significance of the Project.*

16. Although not related to chemicals of global concern, the proposed project has a number of health benefits which are not in support of the international chemicals related Multilateral Environment Agreements (MEAs), however these benefits are significant in terms of secondary social and economic impact and benefits of the project.

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<sup>4</sup> The Minamata Convention stipulates that i) Each party shall not allow, by taking the appropriate measures, the manufacture, import or export of mercury added thermometers and sphygmomanometers by 2020 (Annex A, Part 1)<sup>4</sup> and ii) take measures to phase-down the use of dental amalgam by introducing 2 of 8 stipulated measures.

17. According to WHO (2000), of the approximate 35 million health workers worldwide, about 3 million (8,5%) receive percutaneous exposures to blood borne pathogens each year (e.g. needle stick injuries with contaminated sharps). This can happen as a result of the mishandling of sharps and their wastes as well as bad practices like recapping of used needles.

18. Following 2000 estimates by WHO, the inadequate disposal, handling and reuse/recycling of contaminated syringes and other waste items results yearly in 21 million Hepatitis B infections (32% of all new infections), 2 million Hepatitis C infections (40% of all new infections) and 260,000 HIV infections globally (5% of all new infections).

19. Nosocomial infections (“hospital-acquired infections”) caused by infectious waste/blood borne waste or contaminated sites, can result in the transmission of pathogens and re-infection of surgical sites.

20. The burden of disease, as well as the cost implications for Governments’ national budget allocations to treat health impacts caused by the inadequate handling, disposal and reuse of infectious healthcare waste is significant, as such practices not only impact the health of medical staff, but also that of hospital patients, their visitors as well as hospital and non-hospital staff and workers involved in the handling and treatment of infectious healthcare waste.

21. As one of the means to reduce harmful releases from the health sector, the project will improve the overall waste management chain at project facilities, which encompasses:

- Waste classification
- Waste segregation
- Waste minimization; handling and collection;
- On-site transport and storage
- Finally treatment, disposal and recycling.

By improving all these aspects of waste management, not only will environmental pollution and health impacts caused by UPOPs and Hg be reduced but also the spread of infections.

22. Improved waste management practices also have important benefits at national level which can include improved human health through a reduction in the spread of water-borne diseases and malaria, improved environmental health due to reduced water and soil pollution of local resources used by nearby communities or wildlife, engagement of the private sector in waste management resulting in additional job and livelihood creation in waste management and recycling, a reduction in the overall costs for waste management.

23. Finally, the project will contribute to the achievement of the Millennium Development Goals (MDGs) in particular MDG 4: Reduce Child Mortality and MDG 5: Improve Maternal Health<sup>5</sup> as improved HCWM reduces mortality resulting from unsafe and unhygienic delivery. But also MDG 6: Combat HIV/AIDS, malaria and other diseases as improved HCWM can reduce the infection rate of Sepsis, HIV/AIDS, TB and other diseases; and finally of course MDG 7 Ensure environmental sustainability, by reducing releases of UPOPs, Mercury, GHGs, improving procurement and waste management practices leading to reduced environmental pollution.

## **Baseline Analysis – The Case of Ghana**

### *Health Care Waste Management (HCWM) Situation*

24. Ghana is endowed with a large number of health care facilities, whose activities, size and generation of waste vary. In 2009 there were 3217 health care facilities with a total of 22,164 beds in Ghana (MoH/GHS, 2010).<sup>6</sup>

25. Health care facilities in Ghana are categorized as follows (MoH/GHS, 2010):

- Hospitals; government-owned, private, quasi/governmental, Islamic or owned by Christian Health Organisation of Ghana (CHAG)
- Teaching hospitals; government-owned
- Regional hospitals; government-owned
- Psychiatric hospitals; government-owned
- Poly-clinics; government-owned
- Health centres and clinics; government-owned, private, quasi/governmental, Islamic or owned by Christian Health Organisation of Ghana (CHAG)
- Community-based Health Planning and Services (CHPS); government-owned
- Maternity homes; private

26. In 1992, the waste management department of Accra Metropolitan Assembly estimated the health care waste generation rate as 1.2kg/bed/day for six major hospitals (EPA-Gh, 2002; National Policy on HCWM, 2006). A study by Wilson et al. (2006) estimated the total hospital generation rate for Komfo Anokye and Korle-Bu Teaching hospitals (KATH and KBTH) as 1.55kg/bed/day and 2.90kg/bed/day respectively. A recent study by Bamfo-Tanor & Owusu-Agyei, (2013) indicated that Korle-Bu generates about 24000kg of waste per day using average daily generation rate of 1.5kg/cap/day. They concluded that healthcare waste in Ghana have been managed without the necessary infrastructure, knowledge, finance and legal framework.

27. Using the average generation rate for the two hospitals to represent the national average, bed utilisation rate of 64% and total number of beds as 22,164 as estimated by the GHS annual report for 2010, it can be estimated that Ghana generates approximately 31.2 tons of healthcare waste per day. This means annually, Ghana generates about 136,656 tons of healthcare waste. Based on

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<sup>5</sup> Sepsis infection plays a large role in maternal health infections – about 30% seems related to hospital hygiene – including HCWM.

<sup>6</sup> (MoH/GHS, 2010) “*The Health Sector in Ghana – Facts and Figures*” available at [http://www.moh-ghana.org/UploadFiles/Publications/GHS%20Facts%20and%20Figures%202010\\_22APR2012.pdf](http://www.moh-ghana.org/UploadFiles/Publications/GHS%20Facts%20and%20Figures%202010_22APR2012.pdf).



an assumption that 25% of the waste is hazardous or infectious in nature, this amounts to the generation of 34,260 tons of hazardous waste on a yearly basis.

28. As part of the preparatory phase of this project (September 2013 – December 2013), an assessment was carried out to establish a project baseline for the situation pertaining to HCWM in the country. The assessment included a desk review of available HCWM related documents and earlier findings related to HCWM in Ghana. The assessment also reviewed in detail the day-to-day HCWM practices of 13 health care facilities across the country (most of them in or close to Accra to facilitate accessibility for the assessment). These hospitals were selected in consultation with the Ministry of Health and Ghana Health Services (GHS) based on a number of criteria, which are presented in Annex IV.

29. The Individualized Rapid Assessment Tools (I-RAT), developed under the GEF funded UNDP/WHO/HCWH Global Medical Waste project<sup>7</sup> was applied to assess the 13 hospital. The I-RAT is a rapid assessment tool to obtain an initial indication of the level of healthcare waste management at an individual healthcare facility. The tool results in an overall score out of 100 that can be used to compare and rank healthcare facilities for the purpose of prioritizing interventions, and can also be used as a quick tool to identify possible areas for improvement within a single facility. The results obtained from the 13 assessments are summarized in table 1 below.

*Table 1: Details of Assessed Health Care Facilities*

| Name of HCF                     | Facility Type        | Number of Beds | Occupancy rate (%) | Average OPD Attendance | I-RAT Results |
|---------------------------------|----------------------|----------------|--------------------|------------------------|---------------|
| Buipe Health Centre             | Health Centre        | 8              | 25                 | 100                    | 55            |
| KATH                            | Teaching Hospital    | 1200           | 91.7               | 26,909                 | 79            |
| Obuasi Municipal Hospital       | Municipal Hospital   | 82             | 70                 | 100                    | 55            |
| Regional Hospital, Wa           | Regional Hospital    | 240            | 70.9               | 250                    | 61            |
| Central Regional Hospital       | Regional Hospital    | 240            | 68                 | 347                    | 56            |
| Holy Family Hospital – Techiman | Municipal Hospital   | 211            | 54.5               | 729                    | 80            |
| Sunyani Regional Hospital       | Regional Hospital    | 360            | 51                 | 355                    | 69            |
| Tema General Hospital           | General Hospital     | 294            | 84                 | 603                    | 82            |
| Pantang Hospital                | Psychiatric Hospital | 500            | 100                | 100                    | 36            |
| Trauma & Specialist Hospital    | Trauma Hospital      | 135            | N/A                | 94                     | 51            |
| 37 Military Hospital            | Military Hospital    | 518            | 66.9               | 641                    | 66            |
| Koforidua Regional Hospital     | Regional Hospital    | 350            | 65                 | 700                    | 69            |
| Amasaman Health                 | Health Centre        | 85             | 73                 | 161                    | 84            |

<sup>7</sup> (UN/GEF Global Health Care Waste Project, 2009) “Individualized Rapid Assessment Tool (I-RAT)” Available at <http://www.gefmedwaste.org/downloads/I-RAT%20May%202009%20UNDP%20GEF%20Project.xls>

| Centre         |                     |    |    |    |    |
|----------------|---------------------|----|----|----|----|
| Legon Hospital | University Hospital | NA | NA | NA | 60 |

30. The assessment resulted in the following observations and conclusions:

- Most of the inspected HCFs have an employee responsible for health care waste management, trained by the School of Hygiene. The training at the SoH focuses on waste management in general and does not include training components on HCWM. Training on HCWM is therefore obtained at the workplace, however many of the HCFs do not have a specific policy, plan or regular training of employees on HCWM.
- Of all the facilities assessed only one facility had educational posters about HCWM.
- Most of the assessed HCFs do not have a specific budget for HCWM, but have a general budget for housekeeping or environmental cleaning services, which is used both for the treatment of healthcare waste and waste haulage as well as from regular cleaning services.
- Most of the HCFs have adopted their own classification system for waste with color-coded bins, no standardized approach for waste segregation is applied. In practice compliance to the system is a major challenge and the segregation of the waste is not done effectively or consistently.
- For waste handlers there is limited access to uniforms and personal protection gear.
- Most of the HCFs do not keep track of the amount of waste produced by the facility.
- It appears as if no regular external monitoring takes place.

*UPOPs releases from the incineration/open burning of HCW*

31. In the development of the Ghana National Implementation Plan (NIP) of the Stockholm Convention on POPs<sup>8</sup> (NIP, 2009) an inventory was conducted to identify PCDDs/PCDFs releases. Releases of dioxins and furans into the environment from health care facilities were assessed as part of the NIP's preparation. The main sources of dioxins and furans were identified as uncontrolled combustion processes, medical wastes incineration, power generation/heating plant of Volta River Authority (VRA) and transport in the urban areas where vehicular traffic is more challenging. Regarding emissions of dioxins and furans from unintentional industrial and domestic activities, it was estimated that a total of 386 g I-TEQ of PCDD/PCDF is emitted in Ghana (EPA-Ghana, 2007). The incineration of medical waste was said to contribute 4.68 g I-TEQ to the total national UPOPs emissions (EPA-Ghana, 2007).

32. The most common way to treat of HCW across the country has been incineration (Table 2). Below an overview is provided on the incinerators in place and those that are planned:

<sup>8</sup> Tanzania National Implementation Plan (NIP) for the Stockholm Convention<sup>8</sup> (NIP, 2005) Available at: <http://chm.pops.int/Implementation/NIPs/NIPSubmissions/tabid/253/Default.aspx>

Table 2: overview of existing and planned incinerators

| Type of technology   | Quantity | Remarks   |
|--|----------|---|
| De-Montfort incinerator  | 157      | May only be used for sharps                                 |
| Modified De-Montfort   | 28       | Capacities not available                                    |
| Pyrolytic incineration or controlled air incineration or double-chamber incineration | 8        | Not all may be working                                      |
| Mobile incinerators for health-care waste  | 30       | Some are stationary now due to operational challenges       |
| Sterilisation and shredding (non-burnt technology)                                   | 2        | One in operation/ the other yet to be commissioned          |
| Bio-digesters for liquid waste   | 5        | Some may not be working                                     |
| Approved proposed construction of new incinerators                                   | 62       | Funded by GAVI through EPI (administered by WHO and UNICEF) |

33. In the assessment, which was undertaken in preparation for this project, it was observed that almost all the visited health care facilities are using De-Montfort incinerators or its modified version, while some HCFs use temperature controlled incinerators. The De Montfort incinerators are mostly used for the incineration of sharps. Most of the used incinerators lack proper air cleaning control and temperature control and are therefore contributing to UPOPs and Mercury being released into the environment.

34. Since HCFs do not really dispose of a specific budget for HCWM, the breakdown of an incinerator can lead to open burning practices since the process of repairing it will be slow without funds to do it. In other cases, in such situations, infectious waste is simply mixed with regular household waste and collected and disposed at the landfill /dumpsite by waste collection companies.

35. In order to estimate the amount of UPOPs released from the incineration of HCW, the quantities of waste produced and the dioxin release for each HCF were estimated (based on the GEF/UNDP Guidance on Estimating Baseline Dioxin Releases (2009))<sup>9</sup>. The estimates are shown in the table 3 below.

<sup>9</sup> (UNDP, 2009) Annex B & C "Guidance on estimating Baseline Dioxin Releases for the UNDP Global Healthcare Waste Project", available at: <http://www.gefmedwaste.org/downloads/Dioxin%20Baseline%20Guidance%20July%202009%20UNDP%20GEF%20Project.pdf>

Table 3: Estimate of dioxins emitted from the sample HCFs.

| HCFs          | Emission Factors |         | Quantity of Incinerated Waste (ton/yr) | Dioxins Emitted (ug TEQ/yr) |                 | Total Release (ug TEQ/yr) |
|---------------|------------------|---------|--|-----------------------------|-----------------|---------------------------|
|               | Air              | Residue |  | Air                         | Residue         |                           |
| Holy Family   | 3500             | 64      | 43.8                                   | 153300                      | 2803.2          | 156103.2                  |
| Wa Reg. Hosp. | 40000            | 200     | 9.1                                    | 365000                      | 1825.0          | 366825.0                  |
| Obuasi        | 6600             | 600     | 7.3                                    | 48180                       | 4380.0          | 52560.0                   |
| Cape Coast    | 6600             | 600     | 31.0                                   | 204831                      | 18621.0         | 223452.0                  |
| Sunyani       | 100              | 64      | 36.5                                   | 3650                        | 2336.0          | 5986.0                    |
| Buipe         | 40000            | 200     | 0.5                                    | 21900                       | 109.5           | 22009.5                   |
| Pantang       | 6600             | 600     | 18.3                                   | 120450                      | 10950.0         | 131400.0                  |
| Koforidua     | 40000            | 200     | 18.3                                   | 730000                      | 3650.0          | 733650.0                  |
| Tema General  | 40000            | 200     | 3.7                                    | 146000                      | 730.0           | 146730.0                  |
| Amasaman      | 40000            | 200     | 1.8                                    | 73000                       | 365.0           | 73365.0                   |
| 37 Military   | 5900             | 200     | 226.3                                  | 1335170                     | 45260.0         | 1380430.0                 |
| KATH          | 40000            | 200     | 439.8                                  | 17593000                    | 87965.0         | 17680965.0                |
| Legon Hosp.   | 4,900            | 200     | 7.3                                    | 35770                       | 1460            | 37230                     |
| <b>Total</b>  |                  |         | <b>843.7</b>                           | <b>20830185.0</b>           | <b>180448.7</b> | <b>21010633.7</b>         |

36. As the table shows, the emissions from these HCFs reach an estimated 21 g I-TEQ annually. It should be observed that these estimates are much higher than the NIP estimated. Ghana developed a National Implementation Plan (NIP) for POPs after signing the Stockholm Convention in 2003. The NIP takes into consideration emissions of POPs from HCFs. An assessment of UPOPs that was made as part of the NIP, estimated that the incineration of medical waste is responsible for 4.6 gI-TEQ (PCDD/PCDF) of the total emission from the country, which is 386 gI-TEQ.

37. Based on the assessment undertaken as part of this assessment, it can be concluded that it is likely that the UPOPs estimation from medical waste incinerators undertaken in the 2008 NIP preparation have been underestimated.

#### *Existing non-incineration technology in Ghana*

38. Some of the health facilities especially the regional hospitals have autoclaves that are used for disinfecting and sterilising various equipment and materials. They are either used at the laundry units, dental unit or Central Sterilisation Centres within the facilities. In case of a breakdown, the maintenance division of the health facilities attends to them and in some cases the supplier comes to service the autoclave. This implies that the facilities are already aware of the disinfection power of autoclave so introduction of similar technology should not present major challenges to them.

39. Furthermore, the Ministry of Health recently started the construction of 3 new hospitals (Winneba, Tarkwa and Tamale). In the development plans of these hospitals, budgets were

included for the on-site treatment of infectious healthcare waste, to be applied towards the procurement of Hydroclaves as well as their installation and maintenance.

40. The 3 hydroclaves have already been procured (one has already been installed in Winneba and is in operation while the other 2 have been commissioned). The distributor is an Israeli company that collaborates with a local maintenance company, which ensures maintenance throughout the warranty period (5 yrs.). Unfortunately the hospitals have not been trained in HCWM practices, classification, segregation, transport etc. as the funding only covered the technology components of the treatment not the capacity building components. This has resulted in Winneba using the hydroclave only once a week to treat sharps waste. After shredding, disinfected waste is sent to the incinerator. Clearly the hospital is not making full use of the installed technology, nor does it need to incinerate the disinfected waste.

41. Zoomlion, the municipal waste collection company (see section on private sector involvement) is also planning to purchase a US\$ 350,000 hydroclave, but they are still deciding where it would be installed. Discussions on this have been ongoing since 2010 and they are waiting for some (financial) commitment from the MoH in order to cover the costs for collection and treatment of HCW from public HCFs.

#### Recommendations for project inclusion

The Government of Ghana, has indicated that the following activities and measures should be considered for inclusion in the project to ensure the smooth running and maintenance of non-incineration technologies:

- Support the 3 hospitals, which have Hydroclaves installed so that the GEF project can support technical assistance to the hospital. This will ensure proper use and maintenance of these technologies, and ensure that their operation will be optimised (used more frequently and for more waste than just sharps), while improving overall HCWM practices in these hospitals. Considering that the technologies will be in place before the project starts it will be an excellent demonstration opportunity for non-incineration technologies.
- Support a number of HCFs in installing non-incineration technologies, preferably HCFs that also treat the waste of surrounding HCFs or would have the possibility to do so, in a region where it is not yet financially viable to get involved for the private sector to take on this role.
- Ensure that technologies are purchased with an extended warranty period and extended maintenance period and the technologies are procured from distributors and companies that have technical teams available in the country/region.
- Train HCF technicians and HCW operators in the maintenance and repair of non-incineration technologies.
- Possibly introduce needle cutters to minimize breakdown of shredders.
- Engage a training institution to set-up a certification course for autoclave maintenance and repair and train engineers. A list of certificate holders can be posted on a website for easy access to the MoH/GHS and HCFs.

- Engage a training institution to design a vocational education course so that on a continuous basis people can be trained on maintenance and repair of pressure vessels/equipment.

*Involvement of the Private Sector in HCW & Recycling*

42. In Ghana, Public Private Partnerships (PPPs) in municipal waste collection, transport and management of landfill/disposal site have been in operation for some time.

43. Specifically, Zoomlion Ghana limited is involved in the haulage and disposal of municipal waste. However, as it services a significant number of HCFs, which do not dispose of working treatment technologies, it often happens that Zoomlion handles waste containers in which infectious waste is mixed with municipal waste.

44. As was mentioned in the previous section, Zoomlion might in the future procure, install and operate a hydroclave, and based on a fee treat HCW for HCFs. Zoomlion also runs the “Africa Institute of Sanitation and Waste Management (AISW AM)” which could be an excellent partner for including a certificate course on HCWM.

Recommendations for project inclusion:

The Government of Ghana, has indicated that the following activities and measures should be considered for inclusion in the project to reduce releases of Mercury originating from the health care sector:

- If the private sector embarks on the installation of a hydroclave, the project can provide support to ensure proper handling and treatment of HCW (e.g. waste tracking, tariff setting, etc.), or as an alternative, the technology can be hosted by a hospital but operated by the private sector, with technical assistance provided by the project.
- It will be important to assist hospitals that receive non-incineration technologies as part of the project, to gain access to plastic buyers markets, in particular for PVC containing plastics, as there are fewer companies that purchase PVC containing raw materials as compared to PP and PE plastics.
- Explore with Private Sector Partners engaged through PPPs in MSWM whether they can assume a control and monitoring function - e.g. refuse to pick up infectious HCW, when it is mixed with municipal waste.
- Establish a HCWM certificate course at AISWAM and incorporate HCWM modules in other training courses.

**Table 4: UPOPs and Mercury Baselines for Preselected HCFs - Ghana**

| <b>UPOPs – National Level</b>   |      |
|---|------|
| Total PCDDs/PCDFs releases [g TEQ/year] NIP (2007)  | 386  |
| PCDDs/PCDFs releases from the Health Sector [g TEQ/year] NIP (2007)                                       | 4.68 |
| PCDDs/PCDFs releases from the Health Sector and power generation/heating combined [g TEQ/year] NIP (2007) | 14.8 |
| <b>Mercury – National Level</b>   |      |
| Mercury containing Medical Devices** [kg/yr]:   | 62   |
| Mercury in Dental Amalgam** [kg/yr]:  | 107  |

| Ghana - HCF Level  |   |  |  |   |   |   |   |
|--|---|--|--|---|---|---|---|
|  | Facility 1:<br>37<br>Military<br>Hospital | Facility 2:<br>Koforidua<br>Regional<br>Hospital | Facility 3:<br>Komfo<br>Anokye<br>Teaching<br>Hospital<br>(KATH) | Facility 4:<br>Cape Coast<br>Teaching<br>Hospital | Facility 5:<br>Trauma &<br>Specialist<br>Hospital<br>Winneba                        | Facility 6:<br>Tarkwa<br>Municipal<br>Hospital  | Facility 7:<br>Tamale<br>Teaching<br>Hospital |
| No. of beds  | 518                                       | 350  | 1200   | 240   | 135   | 156   | 339   |
| Quantity of<br>Incinerated<br>Waste<br>(tonne/yr)  | 226.3                                     | 18.3   | 439.8  | 31.0  | 13.6  | 15.7  | 34.0  |
| Type of<br>Incinerator<br>[emission<br>release factor<br>see Annex<br>XV]  | 2 Dual<br>Chamber<br>incinerato<br>rs [7] | Single<br>Chamber /<br>De<br>Montfort?<br>[2]    | Single<br>Chamber<br>[2]   | Dual<br>Chamber<br>[7]                            | Hydroclave<br>for sharps.<br>Remainder of<br>the waste<br>burned in the<br>open [1] | Hydroclave<br>for sharps.<br>Remainder<br>of the<br>waste<br>burned in<br>the open<br>[1] | Unknown -<br>assumed<br>open<br>burning [1]   |
| Dioxins<br>emitted (Air)<br>[g-TEQ/year]   | 0.792                                     | 0.732  | 17.592   | 0.109   | 0.089   | 0.103   | 0.225   |
| Dioxins<br>emitted (Ash)<br>[g-TEQ/year]   | 0.014                                     | 0.004  | 0.088  | 0.002   | 0.008   | 0.009   | 0.020   |
| Mercury<br>releases from<br>devices*<br>[kg/yr]  | 1.45                                      | 0.98   | 3.36   | 0.67  | 0.38  | 0.44  | 0.95  |
| Project Baseline (although the model facilities might not be final):<br>UPOPs: 19.8 g-TEQ/yr<br>Mercury: 8.2 kg/yr |   |  |  |   |   |   |   |

### Mercury

45. In Ghana, mercury is used mostly in the mining sector for gold processing. It is also used by laboratories in research institutions and universities, health care facilities and the textile industries. Importation of mercury into Ghana is regulated by law, which is referred to as the MERCURY ACT 1989 (PNDCL 217)<sup>10</sup>. This law basically regulate the importation, usage and handling with regards to the mining sector. The law gives right to engage in mercury trading with restrictions on quantities, issuing of license for trading, transfer of mercury and sanctions for offenders of the law. The law does not cover or restrict the use of mercury containing equipment.

46. Quantities used by the sectors are as follows; the mining sector (80.4%), health sector (11.7%) and education (7.8%). Most of the research works done on mercury focuses on releases

<sup>10</sup> <http://hseqsolutions.com.gh/en/files/hseq/MERCURY%20ACT,1989.pdf>

from mining activities into the environment. There are no written plans or strategies to reduce or stop using mercury-containing equipment in the health delivery system (Amfo-Otu et al., 2014)<sup>11</sup>.

47. The hospital assessment also looked at the use of Mercury containing devices and products in the Health Sector. It concluded that none of the HCF can be said to be mercury free, because they either use mercury field thermometers or Mercury-based sphygmomanometers for pressure measurement, or both. At the same time these HCFs might also be using Mercury-free thermometers and sphygmomanometers.

48. It was found that though there is no policy in place to ban mercury-based equipment, most regional and district hospitals are changing from mercury thermometers to digital ones. In most cases, HCFs use digital thermometers but they continue to use the Mercury-based sphygmomanometer. It was observed that some health care facilities used the mercury field sphygmomanometers alongside the aneroid or digital type or both.

49. District, regional and university hospitals also house dental units. Often they make use of dental amalgam as well as composites, depending on the means of the patients (although part of the costs of composites are also covered through the national insurance scheme). The challenge dental units face are mostly related to the disposal of Mercury containing wastes. One dental unit was observed to store Mercury containing amalgam waste in plastic bottle containers with water.

50. Based on the assumption that on average 2.8 g of Hg per bed per year (22,164 hospital beds) are released into the environment, Ghana's healthcare sector would be responsible for ~ **62 Kg of Mercury a year**.\*

51. Based on a quick calculation facilitated by UNEP's Simplified Toolkit for Identification and Quantification of Mercury Releases (Level 1)<sup>12</sup>, we can estimate that based on the Ghana population (24,223,431 as taken up in the UNEP Mercury database), the total amount of Mercury input through the use of dental amalgam is estimated at 107 kg Hg/year.

*National policy, regulatory and legal framework on Health Care Waste Management in Ghana*

52. All waste deposited in the public domain shall be the property of the District Assembly. The District Assembly may also direct generators of waste to dispose of or surrender such waste to the District Assembly in a manner and at such times and places as may be approved by the District Assembly. The District Assemblies shall ensure the availability of adequate sites for the present and future storage, treatment and disposal of wastes by identifying, acquiring, demarcating and protecting suitable areas (ESP, 1999, Pg 11). In Ghana the Polluter Pays Principle (PPP) makes the individual institution, hereby also health care facilities, responsible for their own waste and the management and treatment of this in consultation with Environmental

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<sup>11</sup> Final Report on Initial Assessment of the Levels of UPOPs and Mercury Releases into the Environment Resulting from HCWM in Ghana (Amfu-Otu/MoH/GHS/UNDP, 2014)

<sup>12</sup><http://www.unep.org/chemicalsandwaste/Mercury/MercuryPublications/GuidanceTrainingMaterialToolkits/MercuryToolkit/tabid/4566/language/en-US/Default.aspx>



Department of the Assemblies. This policy is an agreement between the Ministry of Local Government and Rural Development and the Environmental Protection Agency (EPA).

53. The management of Health Care Waste is guided by two policies:

- Health Care Waste Management Policy and Guidelines for Health Institutions (MoH, 2006)
- Revised Environmental Sanitation Policy (Ministry of Local Government and Rural Development, 2010)

54. The Health Care Waste Management Policy and Guidelines for Health Institutions (2006), based on EPA's 2002 HCWM guidelines, includes all the necessary steps in HCWM; generation, segregation, color-coding system, storage, transportation, treatment and final disposal as well as training of staff, right equipment and records of the waste management. It should be followed by all HCFs, regardless of their ownership.

55. UPOPs are not mentioned in the policy, but the importance of the correct use of incinerators is included. Furthermore the correct way to handle Mercury-spills is included in the policy.

56. There is no specific law on HCWM in Ghana, but there are numerous laws and regulations which are relevant for waste management, therefore also for HCWM (see table 5).

*Table 5: list of legal or regulatory documents with relevance for HCWM*

| <b>Title of Regulation</b>                | <b>Acts and Year of Enactment</b> |
|---|-----------------------------------|
| The Constitution of the Republic of Ghana | 1992                              |
| The Environmental Protection Agency Act   | Act 490 , 1994                    |
| Environmental Assessment Regulations      | LI 1652, 1999                     |
| Public Health Act                         | Act 851, 2012                     |
| The Local Government Act                  | Act 462, 1993                     |
| National Building Regulation              | LI 1630, 1996                     |
| Town and Country Planning                 | Cap 84, 1944                      |
| Vaccination Ordinance                     | Cap 76                            |
| Quarantine Ordinance                      | Cap 77                            |
| Mosquito Ordinance                        | Cap 75                            |
| Infectious Disease Ordinance              | Cap 78                            |
| Food and Drugs Law                        | 305b (1992)                       |
| Mortuaries and Funeral Facilities Act     | Act 563, 1998                     |
| The Criminal Code                         | Act 29, 1960                      |
| Mercury                                   | Act 1989 (PNDCL 217)              |

57. The Mercury importation, usage and handling is regulated by the Mercury Act, which is generally pointed towards the mining industry. The act restricts the amounts of mercury one is allowed to trade with, but does not concern handling or buying equipment that contains Mercury. Ghana has no official plan or policy for a phase-out of Mercury-containing equipment such as thermometers in the health care sector. Mercury contained in products in the health sector, makes up approximately 11.7 % of the total Mercury releases.

### *Training and Capacity Building related to HCWM*

58. Most health care facilities have a responsible person for managing health care waste at the facility. Most of these are Environmental Health Officers (EHOs) who have been trained by the School of Hygiene, except for the Holy family Municipal Hospital which had the duties footed by the Estate Manager. Komfo-Anokye Teaching (KATH) and 37 Military Hospitals had a number of staff working in the Environmental health unit with the unit heads holding Masters in Environmental Science and Environmental Management respectively. All the other staff either had a certificate or diploma from the School of Hygiene, which trains Environmental Health Officers for the country.

59. The Officers indicated that their training at the School of Hygiene was on waste management in general but did not include details on health care waste; therefore, they learn mostly about HCWM on the job. This was confirmed by the Principal of the Accra School of Hygiene who said that, "detailed training on health care waste is a specialised field which is reserved for higher degree which they have developed (Degree and Masters) but at diploma level the students are taken through waste management in general.

60. About five of the health facilities have not had any training on waste management for the past year and for some, the training took place more than 5 years ago. They however indicated that they have had HIV/AIDS infection prevention training in February 2013 in which the use of safety protective equipment and safe waste handling were included. KATH and Holy Family Hospitals indicated that they have had some training on waste management but could not show any training document or list of participants as a proof.

61. Facilities that have not had such training receive constant information on segregation from the Environmental Health Officers during their routine inspection. All the facilities indicated that new staffs were trained during the usual orientation for new staff. Most of the facilities did not receive refresher training, at least once a year, except for KATH.

### *Monitoring*

62. Monitoring is done in almost all the facilities by the environmental health officers, Infection Prevention Committee and Occupational Health and Safety Committee through their regular daily and weekly and monthly inspections of the wards and the compound. If any observation is made on the waste management practice which does not conform to separation and other requirements they would prompt the workers on the best practices. If environmental health officers are not clear with waste categories then it will be difficult for them to ensure that proper segregation is done.

63. Apart from the internal monitoring done by the various officers, there should be an external agency or unit that visits the hospitals for inspection or monitoring on HCWM for either commendation or reprimand. The location of HCFs should not prevent the Ministry of health, Ghana health service and Environmental Protection Agency from visiting for inspection.

64. A common opinion is that HCF are not inspected on a regular basis which results in them not adhering to HCWM related regulations. Although the implementation of HCWM practices is

more complex than simply adhering to related regulations, the aspect of monitoring and enforcement needs to be improved.

65. A responsible unit should be mandated to do this regular monitoring of the HCFs to check their compliance to the national policy and laws to ensure best environmental practices. This will also contribute to getting the attention of the management of the health care facilities to prioritise HCWM issues in the HCFs.

### **Summary of the threats, fundamental causes and barriers for the environmentally sound management and treatment of healthcare waste and Mercury containing medical devices**

66. The baseline presented in the previous sections already touches upon some of the challenges pertaining to HCWM that are encountered in Ghana, these challenges can be summarized as follows:

#### *Inadequate Financial Resources Allocated to HCWM:*

- Low priority among implementers (e.g. Ministry of Finance, Ministry of Health, District Assemblies and HCFs) results in insufficient financial resources being allocated at facility level to manage healthcare waste properly.
- High capital investment for treatment and disposal options for HCW, which meet international BAT/BEP standards.
- Inadequate human and financial resources allocated to HCWM at facility level (resulting in absence of sharps containers, liners, bins, absence of PPE, absence of safe transportation trolleys, broken down incinerators, fuel to run the incinerator, etc.)
- Many development partners in health are not interested in this area, even though many donors support health sector programmes, seldom aspects related to HCWM are taken up in these programs.
- Most often HCFs are unaware how and how much to budget for HCWM related activities, results in no or too low budget allocations for HCWM.

#### *Low Priority Given to HCWM by HCFs:*

- More often than not, HCFs leadership is not interested or committed to HCWM activities (most likely because HCFs are not assessed on their performance related to HCWM) which results in the fact that waste management and infection prevention committees often do not exist. As a result it is assumed that HCWM is the duty of health officer and waste handlers, while at ward level no one is assigned the responsibility of HCWM or the responsibility ends up with nurses and nurse assistants causing delays and poor quality of work.
- Lack of specific staff to deal with HCWM. As a result few service providers (nurses and nurse assistant) deal with indoor collection of HCW and this causes delays of work and poor quality of work.
- Most HCFs have no specific HCWM policy or plan in place.

#### *Low Awareness & Low Capacity:*

- Generally in-country knowledge on HCWM is low.

- Low awareness among health workers on the dangers of infectious waste as well as lack of knowledge and skills on how to manage healthcare waste, resulting in:
  - o No standard segregation procedures (every hospital having their own approach).
  - o Mixing up of color-coding for receptacles/liners resulting in bad segregation.
  - o No standardized safe way of collecting sharps using sharps containers, resulting in overfilling and risk of spillage during transportation of waste.
  - o Highly infectious waste not separated or pretreated before final treatment/disposal.
  - o Waste treatment technologies are often inadequately operated.
- Health care providers (even EHOs), do often not receive formal training on HCWM, and they learn by doing at daily work. There is a need for good quality pre-service training, training upon entry-into service for new staff, and regular refresher courses for staff.
- Inadequate institutional capacity at national level (e.g. enforcement agencies) to provide sufficient oversight and monitoring to HCFs, transportation and disposal companies to ensure that best HCWM practices are implemented and adhered to.

*Mediocre Quality or Absence of Treatment Technologies:*

- Good technologies (meeting BAT/BEP requirements) for managing healthcare waste are expensive and not affordable for many health facilities. This results in HCFs disposing of HCW by open burning and using old fashioned single chambered and badly maintained technologies which release UPOPS and mercury
- Some HCFs dispose of their waste at city dumpsite.
- No standardized methods for treatment of HCW, as a result each facility constructs its own incinerator of any standard.

*Policies and Regulations:*

- Absence of a specific national policy on HCWM.
- Lack of legislation/regulations governing the management of HCW and other hazardous discharges, resulting in a reluctance to adhere to HCWM procedures.
- There are no specific fees and penalty instituted for those acting in contrary to national standards and procedures governing HCWM.
- Environmental impact assessments (EIAs) are not taken as a priority before engaging in any health related activities.
- National Policy, guidelines, procedures, monitoring plan and posters, which are related to HCWM are not available at many HCFs. There is a need for more advocacy and dissemination of awareness raising materials.

*Maintenance and Repair:*

- Poor operation, maintenance and absence of repair capacity remains one of the main reasons for breakdown and sub-optimal functioning of existing disposal technologies results in frequent breakdown of technologies.
- Lack of capacity of maintenance teams, both at national/regional/district level as well as at HCFs level in terms of manpower, capacity, know-how, spare parts or the funds to undertake regular trips to service and repair technologies.

*Inadequate infrastructure & disposables:*

- Often there are no separate storage facilities available on the health facility’s premises for infectious and municipal waste, often resulting in the remixing of previously segregated wastes.
- Personal protective equipment is not always available or if available only certain items are available.
- Absence of segregation posters, even if standard segregation posters are available, stocks are often depleted.
- Access to incinerators and waste storage points is often not restricted allowing excess to it by unauthorized personnel and animals.
- Waste is often placed in the open or next to the incinerator being exposed to the weather (sun, rain, etc.) and scavenging animals.
- Lack of adequate supplies and equipment for HCWM as equipment are not included in the MoH and Medical Store (MSD) catalogue. The catalogue includes all essential drugs but equipment for HCWM is not in the list of essential drugs.

**Stakeholder Analysis**

67. Table 6 below provides an overview of the stakeholders that are involved in the area of Health Care Waste Management at national level and have been consulted throughout the preparation of the proposed project.

68. There are a number of initiatives in Ghana (past, on-going and future) that are relevant for the proposed project components in Ghana. For an overview of these activities please refer to table II, which has been presented in Annex I.

*Table 6: National Stakeholders Involved in the Area of HCWM in Ghana and for the Project Implementation.*

| Entity   | Roles and Responsibilities pertaining to (Healthcare) Waste   |
|--|---|
| <p>Ministry of Health (MoH) and Ghana Health Service (GHS)</p> <p><i>Occupational &amp; Environmental Health Unit</i><br/>Lead executing agency.</p> | <ul style="list-style-type: none"> <li>• Responsible for organizing a safe and environmentally sound management system for the management of healthcare waste generated by all government, mission, private and health facilities in the country and facilitate and support various measures directed towards managing environmental impacts, from the health sector.</li> </ul>  |
| <p>Ministry of Environment, Science, Technology and Innovation (MESTI)</p>   | <ul style="list-style-type: none"> <li>• Responsible for providing policies pertaining to environmental protection e.g. such as National Environmental Policies, Environmental Management Acts and their Regulations, programmes and projects.</li> </ul>   |
| <p>Ministry of Local Government and Rural Development (MLGRD)</p>  | <ul style="list-style-type: none"> <li>• Regulate and supervise waste management in municipalities/districts/councils.</li> <li>• In towns, the urban local authorities are responsible for the provision of containers for waste collection, the transportation of the waste from the point of collection to the disposal site, proper disposal of the waste as well as management of the landfill/disposal site.</li> </ul> |
| <p>Environmental Protection</p>  | <ul style="list-style-type: none"> <li>• Draft environmental regulations and guidelines.</li> </ul>   |

|   |  |
|---|--|
| Agency (EPA)  | <ul style="list-style-type: none"> <li>• Support enforcement and compliance pertaining to environmental protection and pollution control.</li> <li>• Review and monitor environmental impact assessments (EIAs), facilitate public participation in environmental decision-making and supervise and co-ordinate environmental management issues.</li> </ul>  |
| Ministry of Finance   | <ul style="list-style-type: none"> <li>• Coordinate all the financial activities of UN funded projects in the country</li> <li>• Support in project quality assurance processes</li> <li>• Contribute to project budgeting and</li> </ul>  |
| Pharmacy Board (Chief Pharmacist & National Centralized Procurement Division) | <ul style="list-style-type: none"> <li>• The Chief Pharmacist can propose changes to the health specific procurement catalogue and advise the pharmacy board on changes and additions to the current offer of devices/products and supplies for public healthcare facilities (e.g. relevant for the introduction of Hg and PVC-free alternatives).</li> </ul>  |
| Healthcare Facilities (HCFs)  | <ul style="list-style-type: none"> <li>• The heads of health facilities are responsible for the health protection and safety of the staff, patients and visitors and bear the responsibility for the safe disposal of health-care waste generated within their health management systems to safeguard the general public.</li> <li>• In HCFs where there is an Environmental Health Technician/Environmental Health Officer, (s)he is responsible for the development of the HCWM plan in the hospital and for the day-to-day operation and monitoring of the waste management system at the hospitals.</li> </ul> |
| National Dental Association (NDA)   | <ul style="list-style-type: none"> <li>• NDA is a key partner in supporting the development of guidelines for best practices pertaining to Hg/dental amalgam management, disposal practices and dissemination of information related to best amalgam practices and guidelines among dental association members.</li> <li>• The NDA can also play an important role in encouraging a ban on the mixing of dental amalgam at dental offices and promoting a shift towards pre-mixed capsules or preferably alternative restorative materials.</li> </ul>   |
| Medical Universities, colleges and medical/nursing schools                    | <ul style="list-style-type: none"> <li>• Offer education and training in HCWM at national and facility levels (e.g. diploma courses in Environmental Health for example at a School of Medicine)</li> </ul>  |
| Private Sector  | <ul style="list-style-type: none"> <li>• In many of the project countries, the private sector is engaged – through Public Private Partnerships (PPPs) in the collection and haulage of municipal solid waste, sometimes also hospital waste.</li> <li>• In Ghana, the private sector is already involved in the collection of HCW but not into treatment of HCW.</li> </ul>  |
| Development partners in the health sectors                                    | <ul style="list-style-type: none"> <li>• Donor agencies and international organization support country initiatives through financing, project management and technical expertise in the area of Healthcare Waste Management (e.g. WHO, UNICEF, UNHABITAT, Health Care Without Harm, World Bank, EPI, CDC)</li> </ul>   |
| NGOs  | <ul style="list-style-type: none"> <li>• Supplement government efforts in curbing environmental impacts from hazardous waste practices through targeted interventions at national, regional and global level.</li> </ul>   |

- Create awareness on health impact arising from HCW and hazardous substances.

## II. STRATEGY

### Policy conformity

#### *Stockholm Convention on POPs & National Implementation Plan*

69. The participating project countries (Ghana, Madagascar, Tanzania and Zambia) are signatories to the Stockholm Convention which calls for “priority consideration” of alternative technologies that avoid the formation of dioxins and furans, such as non-incineration technologies identified in the BAT/BEP guidelines.

70. The countries’ National Implementation Plans (NIPs) identify medical waste incineration as a significant source of dioxins/furans and Governments plan to apply BAT/BEP guidelines in keeping with Stockholm Convention obligations.

71. In the case of Ghana, national objectives and activities related to UPOPs reduction and medical waste disposal/incineration has been described in detail in its 2007 NIP. Medical waste incineration was among the main sources of PCDDs/PCDFs in Ghana in 2002.

72. Measures to Reduce Releases from Unintentional Production (as included in the Action Plan) include establishing appropriate policy and legislation for effective regulation and enforcement of prevention of unintentional production of PCDD/F, HCB and PCBs, and eliminating/reducing releases of PCDD/F, HCBs and PCBs from incineration of medical waste by, among others, developing a phase out strategy for all old and existing methods of incineration in hospitals and health centers, and developing institutional and human resource capacity to implement national medical waste management guidelines.

The proposed project will directly contribute to all the above priorities and related actions.

#### *Minamata Convention on Mercury*

73. The Government of Ghana has signed the Minamata Convention.

#### *Libreville Declaration on Health and Environment*

74. Ministries of Health and Environment in the four project countries are among the 53 African countries that adopted the Libreville Declaration in August 2008 which recognized the problems of poor waste management and toxic substances. In the Declaration, these African Governments committed to develop regional, sub-regional, and national frameworks to address environmental impacts on health through policies and national plans; and build regional, sub-regional, and national capacities to prevent environment-related health problems.

75. In line with Libreville Declaration and in recognition of the importance of county specific information on health and environment, the Ministry of Health and the Environmental Protection

Agency with the financial and technical support from WHO conducted a National Situational Analysis and Needs Assessment (SANA) on Health and Environment inter-linkage in 2010.

#### *National Health Policies and Plans*

76. Ghana's National Health Policy "Creating Wealth through Health" (MoH, 2007) identifies that a safe and healthy environment including the quality of air, water and soil has major implications for the health of Ghanaians. However, the air, water and soil are being polluted by littering, improper disposal of waste, emissions from industry and vehicles, and smoke from burning of waste and bush fires. It concludes that the development of infrastructure for waste management has not kept pace with population growth.

77. The NHP proposes a number of policy measures which are related to (Healthcare) waste management, these are:

- Develop standards and implement programmes and initiatives for promoting healthy settings, as in healthy communities, in collaboration with local government, rural development agencies, community leaders and water and sanitation departments to ensure access to safe water and sanitation by
  - (i) Advocating for public-private collaboration and more private provision and financing of waste management,
  - (ii) scaling-up the WASH (Water, Sanitation and Health) model in deprived communities, and
  - (iii) Strengthening the monitoring of water quality, advocating for increased investments in water, and promoting new approaches to water use.
- To provide increasing managerial and financial autonomy for public health institutions within a strengthened framework for public accountability, with a view to achieving overall efficiency in service delivery, reducing waste and improving responsiveness to local needs.
- Promotion and increase in research and advocacy leading to the adoption of appropriate and cost-effective systems for waste management, including plastic, liquid and solid waste.

78. To advocate for increased financing in health promotion, water and sanitation, including/especially waste management.

The proposed project is therefore entirely in line with the country's policies, plans and priorities.

#### **Project objective**

79. The proposed Africa Regional Healthcare Waste Project seeks to:

1. Implement best environmental practices and non-incineration and mercury-free technologies to help African countries meet their Stockholm Convention obligations and to reduce mercury use in healthcare;
2. Ensure and enhance the availability and affordability of non-incineration waste treatment technologies in the region, building on the outcomes of the GEF supported UNDP/WHO/HCWH Global Medical Waste project.

80. The project intends to achieve these objectives through 6 main project interventions:



1. Build national capacity to enable the assessment, planning, and implementation of healthcare waste management (HCWM) systems.
2. Develop/improve the national policy and regulatory framework pertaining to HCWM.
3. Make available affordable non-incineration HCWM systems and Mercury-free devices that conform to BAT and international standards.
4. Demonstrate HCWM systems, recycling, Mercury waste management and Mercury reduction at project facilities.
5. Establish national HCWM training infrastructures.
6. Create awareness on HCWM.

81. These project interventions will be described in more detail in the section on “*Project Components, Outcomes and Outputs*”.

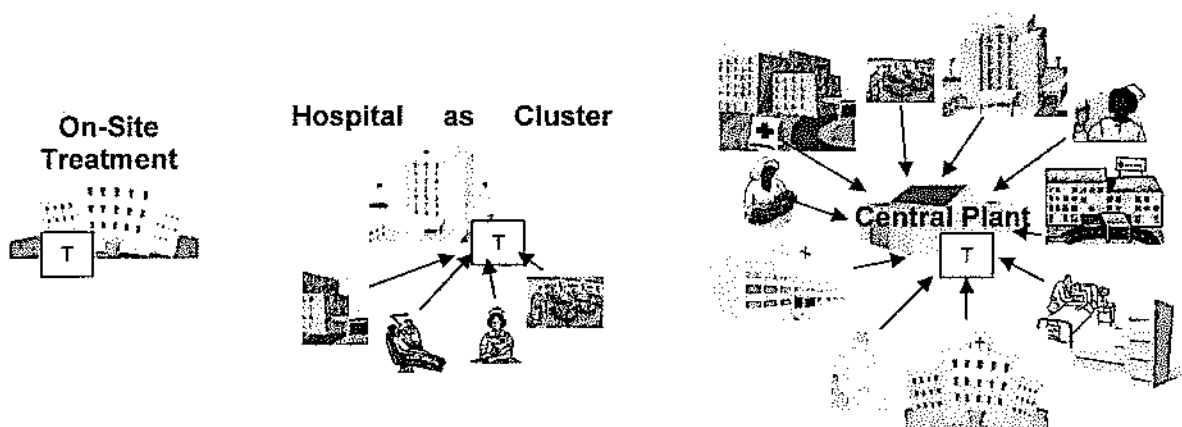
### Non-incineration and Mercury-Free Technologies

82. Considering that in the Sub-Sahara region the use of non-incineration technologies for treating healthcare waste is fairly new or in certain countries even non-existent, this section aims to provide a bit more information on the treatment of healthcare waste using non-incineration technologies, and the approach the projects aims to apply.

#### *Waste Treatment Approach*

83. In general, there are three approaches for the treatment of HCW (see figure 1):

- **On-site (OS)** – A healthcare facility treats its own waste.
- **Cluster treatment (Cluster)** – A hospital treats its waste plus waste from other health facilities in a small area.
- **Central treatment (CTF)** – dedicated treatment plant collects and treats wastes from many health facilities in an urban center or region.



*Figure 1: HCW Treatment Approaches*

84. In total, the project aims to support a total of four central treatment facilities, 22 hospitals (with an average of 150 beds) and two dozen health centres in the four countries. Initially, in each country, the project will support:

- One central/cluster treatment facility**
- 2 hospitals** (up to 300 hospital beds)
- 3 rural health centres** or dispensaries

85. *Note:* After the Mid-Term Evaluation (MTE) and based on criteria agreed upon by all the project countries at the first regional project meeting, additional facilities will be supported in the second half of the project's implementation (14 additional hospitals averaging 150 beds each and 12 additional rural health centres). In which country (ies) these facilities will be located – will depend upon the results of the MTE.

86. It should be noted that because the HCWM situation in the four project countries is very different, the size and type of facilities to be supported by the project vary from country to country and so do their locations and the circumstances under which they operate. As such the project will support a different set-up in each of the countries.

87. In Ghana, seven (7) healthcare facilities have been preselected (see table 4). Keeping in mind that the project's first phase can support treatment technologies for up to a total of 300 hospital beds, the project's Phase I will limit itself to supporting 1 model facility (either Koforidua Regional Hospital – 427 beds or Central Regional Hospital – 450 beds) or supporting 2 model facilities (to be pre-selected).

88. In addition, during Phase I, one Centralized Treatment Facility (CTF) will be supported (most likely to be based in Accra, Kumasi, Koforidua or Cape Coast) which will be able to treat infectious waste volumes produced by ~ 2549 beds.

89. Health Centers that will be supported by the project will only be selected once the selection process of the larger hospitals has been concluded. To ensure that the project remains cost-effective, these latter need to be in relatively close vicinity of the hospitals, either to have their waste treated there – or to ensure that project experts minimize national/local travel time.

90. As part of project component 1, the project's final approach will be agreed upon with all the project countries.

91. *Note:* After the Mid-Term Evaluation (MTE) and based on criteria agreed upon by all the project countries at the first regional project meeting, additional facilities will be supported in the second half (Phase II) of the project's implementation (14 additional hospitals averaging 150 beds each and 12 additional health centres). In which country (ies) these facilities will be located – will depend upon the results of the MTE.

#### *Non-incineration technologies*

92. One of the main project objectives is to *“Implement best environmental practices and non-incineration and Mercury-free technologies to help African countries meet their Stockholm Convention obligations and to reduce Mercury use in healthcare.”*

93. The proposed regional project aims to reduce the reliance of African countries on heavily polluting low-cost low technology incineration and create a tipping point for the use of non-incineration technologies which will generate significantly less air pollutants than incinerators and other high-heat thermal processes. The use of non-incineration technologies can also provide for the opportunity to recycle disinfected waste fractions, in particular plastics, and allow Healthcare facilities to reduce their costs for waste treatment, by selling shredded plastics to recyclers.

94. State-of-the-art non-incineration technologies that are considered cost-effective alternatives to incineration are (WHO, 2013):

- Autoclaves
- Hybrid autoclaves & continuous steam treatment systems
- Microwave technologies
- Frictional heating systems
- Dry heat treatment systems
- Chemical disinfection systems (e.g., ozonation)
- Alkaline hydrolysis technologies (for anatomical waste and animal carcasses)

95. The choice of treatment system involves consideration of waste characteristics, technology capabilities and requirements, environmental and safety factors, and costs – many of which depend on local conditions. Factors to consider include:

|   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• Waste characteristics</li> <li>• Quantity of wastes for treatment and disposal</li> <li>• Capability of the health-care facility to handle the quantity of waste</li> <li>• Types of waste for treatment and disposal</li> <li>• Technology capabilities and requirements</li> <li>• Local availability of treatment options and technologies</li> <li>• Capacity of the system</li> <li>• Treatment efficiency</li> <li>• Volume and mass reduction</li> <li>• Installation requirements</li> <li>• Available space for equipment</li> <li>• Infrastructure requirements</li> <li>• Operation and maintenance requirements</li> <li>• Skills needed for operating the technology</li> </ul> | <ul style="list-style-type: none"> <li>• Environmental and safety factors</li> <li>• Environmental releases-care activities</li> <li>• Location and surroundings of the treatment site and disposal facility</li> <li>• Occupational health and safety considerations</li> <li>• Public acceptability</li> <li>• Options available for final disposal</li> <li>• Regulatory requirements</li> <li>• Cost considerations</li> <li>• Equipment purchase cost</li> <li>• Shipping fees and customs duties</li> <li>• Installation and commissioning costs</li> <li>• Annual operating costs, including preventive maintenance and testing</li> <li>• Cost of transport and disposal of treated waste</li> <li>• Decommissioning costs.</li> </ul> |
|---|--|

96. It should be noted that no “*one solution fits all*” approach will be supported by the project. Based on the needs and requirements for each of the selected project facilities, technical specifications will be drawn up based upon which international procurement will be undertaken (see also Section VI on procurement).

97. It should be noted that although UNDP has prepared compilations under the GEF/UNDP/WHO/HCWH project on non-incineration technology vendors<sup>13,14,15</sup>, the UNDP GEF project will not endorse any of the technologies, companies or brands in the lists provided and does not claim that this is a comprehensive list of non-incineration treatment technologies. The UNDP GEF project does not make any warranty, expressed or implied, with respect to the use of any of the technologies in those lists and does not assume any liability with respect to their use.

98. Procurement will be based on technical specifications drawn up by the national project teams, under the lead of the Project's Chief Technical Advisor (CTA) and National Implementing Entity/Responsible Partners in each of the project countries, which are in the case of Ghana;

- The Ministry of Health
- The Ministry of Environment Science Technology and Innovation (MESTI).

For more information on the project's procurement approach, see Section VI.

#### *Mercury Free & PVC Free*

99. At national level, efforts will be undertaken to introduce measures to reduce the import and use of Mercury-containing devices as well as minimize the use of PVC containing medical plastics. For nearly all uses of Mercury in healthcare, there are safe, cost-effective non-Mercury alternatives available<sup>16, 17</sup>. Similarly the healthcare market has responded to concerns about PVC use and is increasingly bringing to market new alternatives. Many of the devices are cost competitive with PVC products<sup>18</sup>.

100. In the next section, activities pertaining to the phase out/phase-down and waste management of Mercury and PVC containing items will be further described.

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<sup>13</sup> (UNDP/GEF, 2012) "Compilation of Steam-based Treatment Technology Vendors". Available at: <http://www.gefinedwaste.org/downloads/COMPILATION%20OF%20VENDORS%20OF%20WASTE%20TREATMENT%20AUTOCLAVE,%20MICROWAVE,%20AND%20HYBRID%20STEAM-BASED%20TECHNOLOGIES%20AUG%202012.pdf>

<sup>14</sup> (UNDP/GEF, 2012) "Compilation of Vendors of Frictional Treatment Technologies". Available at: <http://www.gefinedwaste.org/downloads/Compilation%20of%20Vendors%20of%20Frictional%20Treatment%20Technologies%20August%202012.pdf>

<sup>15</sup> (UNDP/GEF, 2010) "Compilation of Vendors of Alkaline Hydrolysis Technologies". Available at: <http://www.gefinedwaste.org/downloads/Compilation%20of%20Vendors%20of%20Alkaline%20Hydrolysis%20Technologies%20August%202012.pdf>

<sup>16</sup> (WHO, 2011) "Replacement of Mercury thermometers and sphygmomanometers in healthcare" (English, Russian, Spanish) Available at: [http://www.who.int/water\\_sanitation\\_health/publications/2011/mercury\\_thermometers/en/](http://www.who.int/water_sanitation_health/publications/2011/mercury_thermometers/en/)

<sup>17</sup> (HCWH) "Mercury Elimination Guides for Hospitals (available in English, Spanish, Portuguese and Chinese)" [http://www.who.int/water\\_sanitation\\_health/publications/2011/mercury\\_thermometers/en/](http://www.who.int/water_sanitation_health/publications/2011/mercury_thermometers/en/)

<sup>18</sup> A list of PVC-free medical devices can be found at [http://www.hcwh.org/lib/downloads/pvc/Alternatives\\_to\\_PVC\\_DEHP.pdf](http://www.hcwh.org/lib/downloads/pvc/Alternatives_to_PVC_DEHP.pdf).

**Component 1. Disseminate technical guidelines, establish mid-term evaluation criteria and technology allocation formula, and build teams of national experts on BAT/BEP at the regional level [Regional component]<sup>19</sup>**

|                     |  |         |
|---------------------|--|---------|
| <b>Outcome 1.1</b>  | <b>Technical guidelines, evaluation criteria and allocation formula adopted</b><br>Output: Mid-term evaluation criteria and formula for the allocation of technologies among countries agreed upon.  |         |
| <b>Outcome 1.2</b>  | <b>Country capacity built to assess, plan, and implement healthcare waste management (HCWM) and the phase-out of Mercury containing products in healthcare environment</b><br>Output: Teams of national experts trained (at the regional level). |         |
| <b>GEF funding</b>  |  | 19,162  |
| <b>Co-financing</b> |  | 218,206 |

Outcome 1.1: Technical guidelines, evaluation criteria and allocation formula adopted

Outputs: 1.1 Mid-term evaluation criteria and formula for the allocation of technologies among countries

101. At a regional conference to be organized in one of the project countries at the start of the project, each project country's Government, most likely represented through the government entity that will act as the project's executing agency for the implementation of the national project component, the Ministry of Health, will agree on the selection of the beneficiary health-care facilities/Central treatment facilities that will receive the initial set of non-incineration HCWM systems and mercury-free devices as part of *Component 3*. The selected HCFs shall be based on the list of the pre-selected HCFs using the agreed criteria.

102. For each of the countries, it is expected that the lead Ministry, in accordance with interest expressed by the project beneficiaries (.g HCFs and CTFs), will opt for a combination of the following:

- Development of a central or cluster treatment facility.
- Up to two hospitals (up to 300 hospital beds).
- Three rural health centres or dispensaries.

103. During the PPG phase of the project, an initial set of criteria for the selection of HCFs was drafted (see Annex IV), and reviewed based on discussions with interested project stakeholders. After agreement on the criteria was reached, a number of health-care facilities were selected that met the proposed criteria. Although in Ghana and Tanzania these selected HCFs participated in an initial assessment that was conducted as part of the PPG phase, in Madagascar and Zambia

<sup>19</sup> Note that throughout this section, the GEF financing and co-financing figures for the whole regional project approval can be consulted in the overall project document approved by the GEF.

the time-frame for conducting a Rapid Initial Assessment was insufficient. Therefore, an indepth assessment of the selected facilities has been proposed as part of project component 2.

104. During this regional conference, first and foremost the Governments will agree on:

- A technology allocation formula (“*how many technologies which each country/facility receive*”);
- The criteria for the project’s mid-term evaluation; and,
- An allocation formula for additional technologies.

105. The mid-term evaluation would take place after the project has been in implementation for at least two-years. In order to evaluate the progress of the countries and facilities in adopting BEP and BAT, it would be advised that the mid-term evaluation would not take place until the majority of the project beneficiaries have operationalized their non-incineration technologies and has taken to using their Mercury-free devices. This would be supported by annual review report from stakeholders of the project.

106. Based on the outcome of the project mid-term evaluation, a decision would be made for best performing countries to receive additional non-incineration and mercury-free medical devices. The criteria for such decisions including the technology, devices and facilities will be determined at the beginning of the project. (also referred to as a “*formula for the allocation of additional HCWM systems and Mercury-free devices*”).

Outcome 1.2: Country capacity built to assess, plan, and implement healthcare waste management (HCWM) and the phase-out of mercury in healthcare environment

Output 1.1.2: Teams of national experts trained (at the regional level).

107. Intensive training workshops will be conducted on the regional level to prepare teams of national experts (Master trainers) comprised of government personnel and local consultants selected by the countries. The teams will undergo comprehensive training in non-incineration HCWM systems, policies, waste assessments, UNDP GEF and WHO tools, national planning, BAT/BEP guidelines, mercury phase-out, international standards, and other technical guidelines.

108. Master trainers will receive intensive training in content, effective teaching methods, evaluation tools, and Training of Trainers programs.

109. The training workshops will bring about a common understanding of project objectives and deliverables; foster regional cooperation and information exchange; reduce project costs; facilitate planning; and ensure consistency with international standards and guidelines.

**Component 2 Health Care Waste National plans, implementation strategies, and national policies in each recipient country [National component]**

|                     |  |
|---------------------|--|
| <b>Outcome 2.1</b>  | <b>Institutional capacities to strengthen policies and regulatory framework, and to develop a national action plan for HCWM and Mercury phase-out enhanced</b><br>Output: National policy and regulatory framework for HCWM and Mercury phase-out. |
| <b>Outcome 2.2</b>  | <b>National Plan with Implementation Arrangement adopted</b><br>National action plan including the selection of up to 1 central or cluster treatment facility, 2 hospitals, and 3 small rural health centres as models                             |
| <b>GEF funding</b>  | 105,809  |
| <b>Co-financing</b> | 468,676  |

Outcome 2.1: Institutional capacities to strengthen policies and regulatory framework, and to develop a national action plan for HCWM and mercury phase-out enhanced.

Output 2.1.1: National policy and regulatory framework for HCWM and mercury phase-out.

110. Upon their return to their respective countries, the national teams will assess and strengthen national policies, regulatory framework, and national plans for HCWM and mercury. Based on their assessment a detailed proposal for intervention supported by the project on improving the policy and regulatory framework will be made.

111. Following the assessment conducted in preparation of the proposed project (Amfo-Otu et al., 2014), and discussion held at national level in preparation for the proposed project (October 2013 & Feb. 2014), the following recommendations pertaining to improvement of the HCWM policy and regulatory framework were made (however the below mentioned interventions will be fine-tuned after the national teams have assessed and strengthened national policies, regulatory framework, and national plans for HCWM and mercury):

- The HCWM guidelines and policy would need to be reviewed in such a way that non-incineration technologies can be used for HCWM treatment, and should be reviewed in light of current global and national standards.
- A holistic national standard for HCWM should be developed as well as a National Action Plan to make sure all HCFs are able to manage their waste in a responsible, sustainable and cost effective way.
- National Legislation on HCWM is needed to empower regulatory bodies for better law enforcement (e.g. through the issuance of a ministerial / Government directive set-up a National Task Force/Committee on HCWM, which can ensure the monitoring HCFs, and issue penalties/fees. Such a National Task Force could be made up of national experts, drawn from EPA, MLGRD, MoH, GHS, Attorney General, Civil Society Groups, Media and Private Sector).
- Develop a standard assessment for regulatory entities to assess HCFs to facilitate inspections, and institute a point system.
- Develop a ban on the importation for Mercury containing products.
- Develop and implement minimum standards for incineration technologies.

- Develop a regulation that requires HCFs to treat their infectious waste. This will help create the enabling policy environment for the private sector to assume HCWM, help with tariff setting, etc.
- Establish standards for the operation of HCWM by the Private Sector.

112. It was recognized during the PPG phase that the awareness of policy and decision makers pertaining to HCWM is generally low, which results in a low priority given to HCWM and the difficulty for HCFs to allocate (and be allocated) an adequate budget to properly deal with HCWM.

113. As inadequate HCWM impacts human and environmental health, it results in significant costs related to treatment of morbidity as a result of bad HCWM practices, but also has economic consequences, due to lost work days, lower productivity and human suffering, among else.

#### Outcome 2.2: National Plan with Implementation Arrangement adopted

Output 2.2.1: National action plan including the selection of up to 1 central or cluster treatment facility, 2 hospitals, and 3 small rural health centres as models

114. Based on the agreements reached during the regional conference with all participating project countries, a national plan will be drawn up. Such a national plan could include a combination of centralized, cluster, and in-premise treatment systems and their corresponding infrastructure; development or integration of recycling networks and safe disposal sites; set-up of centralized and in-premise storage for healthcare mercury waste; promulgation of standards for mercury-free devices; and the selection of up to three health centres, two model hospitals and one central or cluster treatment facility partly based on UNDP GEF and WHO rapid assessment, costing, and other tools.

115. The team of National experts will prepare the model facilities to receive non-incineration HCWM systems and Mercury-free devices. The preparation will include the following activities:

- Finalizing MOUs with the model HCFs.
- Conducting detailed baseline assessments of each of the project model facilities<sup>20</sup> (including waste quantities, types of waste, current segregation, storage, transport and treatment practices, etc.)<sup>21</sup>
- Setting up HCWM committees at each of the HCFs with clear mandate in consultation with Management of HCFs.
- Developing and implementing HCWM policies and procedures (including monitoring) at facility level.

<sup>20</sup> These include HCFs that receive treatment technologies from the project – but also those hospitals served by a central treatment facility – which is being supported by the project.

<sup>21</sup> Making use of the Guidance Document on “*Measurements and Documentation*”<sup>21</sup> developed under the Global Medical Waste Project, a before and after snap-shot of the project’s impact will be documented in terms of UPOPs and Hg releases.



- Developing and implementing HCWM plans (including Mercury Management) for each of the project facilities.
- Training staff in best practices related to HCWM.
- Undertaking staff preference studies to select cost-effective alternatives to Hg (types, features, etc.) and PVC containing products. This will become the basis for procurement of Mercury-free devices under Component 3a.
- Work with model facilities to establish HCWM budget allocations for waste management, treatment and technology maintenance.

116. The team of National experts will prepare the central or cluster facilities to receive the large-scale non-incineration technologies. The preparation could include the following activities:

- Finalizing the MOUs with all stakeholders involved in the central/cluster facility, including the HCFs that will be served by it.
- Obtaining data from all the HCFs to be served by the central/cluster facility in order to specify the required capacity for the procurement.
- Working with the HCFs to minimize their waste and improve segregation.
- Working with the landfill operator to recommend improvements in the landfill if needed.
- Conducting routing optimization studies to minimize fuel and other transportation costs, and working with the central/cluster facility on the layout and design of the treatment facility.
- Exploring public-private partnership arrangements if appropriate.
- Providing assistance to the central/cluster facility and stakeholders on an economic cash flow analysis, a business plan including cost recovery through revenues from fees and recycling, a plan for the management and operation of the facility, and other plans to ensure sustainability as appropriate.

**Component 3a. Make available in the region affordable non-incineration HCWM systems and mercury-free devices that conform to BAT and international standards [Regional component]**

|                     |   |
|---------------------|---|
| <b>Outcome 3a</b>   | <b>Favourable market conditions created for the growth in the African region of affordable technologies that meet BAT guidelines and international standards</b><br>Output 3a.1: HCWM systems and Mercury-free devices for at least 3 health centres, 2 hospitals and 1 central or cluster facility procured<br>Output 3a.2: Initial set of HCWM systems and Mercury-free devices given to 3 health centres, up to 2 hospitals, and 1 central or cluster treatment facility |
| <b>GEF funding</b>  | 0   |
| <b>Co-financing</b> | 1,921,573   |

117. A regional approach will be employed to create market demand and stimulate the growth of non-incineration HCWM systems and mercury-free technology distributors or manufacturers in Africa. The project will adopt specifications developed by the current GEF/UNDP project for

non-incineration HCWH management systems that are consistent with Stockholm Convention BAT/BEP Guidelines.

118. Suppliers whose technologies meet the BAT/BEP guidelines and international standards, as certified by the regional project (including technology expert from respective country), will be selected through a competitive bidding process. The competitive bidding process will be led by UNDP Nordic Office - Procurement Support Unit – Health, which has extensive experience and expertise in the procurement of such devices and technologies. Technologies will be purchased with an extended warranty period and extended maintenance period and will preferably be procured from distributors and companies that have technical teams available in the country/region. The certified technologies shall be reconciled with country specific requirement to ensure that equipment procured can be adopted easily.

119. Non-incineration HCWM systems and mercury-free thermometers and sphygmomanometers sufficient to equip three (3) health centres, 2 healthcare facilities (up to 300 hospital beds total) or more, and one central facilities will be centrally procured. The size of the purchase and likely future demand will encourage manufacturers and distributors to make these technologies available and affordable in the region.

120. An initial batch of HCWM systems and mercury-free devices will then be distributed to each country for use in the model facilities.

In consultation with the project team, and led by the Ghana Health Services (GHS)/Ministry of Health, a number of selection criteria for project Health Care Facilities were developed and validated (see Annex IV). Based on the criteria, the HCFs to be included in the baseline assessment were identified. Subsequently, following assessment results and interest expressed by the HCFs, the following facilities been selected on a preliminary basis<sup>22</sup>.

- **Centralized Treatment Facility: Public Private Partnership**
  - This will be established through Public Private Partnership Initiative. Project could support particular capacity building elements under the condition that the waste company installs a non-incineration health care waste treatment systems.
  - Could be either a non-incineration centralized treatment facility installed on the premises of a larger hospital, which could be operated by the private sector – or could be a non-incineration technology that would be installed on the premises allocated to the Private Sector by the MLGRD.
- **On-Site Treatment (Hydroclaves are/will be installed and maintenance is already covered – GEF project to support “soft” training and capacity building components)**
  - Winneba
  - Tarkwa
  - Tamale

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<sup>22</sup> Pre-selected hospitals need to send an expression of interest to the MoH as well as UNDP, and once the project starts a memorandum of understanding between the HCF and the project will be signed which will stipulate the responsibilities of each of the involved parties.

- **Cluster Treatment (4 pre-selected - 2 to be ultimately selected)**
  - 37 Military Hospital
  - Koforidua Regional Hospital (very likely to be included in the project)
  - Komfo Anokye Teaching Hospital (expression of interest already received)
  - Central Regional Hospital

The I-RAT assessment results for each of the 4 “Cluster” HCFs are attached in Annex V.

**Component 3b. Demonstrate HCWM systems, recycling, mercury waste management and mercury reduction at the model health facilities, and establish national training infrastructure [National component]**

|                      |   |
|----------------------|---|
| <b>Outcome 3b.1</b>  | <b>HCWM systems demonstrated at the model facilities</b><br>Output 3b.1: BAT/BEP implemented at the model facilities  |
| <b>Outcome 3b.2</b>  | <b>Reduction in greenhouse gas emissions through recycling demonstrated</b><br>Output 3b.1: Recycling programs in the model facilities                          |
| <b>Outcome 3b.3:</b> | <b>Outcome 3b.3: Mercury reduction in the model facilities demonstrated</b><br>Safe storage sites for Mercury and Mercury-free devices used in model facilities |
| <b>Outcome 3b.4:</b> | <b>Outcome 3b.4: Institutional capacities for national training strengthened</b><br>Output 3b.4: National training program                                      |
| <b>GEF funding</b>   | 244,118   |
| <b>Co-financing</b>  | 1,289,252   |

121. At the country level, the team of national experts will prepare the model facilities to receive non-incineration HCWM systems and mercury-free devices. The preparation will include:

- Baseline assessments (including Mercury assessment)
- Promulgation of facility-level policies and procedures
- Development of HCWM plans (including Mercury Management)
- Training of HCF staff
  - Train HCF managers and administrators of the project facilities on their responsibility in planning, budgeting, implementing, monitor, evaluate and address emerging HCWM activities.
  - Ensure that at healthcare facility level, capacity is built to:
    - Train new staff on HCWM upon entry into service, as well as engage staff in a HCWM refresher course once a year (including training on mercury effects, handling, clean-up, storage and disposal).
- BEP implementation
- Installation of treatment technologies
- Training in the operation and maintenance of new technologies and Hg-free devices
- Recycling
- Monitoring and Evaluation

The model facilities will serve as pilot sites to gain experience and as BAT/BEP demonstration sites.

122. In order to reduce emissions from waste management practices, the project will support facilities to:

- Improve practices surrounding the steps necessary for plastics recycling (e.g. disinfection by autoclave/pressure cooker, sorting, shredding, transport and subsequent hand-over to recyclers). This would reduce the volume of waste to be disposed of and also provide for some income generation.
- Increase composting activities, which will significantly reduce the volume of the waste that needs to be transported to the landfill/dump site since organic waste makes up the majority of HCF waste. By developing composting activities on the premises, HCFs could keep waste collection rates charged by the municipal service providers lower, while generating some additional income through the sale of compost. The decision on who to do the composting (either by private company already into composting or HCFs staff) shall be reached in consultation with managers of HCFs.

123. As part of Output 3b.1 a Mercury baseline assessment will be undertaken for each project facility as part of the larger HCWM assessment. For each of the facilities, a Mercury management and phase-out plan will be prepared (as part of the development of facility HCWM plans). Mercury waste management practices will be implemented, safe storage sites set up and HCFs staff will be trained in the clean-up, storage and safe management of Mercury wastes.

124. A staff preference study will be conducted on cost-effective Mercury-free alternatives at some of the project HCFs, after which Mercury-free devices (types/brands will be determined based on the outcomes of the staff-preference study) will be procured for the project's HCFs and HCF staff trained in their use.

125. At large HCFs, it is Environmental Health Technicians (EHTs) or Environmental Health Officers (EOHs) that assume responsibilities related to HCWM. However smaller HCF do not have EHTs. At national level, training on HCW is available at the School of Medicine, which provides a Master's in Public Health. Most EHTs are educated here. However, as was observed during many of the assessments, most of the health care providers apart from EHTs have limited knowledge of proper health care waste collection, transportation and disposal.

126. In order to strengthen the institutional capacities for national training, the project will:

- Develop a training video in English and French that showcases best practices for HCWM, which can be used at HCFs.
- Establish a national training infrastructure for HCWM by revising and incorporating content for health-care waste management in a curricula for training/educational institutions e.g. Medical Faculties, Nursing schools; Environmental Health Schools; Schools of Hygiene; vocational training institutes to ensure pre-service awareness and training.

- Set up a specialized course on HCWM in order to obtain a competency in HCWM (e.g. certificate).
- Establish a training of trainers program for HCWM. Trainers trained at the regional Africa level in *Component 1* will constitute the foundation of the national training-of-trainers programs.

127. Synergy and coordination between the national training programs among the Anglophone and Francophone countries will be maximized.

In Ghana it is expected that the project will:

- Provide support to medical - and nursing- schools, review their curricula and incorporate HCWM and Hg modules/training into their curriculum.
- Provide support to the School of Hygiene, which trains EHO, review its curricula and ensure that modules on HCWM and Hg are incorporated into the curricula.
- Develop a Trainer-of-Trainer programme. By using a ToT approach it would be possible to target all HCFs in the country – or at least a large part of it.
- Establish a HCWM certificate course at AISW AM and incorporate HCWM modules in other training courses.

**Component 4a. Evaluate the capacities of each recipient country to absorb additional non-incineration HCWM systems and mercury-free devices and distribute technologies based on the evaluation results and allocation formula [Regional component]**

|                      |   |         |
|----------------------|---|---------|
| <b>Outcome: 4a.1</b> | <b>Capacities of recipient countries to absorb additional technologies evaluated</b><br>Output: 4a.1 Evaluation report for each recipient country including recommendations for improvement                 |         |
| <b>Outcome: 4a.2</b> | <b>Additional technologies distributed depending on evaluated capacities for absorption</b><br>Output: 4a.2 Additional technologies distributed to countries based on the evaluation and allocation formula |         |
| <b>GEF funding</b>   |   | 0       |
| <b>Co-financing</b>  |   | 421,809 |

128. On the regional level, a mid-term evaluation will be conducted to assess the capacity of each country to absorb additional technologies. The evaluation will examine, among others:

- The promulgation of HCWM and mercury reduction policies
- Successful implementation of BAT/BEP in the model facilities
- Proper operation and maintenance of the initial batch of non-incineration HCWM systems and mercury-free devices
- Safe handling, storage and disposal of healthcare mercury waste
- Effective national training programs

129. The evaluation will include recommendations for improvement. Additional HCWM systems and mercury-free devices will be allocated to countries based on the results of the evaluation and the allocation formula established in *Component 1*.

**Component 4b. Expand HCWM systems and the phase-out of mercury in the recipient countries and disseminate results in the Africa region [National and regional component]**

|                      |   |         |
|----------------------|---|---------|
| <b>Outcome 4b.1:</b> | <b>HCWM systems expanded to other facilities in the country</b><br>Output 4b.1: BAT/BEP and related infrastructures improved and expanded in the recipient countries                      |         |
| <b>Outcome 4b.2:</b> | <b>Country capacity to manage Mercury and to phase in Mercury-free devices improved</b><br>Output 4b.2: More Mercury devices phased out and stored and more Mercury-free devices deployed |         |
| <b>Outcome 4b.3:</b> | <b>National training expanded</b><br>Output 4b.3: More people trained in HCWM and Mercury   |         |
| <b>Outcome 4b.4:</b> | <b>Information disseminated at environment and health conferences in the region</b><br>Output 4b.4: Replication tools disseminated  |         |
| <b>GEF funding</b>   |   | 240,388 |
| <b>Co-financing</b>  |   | 749,882 |

130. Following the recommendations from the evaluation, each country will seek to improve its existing system. The work will expand to other healthcare facilities as the country receives additional non-incineration HCWM systems and mercury-free devices as determined in *Component 4a*. Similarly, the coverage of the national training program will be further expanded. A specific effort will be made so that the national health training curriculum incorporates the materials and recommendations of the project in terms of Mercury and Health care waste management. Participating staff from model HCFs will be requested to come and present their work in national health training centres.

131. Project results and replication tools will be disseminated nationally and regionally through existing conferences on environment and health, such as annual WHO and infection control conferences. In the final year, the national plans for HCWM and mercury phase-out will be reviewed and updated as needed.

**Component 5. Monitoring, learning, adaptive feedback, outreach, and evaluation**

|                   |   |
|-------------------|---|
| <b>Outcome 5:</b> | <b>Project's results sustained and replicated</b><br>Output 5.1: M&E and adaptive management applied to project in response to needs, mid-term evaluation findings with lessons learned extracted<br>Output 5.2: Lessons learned and best practices are disseminated at national, regional and global level |
|-------------------|---|

|              |         |
|--------------|---------|
| GEF funding  | 0       |
| Co-financing | 140,602 |

132. The component aims at monitoring and evaluation of results achieved to improve the implementation of the project and disseminate lessons learnt at national, regional and international level.

133. Mid-term and final evaluations will be completed and compiled into reports. Results and lessons learned will be extracted. Best practices will be shared nationally and regionally through a series of workshops and meetings. Reports and Research results will be disseminated globally.

134. Further details are provided in chapter VII Monitoring Framework and Evaluation.

**Project consistency with GEF strategic priorities and operations programs for the Chemicals and Waste focal area identified in GEF V**

135. The project is fully consistent with the GEF-5 Chemicals focal area strategy as follows;

Objective 1: *Phase-out POPs and reduce POPs releases*

Objective 3: *Pilot sound chemicals management and mercury reduction.*

The project will contribute to the achievement of GEF's main indicators under GEF-V as follows:

*Table 7: Consistency with GEF-V strategic priorities and operations programs*

| Relevant GEF-5 Strategy Indicator  | Project's contribution   |
|--|--|
| Objective 1: Phase out POPs and reduce POPs releases<br><b>Outcome 1.3: POPs releases to the environment reduced</b>   |  |
| <b>Indicator 1.3 Amount of unintentionally produced POPs releases avoided or reduced from industrial and non-industrial sectors; measured in grams TEQ against baseline as recorded through the POPs tracking tool</b> | Significant reductions of UPOPs will be achieved in each country by replacing incineration and open burning, commonly used now for treating healthcare waste, with non-incineration technologies. Stimulating the manufacture and distribution of these technologies will ensure their affordability and accelerate widespread adoption in the African region leading to greater UPOPs reductions in coming years. |

|  |  |
|--|--|
| <p><b>Outcome 1.5: Country capacity built to effectively phase out and reduce releases of POPs</b></p> <p><b>Indicator 1.5.2 Progress in developing and implementing a legislative and regulatory framework for environmentally sound management of POPs, and for the sound management of chemicals in general, as recorded through the POPs tracking tool</b></p> <p><b>Objective 3: Pilot sound chemicals management and mercury reduction</b></p> | <p>Country capacity will be built through the development or enhancement of national policies, regulations, and national plans relative to the management of both healthcare waste and mercury in healthcare; the strengthening of monitoring and enforcement; the development of a national training program; the demonstration of best environmental and management practices and technologies; and the national dissemination of project results.</p> |
| <p><b>Indicator 3.1 Countries implement pilot mercury management and reduction activities</b></p>  | <p>Country capacity will be built by developing and implementing mercury phase-out plans, storage of healthcare mercury waste, adopting standards and demonstrating use of mercury-free devices.</p>   |

**Incremental reasoning and expected global, national and local benefits**

136. Sub-Saharan countries face particular challenges because healthcare waste treatment technologies that meet BAT/BEP and fit local circumstances are simply not available at market prices that facilities or their Governments can afford. As a consequence, countries opt for low-cost medical waste incinerators, such as the “De Montfort incinerator”, which per tonne of healthcare waste burned release approximately 40 g-TEQ in air emissions and in ash residues.

137. Similarly, the use of mercury-containing devices in healthcare is widespread and due to limited availability of low cost mercury-free devices as well as unfamiliarity with their use, the breakage and improper disposal of mercury-containing devices results in significant mercury emissions.

138. Without funding from the Global Environment Facility (GEF), which will be applied towards a regional approach to create market demand and stimulate the growth of affordable non-incineration HCWM systems and mercury-free technology distributors and/or manufacturers in Africa, these conditions are very unlikely to change.

139. Without this project, Sub-Saharan countries will be unable to comply with the Stockholm Convention requirements to implement BEP/BAT healthcare waste treatment technologies to reduce releases of UPOPs and will be unable to transition away from mercury-containing



healthcare devices and improve dental amalgam waste management practices to reduce releases of Mercury.

140. As UPOPs and Mercury are global contaminants, a reduction in their release is not only beneficial for healthcare staff, patients, visitors and surrounding communities but also beneficial for global communities. Without the GEF project, risk groups and local, regional and global communities currently being exposed to UPOPs and mercury emissions released from the health care sector, as well as the global environment, will continue to remain at risk.

141. The initial capital investment costs and “start-up” costs for migrating from current unsafe and environmentally polluting practices to the use and application of non-incineration technologies and the phase-out of mercury containing devices cannot be covered by national budget allocations and contribution of healthcare facilities alone, due to severe budget constraints at national level in particular in Madagascar and Ghana. It is for this reason that funding from the GEF, in addition to support provided by the project’s co-financers, will be absolutely critical in putting in place environmentally sound practices for healthcare waste management and treatment.

142. Not only will project activities reduce and eliminate unintentional releases of UPOPs and Hg and support the country in meeting its obligations under the Stockholm Convention and the Minamata Convention, but also allow the countries to continue to improve HCWM practices in the future, which also has significant infection control benefits. By adopting best HCWM practices, hospital staff and patients, but also waste handlers, recyclers, and communities living near dumpsites, will be better safeguarded from potential infections, such as Hepatitis B, C and HIV.

143. The expected global, regional and local benefits of the project are many and varied. A local level, through good coordination between the project and project co-financers support pertaining to HCWM, the project will be able to provide direct support to 50 facilities (4 CTFs, 22 hospitals with an average number of beds of 150 and 24 health centres), amounting to a total of 36,900 beds. In combination with procurement and import restriction on certain PVC containing medical supplies for which cost-effective alternatives exist and improved recycling of disinfected waste materials (plastics), the project is expected to result in a reduction of UPOPs emissions of about 31.8 g-TEQ/yr.

144. By putting import restrictions on Mercury containing thermometers, phasing out the use of Mercury containing thermometers and adopting the use of Mercury-free thermometers in project supported healthcare facilities, the project could result in reducing Mercury emissions from the healthcare sector by 25.3 kg/yr (this is based on the assumption that such an import degree would be effective by the end of the GEF project).

#### **Socio-economic benefits including Gender dimensions**

145. Human and Environmental Health Benefits: The health sectors in Ghana is one of the main sources of UPOPs emission in the country (NIP, 2006) as well as a significant source of other toxic substances (e.g. mercury), impacting local and global human and environmental health.

The project will benefit healthcare workers (such as doctors, nurses and hospital cleaning staff), patients (through infection control as a result of good waste handling practices in HCFs) as well as waste handlers, collectors, recyclers and scavengers who face hazardous working conditions when in contact with infectious and toxic healthcare waste. Communities living close to waste disposal sites (municipal waste dumps and landfills) or incinerators will also benefit.

146. Besides reducing releases of UPOPs and Mercury, infectious waste, especially sharps, pose a risk to anyone who comes into contact with it, in particular when it is not properly managed. By adopting best HCWM practices, hospital staff and patients, but also waste handlers, recyclers, and communities living near dumpsites, will be better safeguarded from potential infections, such as Hepatitis B, C and HIV.

147. Improved HCWM practices in a health care facility, generally also reduce the occurrence of hospital-acquired infections (nosocomial infections), reducing human suffering as well as cost implications for the health care system.

148. Gender considerations: This GEF project emphasizes building awareness of the links between waste management and public health (including occupational exposures), with a special focus on the health implications of exposure to dioxins and mercury for vulnerable populations, such as women workers, pregnant women, and children. In addition to relevant national ministries, hospital, and health clinics, key partners in the program include health care professionals, waste workers, and providers of waste management services (among the most vulnerable sub-populations), as well as NGOs and civil society organizations operating in the area of health, women and the environment.

149. Women represent a large portion of workers employed in health care services (according to the U.S. Bureau of Labour Statistics, 73% of medical and health service managers are women<sup>23</sup>). Although similar statistics are not available for Ghana, Madagascar, Tanzania and Zambia, we can assume that the majority of healthcare workers are female. Therefore, the "nature" of the target beneficiaries instinctively lends itself to target women as key stakeholders.

150. In both developed and developing countries, many healthcare workers (such as nurses) receive low remuneration and face hazardous working conditions, including exposure to chemical agents that can cause cancer, respiratory diseases, neurotoxic effects, and other illnesses. As developing countries strengthen and expand the coverage of their health care systems, associated releases of toxic chemicals can rise substantially, magnifying the risks experienced by health care workers and the public.

151. As part of this project capacity building, training, curricula, etc. are developed and tailored to different training recipients within the healthcare sector, such as i) Trainers; ii) Medical staff, such as doctors, nurses and paramedical staff, iii) Hospital maintenance and sanitary staff iv) Administrators, etc. Training is also tailored and provided to support services linked to healthcare facilities, such as laundries, waste handling and transportation services, treatment

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<sup>23</sup> Forbes (June, 2012) available at: <http://www.forbes.com/sites/davechase/2012/07/26/women-in-healthcare-report-4-of-ceos-73-of-managers/>

facilities as well as workers in waste disposal facilities. At national level awareness on HCWM issues is created among the general public, patients and family with but also among decision makers at national, regional and district level that have significant influence on the development and approval of HCWM related budgets.

152. **Economic benefits:** A key aspect of the project will be to ensure that HCWM for the project countries will be developed in such a way to keep annual operating/recurring costs (disposable HCWM supplies, electricity, maintenance, transport, etc.) as low as possible, by i) improving waste segregation practices (which allows for composting, sale of disinfected recyclable materials, and reduces the costs for collection of residual waste), ii) by grouping of hospitals in “centralized treatment hubs”, maximizing the use of the waste treatment system, expanding its coverage, in combination with the most efficient transportation schedules and routes; iii) minimizing costs for HCWM related supplies, by using reusable items where feasible, iv) restricting the use of products with PVC or Mercury to avoid the need and costs to dispose of these later on; and v) establishing national non-incineration maintenance teams to ensure that maintenance costs can be kept low and hospitals have easy access to maintenance teams if they need them.

153. In particular the last point is important, as regular maintenance and national capacity for repair, in combination with budget allocation for HCWM at HCF and MoH level, are the single most important aspects for the sustainability of these type of projects.

154. Finally, project’s efforts will reduce the burden of Mercury and UPOPs exposure on human health and the environment both at national and international level, in turn reducing costs related to abatement activities, healthcare costs and other socio-economic costs resulting from Mercury and UPOPs exposure and pollution. The secondary impacts of the project – improved infection control – results in reduced occupational exposure, lowers the number of hospital acquired infections and reduces the risks from needle stick injuries. Otherwise such infections would cause human suffering and have significant cost implications for the national health care budget.

#### **Cost-effectiveness**

155. Project activities have been designed in such a way that cost-effectiveness should be achieved during project implementation. The implementation will follow standard UNDP rules and regulations and will assure that procurement processes will be open, transparent and competitive, and all larger contracts will be published internationally.

156. Following experiences from the UNDP/GEF/WHO Global Medical Waste project and to ensure that procurement practices are speedy and most cost effective, procurement of non-incineration technologies<sup>24</sup> for this project will be assumed by the UNDP Nordic Office (Procurement Support Unit – Health), which has extensive experience and expertise in the procurement of health sector supplies. In 2013, UNDP procured over 300 million US\$ in health

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<sup>24</sup> Technical specifications for the technologies will be drawn up by the project, in consultation and agreement with the national working group on injection safety and/or management of HCW, the project facilities under the leadership of the Ministry of Health and other key project stakeholders.

care supplies functioning as the principle recipient for the Global Fund in 26 countries worldwide. The UNDP Procurement Support Unit – Health, as global Fund principal recipient, has previously assumed procurement for HCWM related supplies and technologies for GF activities in a number of countries. In doing so it makes use of cost-effective long-term agreements with supplier, and well as cost reductions as a result of bulk purchasing.

157. The proposed Africa regional project builds upon and takes full advantage of the outcomes of the ongoing UNDP GEF global healthcare waste project. The approach of the proposed project incorporates lessons learned from the current project, including the setting up of more cost-effective central or cluster treatment facilities, regional procurement to ensure quality and reduce costs through bulk purchasing, and providing incentives to improve HCWM practices through additional technology allocation.

158. As part of the ongoing UNDP GEF project, cost data related to HCWM and treatment scenarios have been documented. The funding levels of each of the activities proposed as part of the regional Africa project have been based on actual costs of the ongoing project. The funding level of the proposed project is comparable and proportional to the level of activities planned while considering local conditions.

159. Finally, project results will be of interest to all Sub-Saharan African countries, as they face similar issues related to the environmentally sound management of healthcare waste as well as the phase-out of mercury containing devices. Therefore GEF funding is expected to contribute to strengthen HCWM management and disposal practices beyond the participating four countries.

#### **Coordination with other initiatives**

160. There are a number of initiatives in Ghana, as well as at regional and global level (past, ongoing and future) that are relevant for the proposed project components in Ghana. For an overview of these activities please refer to Table 9 in Annex I – Coordination Activities.

#### **Sustainability**

161. The most important aspects to ensure sustainability of project results for these types of projects are:

- Keeping the recurring and operating costs for HCWM as low as possible.
- Ensuring that healthcare facilities have available a budget (and budget line) specifically dedicated to HCWM so that they can purchase disposables (e.g. waste bins, liners, sharps boxes, PPE, etc.) as well as cover running and operating costs (e.g. training, electricity/fuel for operation of the treatment technologies, maintenance and repair of the technology, costs related to transport of waste, etc.) to be able to adhere to good HCWM practices.
- Contracting of healthcare waste management and also adopting commercial recycling of reusable components such as disinfected syringes, needles, PVC, etc.
- Easy access to capable maintenance and repair teams for health care waste treatment technologies.

- Medical staff and facility staff have the necessary knowledge and capacity on how to handle HCW.
- Minimizing access to Mercury and PVC containing medical devices and supplies to reduce the potential of UPOPs and Hg releases and the need for costly disposal / remediation.

162. Other project activities/components, which will contribute to ensure project sustainability, among else:

- Conducting a cost-benefit analysis on the economic implications of inadequate HCWM practices and using the outcomes of the study to raise the awareness of decision makers on the importance of HCWM, leading towards national, regional, district and facility budget allocations for HCWM.
- Instituting import restrictions on Mercury containing equipment and products, while at the same time conducting a study on staff preferences on cost-effective Mercury-free alternatives at some of the project HCFs, so that staff has a say in which devices they will use in the future. Mercury-free devices will be procured based on the outcomes of the staff-preference study.
- Instituting import restrictions on PCV containing products for which cost-effective alternatives exist and create the necessary awareness in advance to help decision making processes in this respect.
- Incorporating HCWM modules/training into teaching programmes of medical facilities, nursing schools, environmental health and/or hygiene schools (pre-service).
- HCWM training should be incorporated into the orientation programs for new staffs as well as regular “refresher” training at HCFs to ensure HCWM practices are kept at a sufficiently high level.
- Use of reusable HCWM items (e.g. autoclavable waste and sharps containers) where possible.
- Introduction of cost-sharing agreements between HCFs (which send their waste for treatment elsewhere) and HCW treatment hubs (which receive HCW from other HCFs for treatment at their facility) to ensure long-term sustainability.
- Promotion of waste reduction and segregation efforts focussing on opportunities like composting and plastics recycling, to keep residual waste disposal costs at a minimum and create opportunities for the resale of plastic waste fractions and compost.
- Publication and dissemination of lessons-learned, in particular with respect to the costs incurred and saving achieved by hospitals through switching to autoclaving, recycling of plastics, composting, etc.
- Establishing (in collaboration with distributors) national maintenance and repair team to provide easy access to facilities when they require support. The project will also ensure that engineering teams of larger hospitals and technology operators are duly trained in day-to-day maintenance and simple repairs. This shall be done with technical support from repair and maintenance team from the manufacturers and distributors of equipment.
- As much as possible, agreements will be made with manufacturers and distributors to ensure the availability of parts and technical support for repair and maintenance of

technologies for an extended period of time after equipment procurement (example: insurance against break down for 5 years beyond the project's duration, and maintenance support for a period of 5 years after equipment installation).

- The teams of national and regional experts will be encouraged to form a network for the purpose of information exchange, professional development, and assisting the countries in the region.
- Ensure the adoption and approval of an updated HCWM strategies, policies, plans and guidelines at national level, which will allow for the use of non-incineration technologies as one of the options for healthcare waste treatment.
- To ensure sustainability of the project at the end of the funding period, an exit plan or strategy shall be developed in consultation with stakeholders during the inception activities.

### **Replicability**

163. A regional procurement approach (to equip 24 health centres, 14 hospitals and four central facilities, corresponding to healthcare waste from a total of about 35,200 hospital beds) will be employed to create favourable market conditions, market demand and stimulate the growth of non-incineration HCWM systems and mercury-free technology distributors or manufacturers in Africa.

164. The GEF/UNDP Global Medical Waste project, with the support of Health Care Without Harm and FHI360, has been working with manufacturers in South Africa, Tanzania and other countries to develop low-cost non-incineration technologies and related equipment. These manufacturers will be encouraged to participate in the project's open competitive bidding process.

165. Project results and replication tools will be disseminated nationally and regionally through existing conferences on environment and health, such as the World Health Assembly, Annual Meetings of the Safe Injection Global Network (SIGN), Meetings of Partners on the Implementation of the Libreville Declaration on Health and Environment in Africa, as well as other events, through the organization of side-events and presentations by project partners such as WHO and Healthcare Without Harm.

166. The teams of national and regional experts, making use of the Healthcare Without Harm and Cisco-supported Media Platform, will be encouraged to form a network for the purpose of information exchange, professional development, and assisting the countries in the region. Furthermore, information on project activities, reports shall be made available to other implementing bodies to be posted at their websites to disseminate the outcomes of the project.

167. The replication effect (indirect effect) of the proposed project can prove to be very large, not only because of the dissemination of project results and regional awareness building, but most importantly because project activities will lead to the availability of low-cost non-incineration HCWM systems and Mercury-free technologies in Sub-Saharan Africa.

168. The size of the initial equipment purchase and the future demand established through awareness creation and information dissemination at national and regional level among HCFs and central treatment facilities will encourage manufacturers and distributors to make these technologies available and affordable in the region. Healthcare facilities and central treatment facilities throughout Sub-Saharan Africa will then have access to manufacturers, distributors and maintenance service providers of low cost non-incineration technologies and Mercury-free devices<sup>25</sup> (as well as technical assistance from a network of national and regional experts). This effect can entirely change the current market situation, which at present remains one of the most important barriers for the adoption of BAT.

#### **Country Ownership, country eligibility and country drivenness**

169. As elaborated upon in Section II – Strategy, the participating project countries are signatories to the Stockholm Convention which calls for “priority consideration” of alternative technologies that avoid the formation of dioxins and furans, such as non-incineration technologies identified in the BAT/BEP guidelines.

170. The countries’ National Implementation Plans (NIPs) identify medical waste incineration as a significant source of dioxins/furans and Governments plan to apply BAT/BEP guidelines in keeping with Stockholm Convention obligations.

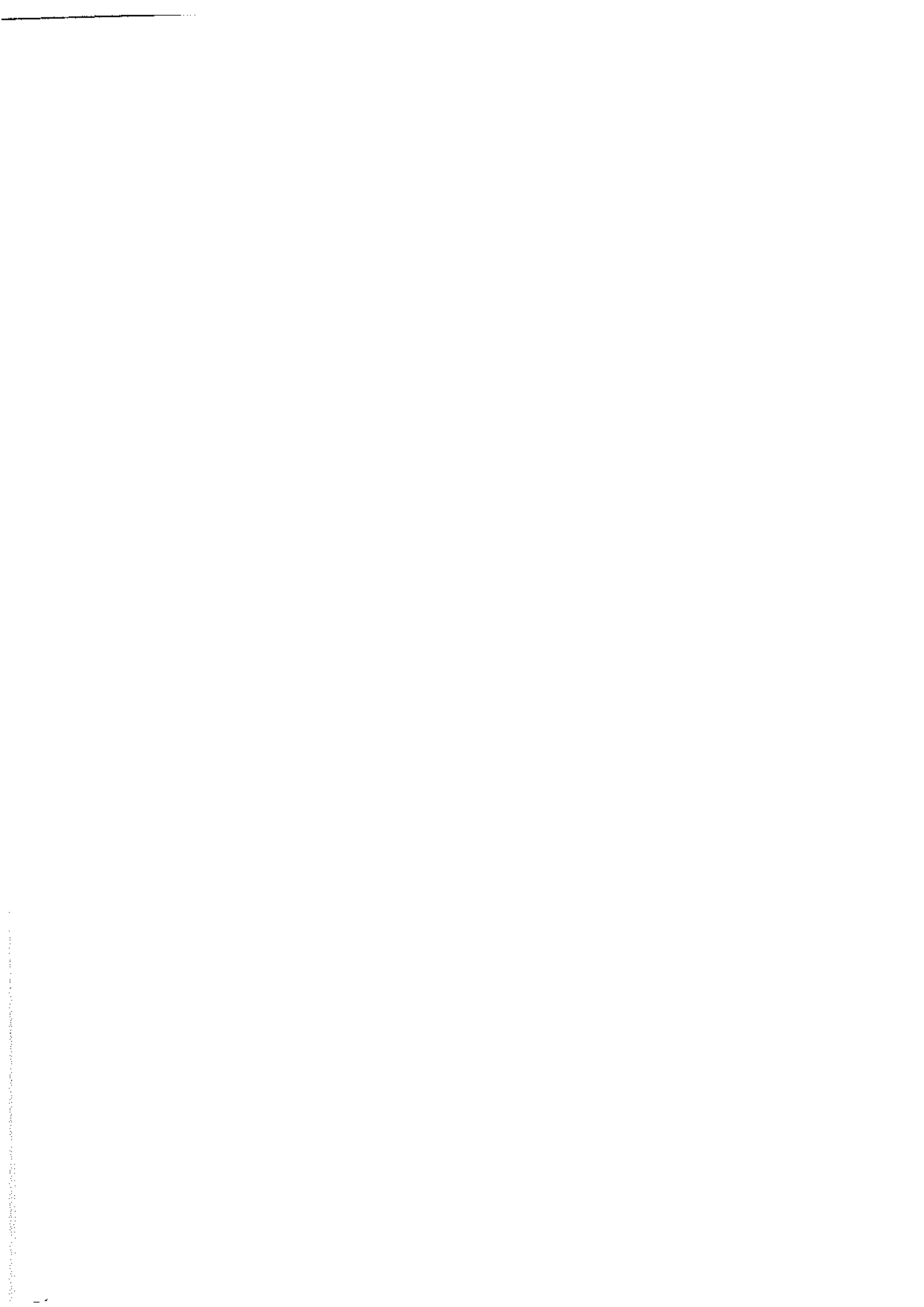
171. In the case of Ghana, national objectives and activities related to UPOPs reduction and medical waste disposal/incineration has been described in detail in its 2007 NIP (see also Section II – Strategy).

172. All the four participating project countries (Ghana, Madagascar, Tanzania and Zambia) have signed the Minamata Convention on Mercury.

173. Even though the government of the four countries dispose of limited resources, the amount of effort towards improving the management of healthcare wastes over the past few years clearly demonstrates their commitment towards improving the current situation (see table 10).

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<sup>25</sup> With equivalent accuracy and comparable clinical utility of the substituted product. See WHO (2011) Replacement of mercury thermometers and sphygmomanometers in health care. Available at: [http://www.who.int/water\\_sanitation\\_health/publications/2011/mercury\\_thermometers/en/index.html](http://www.who.int/water_sanitation_health/publications/2011/mercury_thermometers/en/index.html)





### III. PROJECT RESULTS FRAMEWORK

| <p><b>This project will contribute to achieving the following Country Programme Outcome as defined in CPAP or CPD:</b></p> <ul style="list-style-type: none"> <li><b>Ghana: (same as 2012 – 2016 UNDAF outcomes) Outcome 5:</b> An additional 2.5% of the population have sustainable use of improved drinking water and sanitation services and practice the three key hygiene behaviours by 2016. <b>Outcome 11:</b> Ministries, Department Agencies, (MDAs), Local Governments and CSOs have effectively developed, funded, coordinated and implemented national and sectoral policies, plans and programmes aimed at reducing poverty and inequalities, and promote inclusive socio-economic growth by 2016.</li> </ul> <p><b>Country Programme Outcome Indicators:</b></p> |  |  |  |   |  |
|---|--|--|--|---|--|
| <p><b>Primary applicable Key Environment and Sustainable Development Key Result Area (same as that on the cover page, circle one):</b></p>  |  |  |  |   |  |
| <p><b>Applicable GEF Strategic Objective and Program:</b> GEF-5 Chemicals Focal Area:</p>   |  |  |  |   |  |
| <p><b>Objective 1:</b> Phase-out POPs and Reduce POPs Releases</p>  |  |  |  |   |  |
| <p><b>Objective 3:</b> Pilot Sound Chemicals Management and Mercury Reduction</p>   |  |  |  |   |  |
| <p><b>Applicable GEF Expected Outcomes:</b></p>   |  |  |  |   |  |
| <p><b>Outcome 1.3:</b> POPs Releases to the Environment Reduced</p>   |  |  |  |   |  |
| <p><b>Outcome 1.5:</b> Country Capacity Built to Effectively Phase-out and Reduce Releases of POPs</p>  |  |  |  |   |  |
| <p><b>Outcome 3.1:</b> Country Capacity Built to Effectively Manage Mercury in Priority Sectors</p>   |  |  |  |   |  |
| <p><b>Applicable GEF Outcome Indicators:</b></p>  |  |  |  |   |  |
| <p><b>Indicator 1.3:</b> Amount of un-intentionally produced POPs releases avoided or reduced from industrial and non-industrial sectors; measured in grams TEQ against baseline as recorded through the POPs tracking tool</p>   |  |  |  |   |  |
| <p><b>Indicator 1.5.2:</b> Progress in developing and implementing a legislative and regulatory framework for environmentally sound management of POPs, and for the sound management of chemicals in general, as recorded through the POPs tracking tool</p>  |  |  |  |   |  |
| <p><b>Indicator 3.1:</b> Countries implement pilot Mercury management and reduction activities</p>  |  |  |  |   |  |
| Project Objective <sup>26</sup>   | Indicator  | Baseline   | Targets End of Project   | Source of verification  | Risks and Assumptions  |
| Phase out POPs and reduce POPs releases   | Non-incineration and Mercury-free technologies introduced in African countries.<br><br>Affordable non-incineration technologies available in | In 2012, there were approximately 115 non-incineration HCW technologies installed throughout Africa.<br><br>In the project countries, 3 working hydroclaves have been installed in Ghana | Non-incineration technologies and Mercury-free medical devices introduced at 4 central treatment facilities, 22 hospitals and 24 health centres. | Photos of HCWM supplies and installed treatment technologies available from all project HCFs.<br>Documents on procurements processes, weigh | Lack of effective maintenance mechanism could decrease the achievement of the project objective and the demonstration purpose. |

<sup>26</sup> Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR

|  |   |  |  |  |  |                             |   |
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| Pilot Sound Chemicals Management and Mercury Reduction | the African region.   | (April 2014).<br><br>Affordable non-incineration technologies are not available to African HCFs. | UPOPs releases from the health sector reduced or avoided.  | UPOPs baseline: <u>Ghana</u> : 19.8 g-TEQ/yr (pre-selected hospitals)  | Amount of UPOPs releases from HCW incinerators reduced by 19.8 g-TEQ/yr. | bills of supplied equipment | Existing manufacturers with limited distribution networks and experience in the Africa market may not be willing to reduce prices sufficiently. |
| Mercury releases from the health sector reduced.       | Mercury baseline: <u>Ghana</u> : 8.2 kg/yr (pre-selected hospitals) | Amount of Mercury releases from the health sector reduced by 8.2 Kg/yr.                          | The I-RATs that will be conducted for each of the project's HCFs before project interventions will take place will provide insight in the amount of UPOPs produced and Mercury released on a yearly basis. | <p>Assumption:<br/>Ministries of Health and model healthcare facilities would be willing to start phasing out low technology incinerators and replacing them with non-incineration alternatives.</p> <p><b>Risk: Low</b></p> <p>Assumption:<br/>Ministries of Trade would be willing to introduce import restriction on Mercury containing medical devices.</p> <p><b>Risk: Low</b></p> <p>Assumption:</p> |  |                             |   |

|   |  |  |  |   |  |
|---|--|--|--|---|--|
| <p>Ministries of Health and model healthcare facilities would be willing to start phasing out Hg-containing thermometers and replacing them with Mercury-free alternatives.</p> <p><b>Risk: Low</b></p>     | <p>Guidance on "Measurements and Documentation"<sup>28</sup> as developed under the Global Medical Waste Project will be used to provide for a before and after snap-shot.</p> | <p>Completed draft of standards, revision or adoption of a national policy, revision of national implementation plan, strategy, and/or guidelines in Ghana</p> | <p>The regulatory, policy framework not current, national implementation plan not operational and No standard exist in medical waste management Ghana.</p> | <p>Country capacity built to effectively phase out and reduce releases of POPs</p>  | <p>Ministries of Health and model healthcare facilities would be willing to start phasing out Hg-containing thermometers and replacing them with Mercury-free alternatives.</p> <p><b>Risk: Low</b></p> <p><b>Assumption:</b> Ministries of Health, MESTI, MLGRD, HCFs and National expert available for capacity building and are willing to revise the stated documents.</p> <p><b>Risk: Low</b></p> |
| <p><b>COMPONENT 1: DISSEMINATE TECHNICAL GUIDELINES, ESTABLISH MID-TERM EVALUATION CRITERIA AND TECHNOLOGY ALLOCATION FORMULA, AND BUILD TEAMS OF NATIONAL EXPERTS ON BAT/BEP AT THE REGIONAL LEVEL</b></p> |  |  |  |   |  |
| <p><b>Outcome 1.1: Technical guidelines, evaluation criteria and allocation formula adopted.</b></p>  | <p>Mid-term evaluation criteria and formula for the allocation of technologies among countries available.</p>  | <p>Mid-term evaluation criteria and formula for the allocation of technologies among countries available.</p>  | <p>Mid-term evaluation criteria and formula for the allocation of technologies among project countries not in place.</p>                                   | <p>First Regional Conference organized. Evaluation criteria and allocation of technologies among project countries agreed upon.</p> | <p>Signed meeting notes from the first regional conference.</p> <p><b>Assumption:</b> Government representatives of the project countries reach an agreement on the evaluation criteria and allocation of technologies.</p> <p><b>Risk: Low</b></p>  |
| <p><b>Outcome 1.2: Country capacity to assess, plan, and implement</b></p>  | <p>A teams of 4 national</p>   | <p>Some knowledge on Mercury and UPOPs</p>   | <p>4 national experts trained in non-</p>  | <p>Certificates of training completion</p>  | <p><b>Assumption:</b> national experts</p>   |

<sup>28</sup> Not yet available on-line.

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| <p>HCWM and the phase-out of Mercury in healthcare built.</p>   | <p>experts (16 in total for the four countries) trained at regional level</p>  | <p>releases from the health sector built during the PPG phase.</p>  | <p>incineration HCWM systems, policies, waste assessments, UNDP GEF and WHO tools, national planning, BAT/BEP guidelines, Mercury phase-out, international standards, and other technical guidelines.</p> <p>Master trainers trained in content, effective teaching methods, evaluation tools, and Training of Trainers programs.</p> | <p>and attendance sheets of training sessions.</p>   | <p>trained by the project will remain supporting the project throughout its entire duration.</p> <p><b>Risk: Low</b></p> <p><b>Assumption:</b><br/>Sufficient national experts interested and available at national level to be trained in HCWM.</p> <p><b>Risk: Low</b></p> |
| <p><b>COMPONENT 2: HEALTHCARE WASTE NATIONAL PLANS, IMPLEMENTATION STRATEGIES, AND NATIONAL POLICIES IN EACH RECIPIENT COUNTRY</b></p>  |  |   |   |  |  |
| <p><b>Outcome 2.1:</b> Institutional capacities to strengthen policies and regulatory framework, and to develop a national action plan for HCWM and Mercury phase-out enhanced.</p> | <p>Number of national HCWM strategies, policies, action plans as well as number of drafts for HCWM related standards and guidelines available.</p> | <p>In each of the project countries the baseline pertaining to the HCWM policy and regulatory framework is different. For Ghana the situation is summarized on page 20 in the section "National Policy regulatory and legal Framework on HCWM in Ghana"</p> | <p>4 national experts and participating Institutions built to develop the national HCWM strategies, policies, action plans as well as number of drafts for HCWM related standards and guidelines</p>  | <p>Draft of National HCWM Strategies, policies, plans as well as drafts for HCWM related standards and guidelines available.</p> | <p><b>Assumption:</b> The project has adequately trained experts that are able to develop national HCWM Strategies, policies, plans as well as drafts for HCWM related standards and guidelines.</p> <p><b>Risk: Low</b></p>   |

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| <p><b>Outcome 2.2:</b> National plan with implementation arrangements adopted.</p>   | <p>Number of National Action Plans for project implementation available.</p> | <p>Draft National Action Plans for project implementation available.<br/>Pre-selection of HCFs has already taken place.</p> | <p>1 National Action Plans for each project country developed (including the selection of up to 1 central or cluster treatment facility, 2 hospitals and 3 small rural health centres as models)</p> | <p>Action Plans available.<br/>MOUs with selected HCFs and central/ cluster facilities<br/>Results of I-RAT assessments, staff preferences on non-Hg devices; HCWM policies and plans</p> | <p><b>Assumption:</b><br/>National Government counterparts and health care facilities reach an agreement on which ones will be supported in the project's 1<sup>st</sup> half and which ones in the 2<sup>nd</sup> half.<br/><b>Risk: Low</b><br/><b>Assumption:</b> HCFs are willing to sign MOUs and the MOU signature process doesn't slow down the launch of HCF HCWM activities.<br/><b>Risk: Low</b><br/><b>Assumption:</b> All project HCFs are willing to participate in baseline assessments and are open to sharing information related to their current HCWM practices.<br/><b>Risk: Low</b></p> |
| <p><b>COMPONENT 3A: MAKE AFFORDABLE NON-INCINERATION HCWM SYSTEMS AND MERCURY-FREE DEVICES THAT CONFORM TO BAT AND INTERNATIONAL STANDARDS</b></p>             |  |   |  |   |   |
| <p><b>Outcome 3.a.1:</b> Favourable market conditions created for the growth in the African region of affordable technologies that meet BAT guidelines and</p> | <p>Number of Non-incineration HCWM systems and Hg free devices procured.</p> | <p>3 hydroclave was operational in Ghana (April 2014).</p>  | <p>Non-incineration HCWM systems and Mercury-free devices for at least 12 health centres, 8 hospitals and</p>  | <p>Photos of procured Mercury-free devices and non-incineration technologies.</p>   | <p><b>Assumption:</b><br/>Procurement of non-incineration technologies through UNDP.</p>  |

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| international standards. | Number of HCWM systems installed and Hg-free devices distributed. | Number of mercury free equipment to be determined after selection of HCFs. | 4 central or cluster facilities procured.<br>Initial set of non-incineration HCWM systems and Mercury-free devices given to 3 health centres, up to 2 hospitals and 1 central or cluster treatment facility in Ghana. | Photos of Mercury-free devices in use and non-incineration technologies installed.<br>Distribution list and waybills,<br>Documents on procurement processes (advert, bidders, evaluation criteria, minutes) | PSO-Health doesn't run into major challenges.<br><b>Risk: medium</b><br><b>Assumption:</b> A sufficiently large offer of Mercury-free devices is available at national level to allow procurement processes to run smoothly.<br><b>Risk: Low</b> |
|--------------------------|---|--|---|---|--|

**COMPONENT 3B: DEMONSTRATE HCWM SYSTEMS, RECYCLING, MERCURY WASTE MANAGEMENT AND MERCURY REDUCTION AT THE MODEL FACILITIES, AND ESTABLISH NATIONAL TRAINING INFRASTRUCTURES**

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| <b>Outcome 3.b.1: HCWM systems, recycling, Mercury waste management and Mercury reduction at the model facilities demonstrated and national training infrastructures established [National component]</b> | Number of project HCFs that have introduced BEP.<br><br>Number of HCF staff trained in BEP & BAT.<br><br>Number of project HCFs that have operational BAT.<br><br>Number of project HCFs that have recycling programmes in place.<br><br>No. of project countries that have storage sites for phase-out Hg-containing devices. | Three (3) BAT in 3 pre-selected HCFs and none (0) BEP in place at most of the model HCFs.<br><br>No recycling programmes in place at any of the HCFs.<br><br>No storage sites for Mercury or Medical devices containing Mercury available in any of the project countries.<br><br>In Ghana, some project HCFs already uses some Mercury-free medical devices, but none of the pre-selected HCFs is Mercury-free. | <ul style="list-style-type: none"> <li>HCF staff trained in BEP &amp; BAT.</li> <li>BAT/BEP implemented at all (24) the model facilities.</li> <li>Recycling programs started in each of the model facilities.</li> <li>Safe storage sites for Mercury containing medical devices established for each of the project countries.</li> <li>Mercury-free devices used in each of the model facilities.</li> <li>At least one national HCWM training programme established in each of</li> </ul> | <ul style="list-style-type: none"> <li>Certificates of training completion and attendance sheets of training sessions.</li> <li>Monitoring and Progress reports</li> <li>HCF visit reports</li> <li>Photos of recycling practices.</li> <li>Photos of installed and operational technologies.</li> <li>Photos of Mercury-free devices in use.</li> </ul> | <b>Assumption:</b><br>Treatment hubs and satellites located in the zone supported by the project are willing to sign cost-sharing agreements for the treatment of their infectious waste.<br><br><b>Risk: Medium</b><br><br><b>Assumption:</b> As co-financing, facilities allocate adequate storage space for interim Hg-waste storage, appoint waste management committee members, and allocate staff time to participate in training on |
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| <p>Number of Mercury-free project HCFs.</p> <p>Number of institutions that offer HCWM training/certificate courses.</p>  | <p>In Ghana, training programme for waste management exists, but training programmes for HCWM need to be established/improved.</p>                           | <p>the project countries.</p> | <p>BEP/BAT, recycling and the use of Hg-free alternatives and non-incineration technologies.</p> <p><b>Risk: Low</b></p> <p><b>Assumption:</b> The Ministry of Health and national medical training institutions are open and willing to revise the national training modules.</p> <p><b>Risk: Medium</b></p> |  |
| <p><b>COMPONENT 4A: EVALUATE THE CAPACITIES OF EACH RECIPIENT COUNTRY TO ABSORB ADDITIONAL NON-INCINERATION HCWM SYSTEMS AND MERCURY-FREE DEVICES AND DISTRIBUTE TECHNOLOGIES BASED ON THE EVALUATION RESULTS AND ALLOCATION FORMULA</b></p> |  |                               |   |  |
| <p><b>Outcome 4.a.1:</b> Capacities of project countries to absorb additional technologies evaluated.</p> <p><b>Outcome 4.a.2:</b> Additional technologies distributed depending on evaluated capacities for absorption.</p>                 | <p>Evaluation report (including recommendations for each project country and HCF) available.</p> <p>Number of HCWM systems and Hg free devices procured.</p> | <p>Not applicable</p>         | <p>Evaluation conducted of all the 4 project countries and all the HCFs, which have received project support.</p> <p>Additional HCWM systems and Mercury-free devices procured and distributed, based on the evaluation results and allocation formula.</p>   | <p><b>Assumption:</b> One or more of the project countries are sufficiently advanced by project mid-term, that they are ready to receive additional support, technologies and devices.</p> <p><b>Risk: Low</b></p> |
| <p><b>COMPONENT 4B: EXPAND HCWM SYSTEMS AND THE PHASE-OUT OF MERCURY IN THE RECIPIENT COUNTRIES AND DISSIMINATE RESULTS IN THE AFRICAN REGION</b></p>  |  |                               |   |  |
| <p><b>Outcome 4.b.1:</b> HCWM systems expanded to other facilities in the country</p>  | <p>Number of HCFs supported in addition to the initial set of HCFs.</p>  | <p>Not applicable</p>         | <p>14 additional HCFs with an average of 150 beds or a total of about 2,100 beds supported as well as an additional 12 rural health centres.</p>  | <p><b>Assumption:</b> Sufficient HCFs are eager to participate in the project's second phase.</p> <p><b>Risk: Low</b></p>  |

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| <p><b>Outcome 4.b.2:</b> Country Capacity to Manage Mercury and to phase-in Mercury-free devices improved.</p> | <p>Number of Mercury-free project HCFs in addition to the initial set.</p>               | <p>Based on the report of mid-term evaluation</p> | <p>Based on the report of mid-term evaluation</p>   | <p>Certificates of training completion and attendance sheets of training sessions.</p> |  |
| <p><b>Outcome 4.b.3:</b> National Training Expanded.</p>   | <p>Number of people trained in addition to the initial set of trained HCF personnel.</p> | <p>Based on the report of mid-term evaluation</p> | <p>HCF staff of the additional HCFs trained in BEP/BAT.</p>   | <ul style="list-style-type: none"> <li>List and copy of presentations</li> </ul>       | <p><b>Assumption:</b> Sufficient travel budget is available to allow for participation in such meetings by the project international or national consultants/experts.<br/>Risk: Medium</p> |
| <p><b>Outcome 4.b.4:</b> Information disseminated at environment and health conferences in the region.</p>     | <p>List of environment and health conferences in the region</p>                          |   | <p>At least two conferences<br/>Reports, findings and success stories available at both international and local partners' websites.</p> |  |  |

**COMPONENT 5: MONITORING, ADAPTIVE FEEDBACK, OUTREACH AND EVALUATION**

|  |   |                       |   |  |  |
|--|---|-----------------------|---|--|--|
| <p><b>Outcome 5.1</b> Project's results sustained and replicated</p> | <p>Number of high quality monitoring and evaluation documents prepared during project implementation.</p> | <p>Not applicable</p> | <p>4 Quarterly Operational Reports submitted to UNDP each year<br/>1 annual APR/PIR submitted to UNDP each year.<br/>1 Mid-term project review. M&amp;E results and insights are applied to provide feedback to the project coordination process, and have informed/redirected the design and implementation of the</p> | <p>4 QORs available for each project year.<br/>APR/PIR available for each project year.<br/>Mid-Term Evaluation Report available.<br/>Mid-Term Evaluation Report available.<br/>Lessons-learned from the project easily accessible</p> | <p><b>Assumptions:</b> It is assumed that the regional and national project technical coordinators will prepare all the reports that are required by the GEF and UNDP.<br/>Risk: Low</p> |
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|  |  |  | <p>second phase of the project.</p> <p><u>The MTE will inform on how many additional technologies would have to be purchased and how much additional capacity building would have to be carried out in the second half of the project.</u></p> <p>1 Final evaluation. MTE and FE must include a lessons learned section and a strategy for dissemination of project results.</p> <p>Lessons learned and best practices are accumulated, summarized and replicated at the country level.</p> | <p>and searchable on-line.</p> <p>Project related documentation, photos and videos posted on the project's website and Facebook page.</p> <p>Reports submitted to UNDP</p> |  |
|--|--|--|---|--|--|

#### IV. TOTAL BUDGET AND WORKPLAN

*Note: As mentioned throughout the project document, regional project components will be implemented by the UNDP Istanbul Regional Hub while Ghana relevant national project components will be implemented in Ghana through the NIM modality.*

Please see below the national budget (NIM implementation with the Ministry of Health).

| <b>Award ID:</b>  |   | 00089426  |            |                           |                          |                     |                     |                     |                     |             |                  |
|---|---|---|------------|---------------------------|--------------------------|---------------------|---------------------|---------------------|---------------------|-------------|------------------|
| <b>Award Title:</b>   |   | GHANA: Reducing UPOPs and Mercury Releases from the Health Sector in Africa |            |                           |                          |                     |                     |                     |                     |             |                  |
| <b>Business Unit:</b>   |   | GHAI0   |            |                           |                          |                     |                     |                     |                     |             |                  |
| <b>Project Title:</b>   |   | GHANA: Reducing UPOPs and Mercury Releases from the Health Sector in Africa |            |                           |                          |                     |                     |                     |                     |             |                  |
| <b>Project ID: PIMS no.4865</b>   |   | 00095673  |            |                           |                          |                     |                     |                     |                     |             |                  |
| <b>Implementing Partner</b>   |   | Ministry of Health  |            |                           |                          |                     |                     |                     |                     |             |                  |
| GEF Outcome/Atlas Activity  | Responsible Party/Implementing Agent      | Fund ID   | Donor Name | Atlas Budget Account Code | ATLAS Budget Description | Amount Year 1 (USD) | Amount Year 2 (USD) | Amount Year 3 (USD) | Amount Year 4 (USD) | Total (USD) | See Budget Note: |
|   |   |   |            |                           |                          |                     |                     |                     |                     |             |                  |
| Component 1<br>Disseminate technical guidelines, establish mid-term evaluation criteria and technology allocation formula, and build teams of national experts on BAT/BEP at the regional level | MoH                                       | 62000   | GEF        | 71300                     | Local Consultants        | \$19,162            | \$0                 | \$0                 | \$0                 | \$19,162    | 1                |
|   |   |   |            |                           |                          | Total Component 1   | \$19,162            | \$0                 | \$0                 | \$0         | \$19,162         |
| Duration of 4 months  | Component 2<br>Health Care Waste National | MoH   | 62000      | GEF                       | Local Consultants        | \$38,324            | \$57,485            | \$0                 | \$0                 | \$95,809    | 2                |
|   |   |   |            |                           |                          | Travel              | \$3,500             | \$0                 | \$0                 | \$0         | \$3,500          |

|  |  |  |  |  |       |                                     |                 |                  |                 |            |                  |    |
|--|--|--|--|--|-------|-------------------------------------|-----------------|------------------|-----------------|------------|------------------|----|
| plans, implementation strategies, and national policies in each recipient country  |  |  |  |  | 75700 | Training, Workshops and Conferences | \$6,500         | \$0              | \$0             | \$0        | \$6,500          | 4  |
| <i>Implemented 5 months after Completion of Component 1.</i>                       |  |  |  |  |       | <b>Total Component 2</b>            | <b>\$48,324</b> | <b>\$57,485</b>  | <b>\$0</b>      | <b>\$0</b> | <b>\$105,809</b> |    |
| <b>Component 3B<sup>29</sup></b>   |  |  |  |  | 71300 | Local Consultants                   | \$0             | \$172,456        | \$19,162        | \$0        | \$191,618        | 5  |
| Demonstrate HCWM systems, recycling, Mercury waste management and Mercury          |  |  |  |  | 71600 | Travel                              | \$0             | \$5,000          | \$0             | \$0        | \$5,000          | 6  |
| reduction at the model facilities, and establish national training infrastructures |  |  |  |  | 75700 | Training, Workshops and Conferences | \$0             | \$47,500         | \$0             | \$0        | \$47,500         | 7  |
| <i>Implemented 10 months after completion of component 2.</i>                      |  |  |  |  |       | <b>Total Component 3B</b>           | <b>\$0</b>      | <b>\$224,956</b> | <b>\$19,162</b> | <b>\$0</b> | <b>\$244,118</b> |    |
| <b>Component 4B<sup>30</sup></b>   |  |  |  |  | 71300 | Local Consultants                   | \$0             | \$0              | \$136,457       | \$74,431   | \$210,888        | 8  |
| [National and regional component]  |  |  |  |  | 71600 | Travel                              | \$0             | \$0              | \$8,500         | \$0        | \$8,500          | 9  |
| Expand HCWM  |  |  |  |  | 75700 | Training, Workshops and Conferences | \$0             | \$0              | \$21,000        | \$0        | \$21,000         | 10 |

<sup>29</sup> Note that Component 3A - Make available in the region affordable non-incineration HCWM systems and Mercury-free devices that conform to BAT and international standards - Implemented 15 months after completion of component 1 - is a Regional component (only) with no national budget and is thus not indicated in this budget table.

<sup>30</sup> Note that Component 4A - Evaluate the capacities of each recipient country to absorb additional non-incineration HCWM systems and Mercury-free devices and distribute technologies based on the evaluation results and allocation formula- Implemented 17 months after completion of component 3 - is a Regional component (only) with no national budget and is thus not indicated in this budget table.

|  |                           |       |     |                        |                        |          |           |           |          |           |         |    |
|--|---------------------------|-------|-----|------------------------|------------------------|----------|-----------|-----------|----------|-----------|---------|----|
| Project Management Costs (PMC) <sup>31</sup> | MoH / UNDP Country Office | 62000 | GEF | 74598                  | Miscellaneous Expenses | \$1,531  | \$1,531   | \$1,531   | \$1,531  | \$1,531   | \$6,124 | 11 |
|  |                           |       |     | Total Management costs | \$1,531                | \$1,531  | \$1,531   | \$1,531   | \$6,124  |           |         |    |
| <b>TOTAL NIM COMPONENT</b>                   |                           |       |     |                        |                        |          |           |           |          |           |         |    |
|  |                           |       |     |                        |                        | \$69,017 | \$283,972 | \$186,650 | \$75,962 | \$615,601 |         |    |

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| <b>See Budget Note:</b> |  |  |  |  |  |  |  |  |  |  |  |  |
| 1                       | <b>Per country (1 month):</b><br>1 NTC (National Technical Coordinator); 1 NAA (National Administrative Assistant); 3 TAs (Technical Advisors) - all part-time                   |  |  |  |  |  |  |  |  |  |  |  |
| 2                       | <b>One per country of each (5 months) in each of the countries:</b> 1 NTC (National Technical Coordinator); 1 NAA (National Administrative Assistant); 3 TA (Technical Advisors) |  |  |  |  |  |  |  |  |  |  |  |
| 3                       | <b>Local travel in each of the project countries for the:</b> NTC - (National technical coordinator) and 3 TAs.  |  |  |  |  |  |  |  |  |  |  |  |
| 4                       | <b>Local meetings including for each of the project countries:</b><br>1 NPSC - National Project Steering Committee<br>Consultations (4x over the duration of the project)        |  |  |  |  |  |  |  |  |  |  |  |
| 5                       | <b>Per Country (10 months - part-time):</b> 1 NTC - (National technical coordinator); 1 NAA (National Administrative Assistant) and 3 TAs  |  |  |  |  |  |  |  |  |  |  |  |
| 6                       | Local travel   |  |  |  |  |  |  |  |  |  |  |  |

<sup>31</sup> Note that Component 5 (Monitoring, learning, adaptive feedback, outreach, and evaluation) is a Regional component (only) with no national budget and is thus not indicated in this budget table.

|    |  |
|----|--|
| 7  | <b>Per country:</b><br>2 Master trainings<br>5 Training workshops<br>1 National Project Steering Committee Meetings  |
| 8  | <b>Per Country (all part time):</b> 1 NTC - (National technical coordinator) - 16 months; 1 NAA (National Administrative Assistant) - 16 months and 3 TAs (TA 1 and 2 11 months and TA 3 4 months) |
| 9  | Local Travel   |
| 10 | <b>Per country:</b><br>3 Training workshops<br>2 National Project Steering Committee Meetings  |
| 11 | Direct Project Support Costs calculated based on number of contracts, hires, payments etc.: 6,124 US\$/country, as per Annex IX.   |



## V. MANAGEMENT ARRANGEMENTS

174. In Ghana, National Project Components (as indicated in the project document), will be implemented by the Ghana Ministry of Health as the **Implementing partner**, according to UNDP NIM implementation guidelines and rules.

175. Being part of a regional project means there is significant scope for many activities to be coordinated at the regional level thereby enabling economies of scale, which can reduce costs and increase effectiveness (especially in terms of knowledge generation and training). This is presented throughout this Project Document.

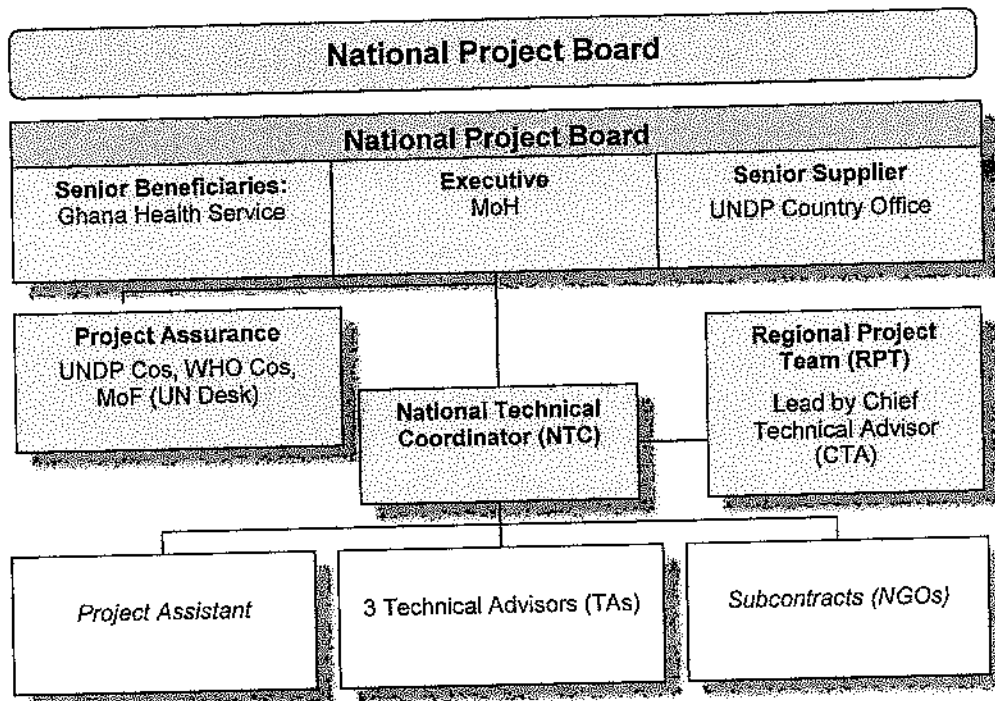
176. The regional project components (as indicated in the project document) will be executed applying the Direct Implementation Modality (DIM) through the UNDP Istanbul Regional Hub in close collaboration with the UNDP Nordic Office and its Global Procurement Unit-Health (GPU). The latter will assume the procurement of the non-incineration technologies for each of the project countries and health care facilities supported by the project.

### *177-179: Regional Project Board:*

*For the Regional Project Board, please refer to the Project Document for the Regional Component of the project.*

### *National Project Board*

180. The National Project Board (PB) will be responsible for making management decisions for the project at national level, in particular when guidance is required by the National Project Coordinator. It will play a critical role in project monitoring and evaluations by assuring the quality of these processes and associated products, and by using evaluations for improving performance, accountability and learning. The National Project Board will ensure that required resources are committed. It will also arbitrate on any conflicts within the project and negotiate solutions to any problems with external bodies. In addition, it will approve the appointment and responsibilities of the National Project Coordinator and any delegation of its Project Assurance responsibilities. Based on the approved Annual Work Plan (AWP), the Project Board can also consider and approve the quarterly plans and approve any essential deviations from the original plans. The project will be subject to Project Board meetings at least twice every year. The first such meeting will be held within the first 6 months of the start of full implementation. At the initial stage of project implementation, the PB may, if deemed advantageous, wish to meet more frequently to build common understanding and to ensure that the project is initiated properly.



181. To ensure UNDP's ultimate accountability for project results, National Project Board decisions will be made in accordance with standards that shall ensure management for development results, best value for money, fairness, integrity, transparency, and effective international competition. In case consensus cannot be reached within the Board, the final decision will rest with the UNDP Project Coordinator. The National Project Board can consider the need to include **Ministry of Finance (MoF)** and **WHO** representatives to collaborate with UNDP to ensure project accountability.

182. Members of the National Project Board will consist of key national government and non-government agencies, and appropriate local level representatives. The UNDP Country Office and WHO Office will also be represented on the National Project Board, which will be balanced in terms of gender. Potential members of the National Project Board will be reviewed and recommended for approval during the Project Appraisal Committee (PAC) meeting.

#### *Potential Composition of the National Project Board*

183. The exact composition of the NPB will vary from country to country depending on custom, practice and/or law. In general, the NPB will be a policy body that will include high-level, government officials with overall responsibility for the areas in which the Project will carry out activities. Typically, the NPB will include a designated senior representative from the Health and Environment Ministries and from the Ministry in which the GEF Operational Focal Point is located if different from Ministry of Health or Ministry of Environment. If not already covered by the above, the NPB should include a representative or a liaison from each of the authorities responsible for the implementation of the Stockholm Convention, Minamata Convention and Basel Convention (if not based in the same authority). Since the project is UN agency funded



project, the board should have a representative from the UN desk at the Ministry of finance to coordinate the implementation budget for the project. The NPB will also include representation from the national healthcare sector, the WHO office and the UNDP country office, as well as one or more appropriate representative from national NGOs with demonstrated concern and activity in matters associated with health-care waste management.

184. The National Project Board will contain three distinct roles:

- **Executive Role:** This individual will represent the project “owners” and will chair the group. This role will rest with the Ministry of Health.
- **Senior Supplier Role:** This requires the representation of the interests of the funding parties for specific cost sharing projects and/or technical expertise to the project. The Senior Supplier’s primary function within the Board will be to provide guidance regarding the technical feasibility of the project. This role will rest with the UNDP Country Office.
- **Senior Beneficiary Role:** This role requires representing the interests of those who will ultimately benefit from the project. The Senior Beneficiary’s primary function within the Board will be to ensure the realization of project results from the perspective of project beneficiaries. This role will rest with the other institutions (key national governmental and non-governmental agencies, and appropriate local level representatives) represented on the Project Board, who are stakeholders in the project.

185. Project Assurance: The Project Assurance role supports the Project Board Executive by carrying out objective and independent project oversight and monitoring functions. The Project Assurance role will rest with the UNDP Country Office. If conditions demand other agencies to assist in the quality Assurance, then WHO and MoH could support the quality assurance team from UNDP Ghana Office.

186. The National Project Coordinator will be responsible for the coordinating of all activities to achieve the objectives, outcomes and outputs set forth in this project. The National Project Coordinator will report to the National Project Director in the Ministry of Health and to the Project’s Chief Technical Advisor.

187. As the provider of the funds for this project, the GEF logo will appear on all project Publications, along with other donor logos. Any quote appearing publication of GEF funded projects must also acknowledge GEF’s participation. The UNDP logo will be equally or more visible and separate from the GEF logo.

188. In its role as GEF Implementing Agency (IA) for this project UNDP shall provide project cycle management services as defined by the GEF Council (described in Annex VI).

189. The Government of Ghana shall request UNDP to provide direct project services specific to project inputs according to its policies and convenience. These services – and the costs of such services - are specified in the Letter of Agreement in Annex IX. In accordance with GEF Council requirements, the costs of these services will be part of the executing entity’s Project Management Cost allocation identified in the project budget. UNDP and the Government of Ghana acknowledge and agree that these services are not mandatory and will only be provided in full accordance with UNDP policies on recovery of direct costs.

### ***Global Expert Team***

190. A project **Chief Technical Advisor (CTA)** will have overall responsibility for Project implementation. The CTA will be assisted by a Global Project Coordinator/Technical Advisor; a Senior Public Health Advisor provided by WHO; and a Senior Policy Advisor provided by HCWH. The CTA will additionally be assisted by a Senior Expert on Healthcare Waste Management Systems. The above will constitute the Project **Global / Regional Expert Team (GET)**.

191. During the implementation of the Project, the **Global Expert Team (GET)** will provide technical and policy expertise and will have joint responsibility to assure that Project activities are successfully implemented. The GET will oversee global coordination and management under the overall policy direction provided by the Project Steering Committee (GPSC), the day-to-day guidance of the Chief Technical Advisor (CTA) and in consultation with the HCWH Senior Policy and WHO Advisors. The GET members include the Project CTA, the Project Coordinator/Technical Advisor, Senior Policy and Public Health Advisors from HCWH and WHO respectively.

### ***National Working Group (NWG)***

192. The **National Working Group (NWG)** will be composed of individuals from appropriate ministries, agencies and stakeholder groups who have practical involvement or interest in day-to-day Project activities. The exact composition and mode of operation of the NWG will vary from country to country depending on need and circumstance. The NWG may include representatives from UNDP (Country Offices), WHO, health, environment and other appropriate ministries, NGOs, training institutions, health-care facilities, medical and municipal waste service providers, and health-care related associations. In general, the NWG will advise the National Project Board and will assist the National Consultant(s) by providing expertise and advice on project-related policy, economic, scientific and technical issues and by assisting in networking.

### ***National Consultants (NCs)***

193. **National Consultants (NC)** will be hired as necessary to coordinate and implement Project activities. Consultation arrangements will vary country to country based on need, available expertise, and country workplan. National Consultants will report jointly to the Global Project Coordinator/Technical Advisor and a designee of the National Project Board. NCs will coordinate and/or carry out: support activities in model facilities on implementation of model programs; activities in the deployment of appropriate technologies; activities towards institutionalization and roll-out of the national training programs; activities necessary to hold successful national conferences; and dissemination, monitoring and evaluation activities.

### ***Responsible Parties and other Project Partners***

194. The regional component of the Project has two Responsible Parties: the World Health Organization, on behalf of the WHO member states participating in the Project, and the international NGO coalition Health Care Without Harm.

195. The *World Health Organization* (WHO) is the United Nations specialized agency on health with the objective of attainment of the highest possible level of health by all peoples. WHO's guiding principles related to health-care waste management include promoting sound health-care waste management policies and practices; preventing health risks to patients, workers and the public associated with exposure to health-care wastes; support for implementation of the Stockholm Convention on Persistent Organic Pollutants; and minimization of human exposure to toxic pollutants. WHO will provide support to Project activities through its headquarters offices and through WHO country offices.

196. *Health Care Without Harm* (HCWH) is an international coalition of 443 organizations in 52 countries working to transform the health care industry so it is no longer a source of harm to people and the environment. HCWH seeks to do this without compromising patient safety or care with the aim of achieving health-care delivery systems that contribute to overall ecological sustainability. HCWH works to phase-out medical waste incineration, minimize the amount and toxicity of all waste generated, promote safer waste treatment practices and secure a safe and healthy workplace for all health care workers.

## VI. TECHNOLOGY PROCUREMENT ARRANGEMENTS

197. Presently, UNDP is the principal recipient of Global Fund grants to fight HIV/AIDS, Tuberculosis and Malaria (GFATM) in 26 countries worldwide. In 2013 alone, UNDP provided procurement assistance to these 26 countries, amounting to nearly 400 million US\$. The majority of this procurement assistance (67%) is provided to countries in the African region. Although most of the funds are allocated for pharmaceuticals and commodities to prevent the spread of infectious diseases, support is also provided in the procurement of Healthcare Waste Management and infection prevention related supplies and in certain cases healthcare waste treatment technologies. Although UNDP is not the principal recipient of the GFATM in Ghana, Madagascar and Tanzania, it is the principal recipient in Zambia, which in 2013 amounted to health procurement in the order of 70 million US\$.

198. On behalf of UNDP, it is the Global Procurement Unit (GPU Health), which assumes the responsibility of procurement for the countries where UNDP is the principal recipient. In doing so it makes use of long-term agreements with vendors as well as procurement arrangements with UNICEF and WHO in order to gain access to the right medical supplies and commodities at reduced costs.

199. Because of its experience and expertise related to international procurement and bidding procedures, as well as its access to long-term agreements, and possibilities of economies of scale, UNDP GPU Health will support the project with the procurement of healthcare waste management treatment technologies. It is thought that by streamlining such procurement support through GPU Health, this will significantly reduce the time and human resources spent on procurement related activities in support of GEF funded Healthcare Waste Management projects.

## VII. MONITORING FRAMEWORK AND EVALUATION

200. The project will be monitored through the following M & E activities. The M&E budget is provided in the table below.

### Project start:

201. A Project Inception Workshop will be held within the first 2 months of project start with those with assigned roles in the project organization structure, UNDP country office and where appropriate/feasible regional technical policy and programme advisors as well as other stakeholders. The Inception Workshop is crucial to building ownership for the project results and to plan the first year annual work plan.

202. The Inception Workshop should address a number of key issues including:

- a) Assist all partners to fully understand and take ownership of the project. Detail the roles, support services and complementary responsibilities of UNDP CO and RCU staff vis à vis the project team. Discuss the roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms. The Terms of Reference for project staff will be discussed again as needed.
- b) Based on the project results framework and the relevant GEF Tracking Tool if appropriate, finalize the first annual work plan. Review and agree on the indicators, targets and their means of verification, and recheck assumptions and risks.
- c) Provide a detailed overview of reporting, monitoring and evaluation (M&E) requirements. The Monitoring and Evaluation work plan and budget should be agreed and scheduled.
- d) Discuss financial reporting procedures and obligations, and arrangements for annual audit.
- e) Plan and schedule Project Board meetings. Roles and responsibilities of all project organisation structures should be clarified and meetings planned. The first Project Board meeting should be held within the first 12 months following the inception workshop.

203. An Inception Workshop report is a key reference document and must be prepared and shared with participants to formalize various agreements and plans decided during the meeting.

### Quarterly:

- Progress made shall be monitored in the UNDP Enhanced Results Based Management Platform.
- Based on the initial risk analysis submitted, the risk log shall be regularly updated in ATLAS. Risks become critical when the impact and probability are high. Note that for UNDP-GEF projects, all financial risks associated with financial instruments such as revolving funds, microfinance schemes, or capitalization of ESCOs are automatically classified as critical on the basis of their innovative nature (high impact and uncertainty due to no previous experience justifies classification as critical).

- Based on the information recorded in Atlas, a Project Progress Reports (PPR) can be generated in the Executive Snapshot.
- Other ATLAS logs can be used to monitor issues, lessons learned etc. The use of these functions is a key indicator in the UNDP Executive Balanced Scorecard.

**Annually:**

- Annual Project Review/Project Implementation Reports (APR/PIR): This key report is prepared to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July). The APR/PIR combines both UNDP and GEF reporting requirements.

The APR/PIR includes, but is not limited to, reporting on the following:

- Progress made toward project objective and project outcomes - each with indicators, baseline data and end-of-project targets (cumulative)
- Project outputs delivered per project outcome (annual).
- Lesson learned/good practice.
- AWP and other expenditure reports
- Risk and adaptive management
- ATLAS QPR
- Portfolio level indicators (i.e. GEF focal area tracking tools) are used by most focal areas on an annual basis as well.

**Periodic Monitoring through site visits:**

UNDP CO and the UNDP RCU will conduct visits to project sites based on the agreed schedule in the project's Inception Report/Annual Work Plan to assess first hand project progress. Other members of the Project Board may also join these visits. A Field Visit Report/BTOR will be prepared by the CO and UNDP RCU and will be circulated no less than one month after the visit to the project team and Project Board members.

**Mid-term of project cycle:**

The project will undergo an independent Mid-Term Evaluation at the mid-point of project implementation (insert date). The Mid-Term Evaluation will determine progress being made toward the achievement of outcomes and will identify course correction if needed. It will focus on the effectiveness, efficiency and timeliness of project implementation; will highlight issues requiring decisions and actions; and will present initial lessons learned about project design, implementation and management. Findings of this review will be incorporated as recommendations for enhanced implementation during the final half of the project's term. The organization, terms of reference and timing of the mid-term evaluation will be decided after consultation between the parties to the project document. The Terms of Reference for this Mid-term evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF. The management response and the evaluation will be uploaded to UNDP corporate systems, in particular the UNDP Evaluation Office Evaluation Resource Center (ERC).

The relevant GEF Focal Area Tracking Tools will also be completed during the mid-term evaluation cycle.

**End of Project:**

An independent Final Evaluation will take place three months prior to the final Project Board meeting and will be undertaken in accordance with UNDP and GEF guidance. The final evaluation will focus on the delivery of the project's results as initially planned (and as corrected after the mid-term evaluation, if any such correction took place). The final evaluation will look at impact and sustainability of results, including the contribution to capacity development and the achievement of global environmental benefits/goals. The Terms of Reference for this evaluation will be prepared by the UNDP CO based on guidance from the Regional Coordinating Unit and UNDP-GEF.

The Terminal Evaluation should also provide recommendations for follow-up activities and requires a management response which should be uploaded to PIMS and to the UNDP Evaluation Office Evaluation Resource Center (ERC).

The relevant GEF Focal Area Tracking Tools will also be completed during the final evaluation.

During the last three months, the project team will prepare the Project Terminal Report. This comprehensive report will summarize the results achieved (objectives, outcomes, outputs), lessons learned, problems met and areas where results may not have been achieved. It will also lay out recommendations for any further steps that may need to be taken to ensure sustainability and replicability of the project's results.

**Learning and knowledge sharing:**

Results from the project will be disseminated within and beyond the project intervention zone through existing information sharing networks and forums.

The project will identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation through lessons learned. The project will identify, analyze, and share lessons learned that might be beneficial in the design and implementation of similar future projects.

Finally, there will be a two-way flow of information between this project and other projects of a similar focus.

**Communications and visibility requirements:**

Full compliance is required with UNDP's Branding Guidelines. These can be accessed at <http://intra.undp.org/coa/branding.shtml>, and specific guidelines on UNDP logo use can be accessed at: <http://intra.undp.org/branding/useOfLogo.html>. Amongst other things, these guidelines describe when and how the UNDP logo needs to be used, as well as how the logos of donors to UNDP projects needs to be used. For the avoidance of any doubt, when logo use is required, the UNDP logo needs to be used alongside the GEF logo. The GEF logo can be

accessed at: [http://www.thegef.org/gef/GEF logo](http://www.thegef.org/gef/GEF%20logo). The UNDP logo can be accessed at <http://intra.undp.org/coa/branding.shtml>.

Full compliance is also required with the GEF's Communication and Visibility Guidelines (the "GEF Guidelines"). The GEF Guidelines can be accessed at: [http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08 Branding the GEF%20final 0.pdf](http://www.thegef.org/gef/sites/thegef.org/files/documents/C.40.08%20Branding%20the%20GEF%20final%200.pdf). Amongst other things, the GEF Guidelines describe when and how the GEF logo needs to be used in project publications, vehicles, supplies and other project equipment. The GEF Guidelines also describe other GEF promotional requirements regarding press releases, press conferences, press visits, visits by Government officials, productions and other promotional items.

Where other agencies and project partners have provided support through co-financing, their branding policies and requirements should be similarly applied.

**Table 8: M & E Work Plan and Budget (for this whole GEF FSP)**

| Type of M&E activity  | Responsible Parties   | Budget US\$<br><i>Excluding project team staff time</i>         | Time frame  |
|---|---|---|---|
| Inception Workshop and Report   | <ul style="list-style-type: none"> <li>▪ Project Director and Country Coordinators</li> <li>▪ UNDP CO, UNDP GEF</li> </ul>  | Indicative cost: 139,400 US\$                                   | Within first two months of project start up   |
| Measurement of Means of Verification of project results.                                      | <ul style="list-style-type: none"> <li>▪ UNDP GEF RTA/Project Director will oversee the hiring of specific studies and institutions, and delegate responsibilities to relevant team members.</li> </ul> | To be finalized in Inception Phase and Workshop.                | Start, mid and end of project (during evaluation cycle) and annually when required. |
| Measurement of Means of Verification for Project Progress on <i>output and implementation</i> | <ul style="list-style-type: none"> <li>▪ Oversight by Project Director Project team</li> </ul>  | To be determined as part of the Annual Work Plan's preparation. | Annually prior to ARR/PIR and to the definition of annual work plans                |
| ARR/PIR   | <ul style="list-style-type: none"> <li>▪ Project Director and team</li> <li>▪ UNDP CO</li> <li>▪ UNDP RTA</li> <li>▪ UNDP MPU</li> </ul>  | None  | Annually  |
| Periodic status/ progress reports   | <ul style="list-style-type: none"> <li>▪ Project Director and team</li> </ul>   | None  | Quarterly   |
| Mid-term Evaluation   | <ul style="list-style-type: none"> <li>▪ Project Director and team</li> <li>▪ UNDP CO</li> <li>▪ UNDP RCU</li> <li>▪ External Consultants (i.e. evaluation team)</li> </ul>                             | Indicative cost: 32,000 US\$                                    | At the mid-point of project implementation.   |
| Final Evaluation  | <ul style="list-style-type: none"> <li>▪ Project Director and team,</li> <li>▪ UNDP CO</li> <li>▪ UNDP RCU</li> <li>▪ External Consultants (i.e.</li> </ul>   | Indicative cost: 32,000 US\$                                    | At least three months before the end of project                                     |

| Type of M&E activity   | Responsible Parties  | Budget US\$<br><i>Excluding project team staff time</i>              | Time frame  |
|--|--|--|---|
|  | evaluation team)   |  | implementation                                      |
| Project Terminal Report  | <ul style="list-style-type: none"> <li>▪ Project Director and team</li> <li>▪ UNDP CO</li> <li>▪ local consultant</li> </ul>           | 0  | At least three months before the end of the project |
| Audit  | <ul style="list-style-type: none"> <li>▪ UNDP CO</li> <li>▪ Project manager and team</li> </ul>  | Indicative cost per year: <b>5,000 US\$</b> <sup>32</sup>            | Once throughout the project's duration              |
| Visits to field sites  | <ul style="list-style-type: none"> <li>▪ UNDP CO</li> <li>▪ UNDP RCU (as appropriate)</li> <li>▪ Government representatives</li> </ul> | For GEF supported projects, paid from IA fees and operational budget | Yearly  |
| <b>TOTAL indicative COST</b><br>Excluding project team staff time and UNDP staff and travel expenses |  | 223,400 US\$<br><br>(+/- 5% of total budget)                         |   |

## VIII. LEGAL CONTEXT

This document together with the Country Programme Action Plan (CPAP) signed by the **Government of Ghana** and **UNDP**, which are incorporated by reference, constitute together a Project Document as referred to in the Standard Basic Assistance Agreement (SBAA), as such all CPAP provisions apply to this document.

Consistent with the Article III of the Standard Basic Assistance Agreement, the responsibility for the safety and security of the implementing partner and its personnel and property, and of UNDP's property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

<sup>32</sup> The audit costs are included in the regional component budget and this do not appear in the national budget presented in this project document.



- a) Put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- b) Assume all risks and liabilities related to the implementing partner's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

### **Multi country and regional project**

This project forms part of an overall programmatic framework under which several separate associated country level activities will be implemented. When assistance and support services are provided from this Project to the associated country level activities, this document shall be the "Project Document" instrument referred to in:

- (i) The respective signed SBAA's for the specific countries or
- (ii) In the Supplemental Provisions attached to the Project Document in cases where the recipient country has not signed an SBAA with UNDP, attached hereto and forming an integral part hereof.

This project will be implemented by the **Ministry of Health** in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

### **Audit**

Audit will be conducted according to UNDP Financial Regulations and Rules and applicable Audit policies. Audit of that particular national project will be covered by the budget of the Regional component managed by the Istanbul regional Hub of UNDP.



## IX. REFERENCES

- Amfo-Otu, R. & Doo, I. A. (2013). Hospital solid waste management at Tetteh Quarshie Memorial Hospital, Akuapem-Mampong, Ghana. Manuscript under review.
- Debere, M. K., Gelaye, K. A., Almado, A. G. & Trifa, Z. M. (2013). Assessment of the health care waste generation rates and its management system in hospitals of Addis Ababa, Ethiopia, *BMC Public Health*, 13:28. Doi:10.1186/1471-2458-13-28
- EPA-Ghana, (2002). Guidelines for the Management of Health Care and Veterinary Waste in Ghana. Best Practice Environmental Guidelines Series No. 2.
- EPA-Ghana, (2007). National Implementation Plan of the Stockholm Convention on Persistent Organic Pollutants. Ghana. [Available at <http://www.pops.int/documents/implementation/nips/submissions/Ghana%20NIP.pdf>]
- John Wiley & Sons, New York. Ministry of Local Government and Rural Development (2010). Revised National Environmental Sanitation Policy, Ghana. Accessed at [http://docs.watsan.net/Downloaded\\_Files/PDF/MLGRD-2010-Environmental.pdf](http://docs.watsan.net/Downloaded_Files/PDF/MLGRD-2010-Environmental.pdf)
- GHS. (2008). Healthcare Waste Management in Ghana. Estate Department of Ghana Health Service. Kirk-Othmer Encyclopaedia of Chemical Technology, 3rd Ed. Vol. 15, (1981)
- Ministry of Health (2006). Healthcare Waste Management Policy. Ministry of Health, Ghana. [Accessed at <http://www.ghanahealthservice.org/includes/upload/publications/HCWM%20Policy%20and%20Guidelines.pdf>]
- Prüss-Ustun, A. Rushbrook, P., J. E. & Zghondi, R. (2013). Safe management of wastes from health-care activities. The Blue book Second edition ed. WHO, Geneva.
- UNEP, (2008). Mercury Use in Healthcare Settings and Dentistry; Module 4. DTIE Chemicals Branch, Geneva. (Accessed on 20th November, 2013 at [http://www.unep.org/hazardoussubstances/Portals/9/Mercury/AwarenessPack/English/UNEP\\_Mod4\\_UK\\_Web.pdf](http://www.unep.org/hazardoussubstances/Portals/9/Mercury/AwarenessPack/English/UNEP_Mod4_UK_Web.pdf))
- UNEP, (2013). Toolkits for identification and quantification of releases of dioxins, furans and other Unintentional POPs under Article 5 of the Stockholm Convention. [Available at <http://toolkit.pops.int/Publish/Downloads/UNEP-POPS-TOOLKIT-2012-En.pdf>]
- WHO (1999). Safe management of wastes from health care activities, ed by Prüss, A., Giroult, E. & Rushbrook, P. World Health Organization (WHO), Geneva, Switzerland. Available: at [www.who.int/entity/water\\_sanitation\\_health/medicalwaste/wastemanag/en/](http://www.who.int/entity/water_sanitation_health/medicalwaste/wastemanag/en/)
- WHO (2008). Mercury in Health Care policy paper. Department of Protection of the Human Environment, Water, Sanitation and Health. Geneva. (Accessed on 18th November, 2013 at [http://www.who.int/water\\_sanitation\\_health/medicalwaste/mercurypolpap230506.pdf](http://www.who.int/water_sanitation_health/medicalwaste/mercurypolpap230506.pdf))
- Wilson, A. Anyemedu, F. O. K., Kwarteng, S. O. & Awuah, E. (2006). Management of medical waste from teaching hospitals in Ghana. *Journal of Ghana Institution of Engineers Vol 4, No.2, p 67-75.*

(UNDP, 2009) Annex B & C “*Guidance on estimating Baseline Dioxin Releases for the UNDP Global Healthcare Waste Project*”, available at:  
<http://www.gefmedwaste.org/downloads/Dioxin%20Baseline%20Guidance%20July%202009%20UNDP%20GEF%20Project.pdf>

(WHO, 2011), “*Fact sheet N°281*”, available at: <http://www.who.int/mediacentre/factsheets/fs281/en/>

(UN/GEF Global Health Care Waste Project, 2009) “*Individualized Rapid Assessment Tool (I-RAT)*” Available at <http://www.gefmedwaste.org/downloads/I-RAT%20May%202009%20UNDP%20GEF%20Project.xls>

(EPA, 2007) “*National Implementation Plan of the Stockholm Convention on Persistent Organic Pollutants.*” Available at:  
<http://www.pops.int/documents/implementation/nips/submissions/Ghana%20NIP.pdf>

(Amfu-Otu/MoH/GHS/UNDP, 2014) “*Final Report on Initial Assessment of the Levels of UPOPs and Mercury Releases into the Environment Resulting from HCWM in Ghana*” available through UNDP Ghana

(MoH/GHS, 2010) “*The Health Sector in Ghana – Facts and Figures*” available at [http://www.moh-ghana.org/UploadFiles/Publications/GHS%20Facts%20and%20Figures%202010\\_22APR2012.pdf](http://www.moh-ghana.org/UploadFiles/Publications/GHS%20Facts%20and%20Figures%202010_22APR2012.pdf).

## ANNEX I: COORDINATION ACTIVITIES

There are a number of initiatives in Ghana, as well as at regional and global level (past, on-going and future) that are relevant for the proposed project components in Ghana. For an overview of these activities please refer to Table 9 below.

Table 9: Overview of relevant HCWM related programmes and projects (past, on-going and planned).

| Entity / Organization  | Activities   | Period      |
|------------------------|--|-------------|
| WHO Ghana              | Ghana: The WHO Office in Ghana, supports the Ministry of Health in implementing activities supported by the GAVI Alliance which aim to save children's lives and protect people's health by increasing access to immunisation in poor countries. With funding provided by GAVI, WHO Ghana is currently supporting the Ministry of Health to put in place an Expanded Program on Immunization (EPI). As part of this funding, WHO/GAVI is supporting activities that aim to improve the management of Health-Care Waste, in particular waste resulting from immunization campaigns through the procurement of 32 incinerators.          | On-going    |
| Ministry of Health     | Implementation activities carried out with WHO and WB support included: <ul style="list-style-type: none"> <li>• Orientation at meetings of district health directors, health administrators, regulators, etc. (2005-2009)</li> <li>• Training of trainers at national level (2009)</li> <li>• Integration with training on Occupational health &amp; safety: Eastern &amp; Central regions (2010)</li> <li>• Establishment of 2 pilot facilities, Central Region</li> <li>• Training manual and HCWM training supported by Abidjan Lagos Corridor (ALCO) Project</li> </ul>   |             |
| UNICEF Ghana           | Ghana: The UNICEF Office in Ghana, supports the Ministry of Health in implementing activities supported by the GAVI Alliance which aim to save children's lives and protect people's health by increasing access to immunisation in poor countries. With funding provided by GAVI, UNICEF Ghana is currently supporting the Ministry of Health to put in place an Expanded Program on Immunization (EPI). As part of this funding, UNICEF/GAVI is supporting activities that aim to improve the management of Health-Care Waste, in particular waste resulting from immunization campaigns through the procurement of 35 incinerators. | 2014 - 2015 |
| Zoomlion Ghana limited | Involved in the haulage and disposal of municipal waste. However, as it services a significant number of HCFs, which do not dispose of working treatment technologies, it often happens that Zoomlion handles waste containers in which infectious waste is mixed into municipal waste.<br><br>ZoomLion might in the future procure, install and operate a hydroclave, and based on a fee treat HCW for HCFs.<br><br>ZoomLion also runs the "Africa Institute of Sanitation and Waste Management (AISW AM)" which could be an excellent partner for including a certificate course on HCWM.  |             |

## ANNEX II:

## RISK ANALYSIS AND RISK MITIGATION MEASURES

Table 10: Overview of the Risks, Assumptions and Mitigation Measures

| Risks/ Assumptions  | Level | Mitigation measures  |
|---|-------|--|
| 1. Unclear of the roles and responsibilities of the two key ministries (Ministry of Health and the Ministry of Environment/National Environment Protection Agency) related to aspects of HCWM resulting in no leadership, conflicting decisions, duplication, or slow implementation of project components. | M     | All project stakeholders have been involved in the project's proposal planning phase during which their roles and responsibilities have been clarified and agreed upon.  |
| 2. Slow or no enhancement, adoption and implementation of national policies, plans and strategies (including guidelines and standards) on HCWM which are key in creating an enabling environment for replication of BAT/BEP across the country.   | M     | The project will support project stakeholders in reviewing and strengthening the national policy and regulatory framework with respect to HCWM, and as such influence and facilitate the creation of an enabling environment.  |
| 3. Slow or poor implementation of BAT/BEP practices in healthcare facilities, related infrastructures, technologies, mercury phase-out, and/or training programs.   | M     | MoUs with HCFs that will be supported by the project will outline responsibilities and timelines. The evaluation project component will identify problems and recommend improvements (e.g. the midterm review will evaluate implementation of the "first phase", and make recommendation for implementation of the "second phase"). The evaluation and technology allocation formula will also incentivize healthcare facilities to implement project activities successfully and efficiently considering HCFs and project countries that have best and fastest institutionalized best practices will be prioritized.  |
| 4. Technology procurement beset by delays, inadequate equipment, wrong specifications, lack of transparency, or non-compliance with UN bidding requirements and procedures.   | L     | <p>The competitive bidding process for the non-incineration technologies will be centralized for all project countries and implemented making through UNDP's Nordic Office Procurement Support Unit - Health (to ensure economies of scale, to allow the use of long-term agreements, etc.), will be transparent and adhere strictly to UN requirements and procedures. The project will ensure that technologies meet BAT/BEP and other standards.</p> <p>Considering UNDP is the principal recipient for the Global Fund in Zambia and in 26 countries worldwide, it has previously assumed procurement for HCWM related supplies and technologies for GF activities in a number of countries. To ensure that procurement practices are transparent, speedy and most cost effective, the project will ensure that procurement of non-incineration technologies is undertaken by UNDP Copenhagen, based on technical specifications drawn up by the project, in consultations and agreement with a national working group on injection safety /management of HCW, the HCFs themselves under the leadership of the Ministry of Health.</p> |

| Risks/ Assumptions  | Level | Mitigation measures   |
|---|-------|---|
| <p>5. Health care Facilities discontinue the use of Best Environmental Practices after the project comes to an end, and discontinue the maintenance of BAT resulting in their ultimate breakdown and return to open burning and incineration.</p> |       | <p>The most important aspect of the success of these types of projects, is whether HCFs are able to keep up the best environmental practices they take up as part of the project and are able to ensure that newly installed technologies are regularly maintained and serviced so that they keep operating long beyond the project's duration.</p> <p>The single most important aspect of sustainability in the area of HCWM, is keeping the HCWM expenditures as low as possible, ensuring that high quality maintenance capacity is available at local and national level, and ensuring that HCFs continue to be committed to HCWH and have at their disposal a budget line exclusively for HCWM.</p> <p>The project will ensure that: i) non-incineration technologies are procured with a maintenance and insurance scheme for a minimum of 5 years beyond the project's duration; ii) at national level, with the help of distributors, maintenance teams are set-up and trained upon which the HCFs can call when technologies require maintenance or repair; iii) maintenance teams and operators at HCFs are training in day-to-day maintenance procedures; iv) At national, provincial and district level, the project will advocate for (and include in national policies and regulations) the compulsory allocation of a HCWM budget.</p> <p>As much as possible, agreements will be made with manufacturers and distributors to ensure the availability of parts and technical support for repair and maintenance of technologies. The regional project will establish a certification program under which accredited parties can certify the quality of non-incineration technologies and their conformance with BAT/BEP and international standards. The teams of national and regional experts will be encouraged to form a network for the purpose of information exchange, professional development, and assisting the countries in the region.</p> <p>The project will also support HCFs in improving segregation, and recycling (of disinfected plastic waste fractions, composting, etc.) in order for the amount of waste that needs to be treated will be kept at a minimum, while HCFs are also able to resell recyclable wastes to recyclers, allowing them to recover some of their HCWM budget.</p> <p>When hospitals are committed to HCWM, proud of their clean premises, low infection rates and can show-case well maintained treatment technologies, it has been shown in similar project that these HCFs continue to keep up BEP/BAT practices long beyond the project's duration.</p> |
| <p>6. Insufficient number of technology suppliers involved in the bidding and/or high purchase costs.</p>   | M     | <p>Ensuring sufficient outreach to vendors, also conducted within the scope of other UNDP/GEF/HCWM projects, will ensure sufficient vendors. Centralized high-volume</p>  |

BT

| Risks/ Assumptions   | Level | Mitigation measures  |
|--|-------|--|
|  |       | procurement will help lower prices. Procurement facilitated by UNDP Copenhagen will ensure that long-term agreements with various international suppliers can be relied upon.  |
| 7. Little confidence of healthcare facilities and providers in non-incineration and mercury-free technologies, resulting in continued use of inadequate incinerators and mercury devices.  | L     | <p>The project will share technical specifications, standards, test results, and experiences from the former UNDP/WHO/HCWM Global Medical Waste project. "Recipients facilities" that are successfully using non-incineration technologies will provide decision-makers at HCFs, national and regional level with information on their experiences with non-incineration and mercury-free technologies.</p> <p>In order to help HCFs phase-out the use of Mercury containing medical devices, the project will conduct a staff preference study on cost-effective Mercury-free alternatives at some of the project HCFs, which allows staff to choose and use the Mercury-free device of their liking.</p>   |
| 8. The open burning of HCW at landfills or hospital sites creates greenhouse gas (GHG) emissions in the form of CO <sub>2</sub> , CH <sub>4</sub> , etc. In addition, the transportation of large amounts of HCW waste to landfill and dump sites, due to insufficient segregation practices, results in additional unnecessary GHG emissions. Finally, certain hospitals sell PVC containing medical plastics to recyclers, however inadequate thermal processes, both practiced at healthcare facilities and by recyclers, are sources of GHGs releases. All these aspects contribute to climate change risks. | L     | <p>The implementation of HCWM plans, training and BEP at HCFs will include components related to improved recycling rates and practices, based on the results of a feasibility report on the recycling of medical wastes. Improved waste segregation and minimization practices, as well as improved recycling rates and practices will result in a significant reduction of waste volumes, and indirectly in GHG and dioxin emissions. Clusters will be served by treatment technologies installed on the premises of the most suitable facility within that cluster. In this manner, the most efficient set-up (minimum transportation requirements and optimum operation of centralized technologies) will enable to keep GHGs emission as a result of transportation and operation of technologies at a minimum and minimize costs. Non-incineration technologies to be installed, will be energy efficient and depending on the type of equipment selected, the use of renewable energy sources will be explored (in connection with climate change mitigation programmes implemented by municipalities in the project areas). Unrecyclable disinfected health-care waste, will be transported to the municipal landfill site, where two decentralized shredders will further reduce waste volumes and waste will be disposed of in a dedicate landfill space/cell to ensure that it's not burned in the open, further eliminating UPOPs and GHG emissions.</p> |
| <b>Overall Risk Rating</b>   | L     |  |



**ANNEX III: OVERVIEW OF CO-FINANCING AND SUPPORT LETTERS**

*Table 11: Status of co-financing from Ghana at the time of project submission for CEO endorsement (co-financing letters have been submitted separately to the GEF)*

| <b>Name of Entity</b>                                 | <b>Type of Entity</b> | <b>In-kind (US\$)</b> | <b>Cash (US\$)</b> | <b>Total (US\$)</b> |
|---|-----------------------|-----------------------|--------------------|---------------------|
| 1. Ministry of Health                                 | National Government   | 762,000               | 848,000            | 1,610,000           |
| 2. Ministry of Local Government and Rural Development | National Government   | 1,900,000             | 0                  | 1,900,000           |
| 3. Zoomlion Ghana Limited                             | Private Sector        | 800,000               | 450,000            | 1,250,000           |
| 4. Environmental Protection Agency                    | National Government   | 450,000               | 0                  | 450,000             |
| <b>TOTAL</b>  |                       | <b>3,912,000</b>      | <b>1,298,000</b>   | <b>5,210,000</b>    |

## ANNEX IV: SOCIAL AND ENVIRONMENTAL SCREENING TEMPLATE

The completed template, which constitutes the Social and Environmental Screening Report, must be included as an annex to the Project Document. Please refer to the Social and Environmental Screening Procedure for guidance on how to answer the 6 questions.]

### Project Information

| Project Information                    |  |
|--|--|
| 1. Project Title                       | Reducing UPOP and Mercury Release from the Health Sector in Africa |
| 2. Project Number                      | 4611   |
| 3. Location<br>(Global/Region/Country) | Ghana  |

### Part A. Integrating Overarching Principles to Strengthen Social and Environmental Sustainability

#### QUESTION 1: How Does the Project Integrate the Overarching Principles in order to Strengthen Social and Environmental Sustainability?

*Briefly describe in the space below how the Project mainstreams the human-rights based approach*

Apart from the main aim of reducing releases of UPOPs and Mercury into the environment which affect the dignity of life of people, the project has taken cognizance of infectious nature of healthcare waste, especially sharps and the risk it poses to anyone who comes into contact with it, in particular when it is not properly managed. The project aims at adopting best HCWM practices to eliminate or reduce the risk faced hospital staff and patients, waste handlers, recyclers, and communities living near dumpsites, to better safeguard them from potential infections, such as Hepatitis B, C and HIV. The project has also incorporated training, provision of safety equipment into project activities to help safeguard the human right needs of the workers involved in the project and the nearby communities.

*Briefly describe in the space below how the Project is likely to improve gender equality and women's empowerment*

The project recognizes the vital role of women in healthcare delivery globally, as such measure such as capacity building of women at various stages of health care and waste management at the hospital have put in place. Issues of their exposure to toxic chemicals and hazardous working conditions have been addressed by the project to ensure the safety and empowerment through active participation.

*Briefly describe in the space below how the Project mainstreams environmental sustainability*

The project has an objective of promoting best environmental practices through the use of best available technologies. In this sense, the project is promoting non-incineration technologies for treating healthcare waste to contribute to the reduction of UPOPs and Mercury as captured by the Stockholm and Minamata Conventions. All the project activities are therefore going to be done according to international and national standards that conform to best environmental practices. The project is also mindful of *Libreville Declaration on Health and Environment*, as such all activities to be implemented are going to contribute to achieving the objectives of the declaration.

Part B. Identifying and Managing Social and Environmental Risks

**QUESTION 2: What are the Potential Social and Environmental Risks?**

*Note: Describe briefly potential social and environmental risks identified in Attachment 1 – Risk Screening Checklist (based on any "Yes" responses).*

**QUESTION 3: What is the level of significance of the potential social and environmental risks?**

*Note: Respond to Questions 4 and 5 below before proceeding to Question 6*

**QUESTION 6: What social and environmental assessment and management measures have been conducted and/or are required to address potential risks (for Risks with Moderate and High Significance)?**

| <i>Risk Description</i>   | <i>Impact and Probability (1-5)</i> | <i>Significance (Low, Moderate, High)</i> | <i>Comments</i>  | <i>Description of assessment and management measures as reflected in the Project design. If ESIA or SESA is required note that the assessment should consider all potential impacts and risks.</i>   |
|---|-------------------------------------|---|--|--|
| <p>Risk 1: ....<br/>Exposure of vulnerable groups like waste collectors and scavengers (value pickers) to unfair treatment, neglect of their well-being, and non-provision of basic logistics and training for the handling of the healthcare waste will amount to an abuse of their fundamental human right. This may exposed them to pathogens and hazardous substances</p> | <p>I = 3<br/><br/>P = 2</p>         | <p>Moderate</p>                           | <p>Trained and effective supervision workers already part of project components and therefore not likely to be a major problem</p> | <p>To protect the human right of the vulnerable groups such as waste collectors, these workers will be well recognized in their functions. Their capacities will be built through the training components of the project before and during implementation.<br/>A fair level of engagement will be adopted so that they will not feel being discriminated against or stigmatized in anyway. Occupational outlook of the waste collectors will be improved by providing them with the appropriate personal protective wear, improved working conditions and motivations. Segregation and treatment of recyclable materials shall be done effectively to eliminate the danger of exposing value pickers and recyclers to unacceptable risks from the waste.<br/>At the treatment point no value picker shall be allowed to pick materials from the site. No ESIA or</p> |

|   |                           |                 |   |  |
|---|---------------------------|-----------------|---|--|
|   |                           |                 |   | SESA is required   |
| <p>Risk 2 ....</p> <p>The transportation and handling of healthcare waste from health facilities to cluster or centralized treatment facilities can increase the risk of the workers contracting HIV/AIDS.</p>  | <p>I = 2</p> <p>P = 3</p> | <b>Moderate</b> | <p>Provision of safety equipment and training and testing captured by the project</p>   | <p>To protect healthcare wastes handlers from being infected with HIV/AIDS, the workers would be well trained, informed and protected to acts safely which will help in reducing the risk of HIV/AIDS infection.</p> <p>Safe transportation and handling protocols shall be adhered to by all workers through effective supervision and regular monitoring.</p>  |
| <p>Risk 3: ....</p> <p>The proposed project may pose some potential safety risk to health facilities and hospital users have direct environmental consequence during the construction of the facility to house the non-incineration treatment plant at the designated point for the cluster or centralized treatment point. This may be due to the clearing of land for construction, dust generation and noise production.</p> | <p>I = 1</p> <p>P = 2</p> | <b>Low</b>      | <p>The places for the construction and installation of the cluster treatment plant are likely to be in the hospital facility.</p> <p>Building may even be in existence already at the hospital.</p> | <p>To address the impact of dust in the healthcare facility the generated dust would be controlled by frequently watering the construction site to minimize its effect on the hospitals' operation.</p> <p>Noise production shall be reduced by substituting high noise making equipment and tools with low noise producing ones.</p> <p>Vehicular traffic shall be managed properly by traffic control person to allow free movement of traffic at the construction area. This shall be done in a way that will not detract the work at the hospital and reduce discomfort to patients.</p> <p>The construction activity is actually minimal and limited to the hospital facility which will be well coordinated.</p> |
| <p>Risk 4</p> <p>As part of the project activities, healthcare waste would be transported from some health facilities for cluster and centralized treatment. The transportation of this waste may pose some potential risk to the waste collection crew and users of the transporting route should</p>  | <p>I = 4</p> <p>P = 2</p> | <b>Moderate</b> | <p>Technical assistance needed to help establish good operating procedures and collection routes.</p>   | <p>To reduce the impact of waste storage, collection and transportation proper storage facilities with covering and packaging or loading of the waste into collection trucks will be done to help deal with the risk associated with storage, handling and transportation. The collection truck shall be a dedicated truck if the volume of waste to be hauled is high. This may be done by using</p>  |

|  |                        |                 |                                       |  |
|--|------------------------|-----------------|---------------------------------------|--|
| <p>there be any spill. If the vehicle used for the haulage of healthcare waste is not well cleaned and disinfected can allow the growth of some pathogens and affect the operation crew. Handling of healthcare waste at all stages of transportation and before treatment can expose handlers and other users of the health facilities to some risk of infection. The collection and storage of mercury containing equipment (sphygmomanometers and thermometers) and amalgam can create environmental and health risk to handlers and the ecosystem. Mercury can easily vaporized into air for inhalation into the body. This will be potentially dangerous for the transporting crew.</p> |                        |                 |                                       | <p>one motorised tricycle (Bola Taxi) for collection of healthcare waste from the health facilities. Proper handling protocol shall be established to deal with the risk of handling healthcare waste using the national guidelines. All these stages shall be done by trained staff to help deal with any potential risk associated with these processes. There shall be pre-disinfection of infectious healthcare waste using chemicals such as Hypochlorite before storage, the collection crew shall be provided with and supervised the use of industrial or disposable safety wears (gloves, aprons or overall coat). Handling frequency protocol shall be established in line with the national and international guidelines on healthcare waste handling and transportation.</p> <p>To reduce the risk associated with mercury handling the collection and storage of mercury containing equipment shall be done in collaboration with EPA Chemical Department/Unit and Ghana Atomic Energy through the use of established protocol for safe storage.</p> <p>The storage shall be done at the respective health facilities or at a centralized storage point by encapsulation or any best environmentally friendly method. There is no need for ESIA or SESA because the project is going to implement this component with technical support from EPA and Ghana Atomic Energy Commission</p> |
| <p>Risk 5<br/>Improper handling and</p>  | <p>I = 2<br/>P = 2</p> | <p>Moderate</p> | <p>Shall be handled by expert and</p> | <p>To reduce the risk associated with mercury handling the collection and</p>  |

|   |                        |                        |  |   |
|---|------------------------|------------------------|--|---|
| <p>storage of mercury containing equipment may expose health workers, waste handlers and community members living close to the storage site to mercury vapour.</p>  |                        |                        | <p>therefore may not have any major impact.<br/>All other staff to handle such waste will be trained accordingly</p> | <p>storage of mercury containing equipment shall be done in collaboration with EPA Chemical Department/Unit and Ghana Atomic Energy through the use of established protocol for safe storage.<br/>Training of handlers on safety precaution is very critical as well as captured in the capacity building component of the project.<br/>The storage shall be done at the respective health facilities or at a centralized storage point by encapsulation or any best environmentally friendly method.<br/>There is no need for ESIA or SESA because the project is going to implement this component with technical support from EPA and Ghana Atomic Energy Commission</p> |
| <p><b>Risk 6</b><br/>Failure of power supply may make the operation of the treatment system costly and prohibitive since the promoted technology is electric power driven. This will make the system non functional</p> | <p>I = 4<br/>P = 2</p> | <p><b>Moderate</b></p> | <p>Power fluctuations may last for only 24 hours in every three days</p>   | <p>Treatment periods shall be scheduled such that it will be done when electricity is available. The energy requirement capacity of treatment plant shall be considered before procurement and installation by taken into consideration the existing power conditions at the health facilities where the treatment plant will be cited. Health facility with standby power plant shall be considered for the installation of the treatment plant and this may be considered as one of the criteria.<br/>There is therefore no need for ESIA or SESA.</p>  |
| <p><b>Risk 7</b><br/>Risk of polluting nearby lands and water bodies through the released of untreated wastewater into such environment.</p>  | <p>I = 2<br/>P = 2</p> | <p><b>Low</b></p>      |  | <p>The treatment technology shall use low heat technology but with sufficient heat to destroy pathogens and render the waste safe to handle. Beneficial facility shall have wastewater treatment plant to ensure that effluent from the plant is treated to meet EPA effluent</p>   |

|   |                |          |   |   |
|---|----------------|----------|---|---|
|   |                |          |   | quality standards. The project shall consider this as one of the conditions for the establishment of the cluster treatment center. No ESIA or SESA needed.  |
| Risk 8<br>Generation of obnoxious odour and exposure to potentially infectious agent through the failure, collapse of treatment system to health workers and patients | I = 3<br>P = 1 | Moderate | The building in good location or operating system well structured | The building to house the treatment plant shall be a standard structure with good access and ventilation. If already exist, expert shall examine its physical and structural conditions before use. |
| [add additional rows as needed]   |                |          |   |   |

**QUESTION 4: What is the overall Project risk categorization? Moderate risk**

| Select one (see <u>SESP</u> for guidance) |                          | Comments  |
|---|--------------------------|---|
| <i>Low Risk</i>                           | <input type="checkbox"/> |   |
| <i>Moderate Risk</i>                      | <input type="checkbox"/> | The overall risk associated with the project can be identified with some certainty and adequate mitigative measures are in place to address them. |
| <i>High Risk</i>                          | <input type="checkbox"/> |   |

**QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are relevant?**

| Check all that apply  |                                     | Comments |
|---|-------------------------------------|----------|
| <i>Principle 1: Human Rights</i>                                    | <input checked="" type="checkbox"/> |          |
| <i>Principle 2: Gender Equality and Women's Empowerment</i>         | <input type="checkbox"/>            |          |
| <i>1. Biodiversity Conservation and Natural Resource Management</i> | <input type="checkbox"/>            |          |
| <i>2. Climate Change Mitigation and Adaptation</i>                  | <input type="checkbox"/>            |          |
| <i>3. Community Health, Safety and Working Conditions</i>           | <input checked="" type="checkbox"/> |          |
| <i>4. Cultural Heritage</i>   | <input type="checkbox"/>            |          |
| <i>5. Displacement and Resettlement</i>                             | <input type="checkbox"/>            |          |
| <i>6. Indigenous Peoples</i>  | <input type="checkbox"/>            |          |

|  |   |                                     |  |
|--|---|-------------------------------------|--|
|  | 7. Pollution Prevention and Resource Efficiency | <input checked="" type="checkbox"/> |  |
|--|---|-------------------------------------|--|

**Final Sign Off**

| Signature   | Date     | Description   |
|---|----------|---|
| QA Assessor<br><i>Abena Ampansaa</i><br><i>Baah</i> | 07/10/15 | UNDP staff member responsible for the Project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.  |
| QA Approver<br><i>Louis Kwekpa</i>                  | 07/10/15 | UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC. |
| PAC Chair<br><i>Louis Kwekpa</i>                    | 07/10/15 | UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.  |



**SESP Attachment 1. Social and Environmental Risk Screening Checklist**

| <b>Checklist Potential Social and Environmental Risks</b>  |                        |
|--|------------------------|
| <b>Principles 1: Human Rights</b>  | <b>Answer (Yes/No)</b> |
| 1. Could the Project lead to adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?                                 | Yes                    |
| 2. Is there a likelihood that the Project would have inequitable or discriminatory adverse impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups? <sup>33</sup> | No                     |
| 3. Could the Project potentially restrict availability, quality of and access to resources or basic services, in particular to marginalized individuals or groups?   | No                     |
| 4. Is there a likelihood that the Project would exclude any potentially affected stakeholders, in particular marginalized groups, from fully participating in decisions that may affect them?                                      | No                     |
| 5. Are there measures or mechanisms in place to respond to local community grievances?   | No                     |
| 6. Is there a risk that duty-bearers do not have the capacity to meet their obligations in the Project?  | No                     |
| 7. Is there a risk that rights-holders do not have the capacity to claim their rights?   | No                     |
| 8. Have local communities or individuals, given the opportunity, raised human rights concerns regarding the Project during the stakeholder engagement process?   | Yes                    |
| 9. Is there a risk that the Project would exacerbate conflicts among and/or the risk of violence to project-affected communities and individuals?  | No                     |
| <b>Principle 2: Gender Equality and Women's Empowerment</b>  |                        |
| 1. Is there a likelihood that the proposed Project would have adverse impacts on gender equality and/or the situation of women and girls?  | No                     |
| 2. Would the Project potentially reproduce discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?                                 | No                     |
| 3. Have women's groups/leaders raised gender equality concerns regarding the   | No                     |

<sup>33</sup> Prohibited grounds of discrimination include race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender people and transsexuals.

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| Project during the stakeholder engagement process and has this been included in the overall Project proposal and in the risk assessment?  |    |
| 3. Would the Project potentially limit women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services?<br><i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i> | No |
| <b>Principle 3: Environmental Sustainability:</b> Screening questions regarding environmental risks are encompassed by the specific Standard-related questions below  |    |
| <b>Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management</b>  |    |
| 1.1 Would the Project potentially cause adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services?<br><i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>   | No |
| 1.2 Are any Project activities proposed within or adjacent to critical habitats and/or environmentally sensitive areas, including legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?   | No |
| 1.3 Does the Project involve changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)  | No |
| 1.4 Would Project activities pose risks to endangered species?  | No |
| 1.5 Would the Project pose a risk of introducing invasive alien species?  | No |
| 1.6 Does the Project involve harvesting of natural forests, plantation development, or reforestation?   | No |
| 1.7 Does the Project involve the production and/or harvesting of fish populations or other aquatic species?   | No |
| 1.8 Does the Project involve significant extraction, diversion or containment of surface or ground water?<br><i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>   | No |
| 1.9 Does the Project involve utilization of genetic resources? (e.g. collection and/or harvesting, commercial development)  | No |
| 1.10 Would the Project generate potential adverse transboundary or global environmental concerns?   | No |

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| <p>1.11 Would the Project result in secondary or consequential development activities which could lead to adverse social and environmental effects, or would it generate cumulative impacts with other known existing or planned activities in the area?</p> <p><i>For example, a new road through forested lands will generate direct environmental and social impacts (e.g. felling of trees, earthworks, potential relocation of inhabitants). The new road may also facilitate encroachment on lands by illegal settlers or generate unplanned commercial development along the route, potentially in sensitive areas. These are indirect, secondary, or induced impacts that need to be considered. Also, if similar developments in the same forested area are planned, then cumulative impacts of multiple activities (even if not part of the same Project) need to be considered.</i></p> | Yes |
| <p><b>Standard 2: Climate Change Mitigation and Adaptation</b></p>   |     |
| <p>2.1 Will the proposed Project result in significant<sup>34</sup> greenhouse gas emissions or may exacerbate climate change?</p>   | No  |
| <p>2.2 Would the potential outcomes of the Project be sensitive or vulnerable to potential impacts of climate change?</p>  | No  |
| <p>2.3 Is the proposed Project likely to directly or indirectly increase social and environmental vulnerability to climate change now or in the future (also known as maladaptive practices)?</p> <p><i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i></p>   | No  |
| <p><b>Standard 3: Community Health, Safety and Working Conditions</b></p>  |     |
| <p>3.1 Would elements of Project construction, operation, or decommissioning pose potential safety risks to local communities?</p>   | No  |
| <p>3.2 Would the Project pose potential risks to community health and safety due to the transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?</p>   | Yes |
| <p>3.3 Does the Project involve large-scale infrastructure development (e.g. dams, roads, buildings)?</p>  | No  |
| <p>3.4 Would failure of structural elements of the Project pose risks to communities? (e.g. collapse of buildings or infrastructure)</p>   | Yes |
| <p>3.5 Would the proposed Project be susceptible to or lead to increased vulnerability to earthquakes, subsidence, landslides, erosion, flooding or extreme climatic conditions?</p>   | No  |

<sup>34</sup> In regards to CO<sub>2</sub>, 'significant emissions' corresponds generally to more than 25,000 tons per year (from both direct and indirect sources). [The Guidance Note on Climate Change Mitigation and Adaptation provides additional information on GHG emissions.]

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| 3.6  | Would the Project result in potential increased health risks (e.g. from water-borne or other vector-borne diseases or communicable infections such as HIV/AIDS)?  | Yes |
| 3.7  | Does the Project pose potential risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during Project construction, operation, or decommissioning?   | Yes |
| 3.8  | Does the Project involve support for employment or livelihoods that may fail to comply with national and international labor standards (i.e. principles and standards of ILO fundamental conventions)?  | No  |
| 3.9  | Does the Project engage security personnel that may pose a potential risk to health and safety of communities and/or individuals (e.g. due to a lack of adequate training or accountability)?   | No  |
| <b>Standard 4: Cultural Heritage</b>             |   |     |
| 4.1  | Will the proposed Project result in interventions that would potentially adversely impact sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: Projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts) | No  |
| 4.2  | Does the Project propose utilizing tangible and/or intangible forms of cultural heritage for commercial or other purposes?  | No  |
| <b>Standard 5: Displacement and Resettlement</b> |   |     |
| 5.1  | Would the Project potentially involve temporary or permanent and full or partial physical displacement?   | No  |
| 5.2  | Would the Project possibly result in economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?  | No  |
| 5.3  | Is there a risk that the Project would lead to forced evictions? <sup>35</sup>  | No  |
| 5.4  | Would the proposed Project possibly affect land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?  | No  |
| <b>Standard 6: Indigenous Peoples</b>            |   |     |
| 6.1  | Are indigenous peoples present in the Project area (including Project area of influence)?   | No  |

<sup>35</sup> Forced evictions include acts and/or omissions involving the coerced or involuntary displacement of individuals, groups, or communities from homes and/or lands and common property resources that were occupied or depended upon, thus eliminating the ability of an individual, group, or community to reside or work in a particular dwelling, residence, or location without the provision of, and access to, appropriate forms of legal or other protections.

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| 6.2   | Is it likely that the Project or portions of the Project will be located on lands and territories claimed by indigenous peoples?  | No  |
| 6.3   | Would the proposed Project potentially affect the rights, lands and territories of indigenous peoples (regardless of whether Indigenous Peoples possess the legal titles to such areas)?  | No  |
| 6.4   | Has there been an absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?  | No  |
| 6.4   | Does the proposed Project involve the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?  | No  |
| 6.5   | Is there a potential for forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources?   | No  |
| 6.6   | Would the Project adversely affect the development priorities of indigenous peoples as defined by them?   | No  |
| 6.7   | Would the Project potentially affect the traditional livelihoods, physical and cultural survival of indigenous peoples?   | No  |
| 6.8   | Would the Project potentially affect the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices?  | No  |
| <b>Standard 7: Pollution Prevention and Resource Efficiency</b> |   |     |
| 7.1   | Would the Project potentially result in the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?  | No  |
| 7.2   | Would the proposed Project potentially result in the generation of waste (both hazardous and non-hazardous)?  | Yes |
| 7.3   | Will the proposed Project potentially involve the manufacture, trade, release, and/or use of hazardous chemicals and/or materials? Does the Project propose use of chemicals or materials subject to international bans or phase-outs?<br><i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Stockholm Conventions on Persistent Organic Pollutants or the Montreal Protocol</i> | No  |
| 7.4   | Will the proposed Project involve the application of pesticides that may have a negative effect on the environment or human health?   | No  |
| 7.5   | Does the Project include activities that require significant consumption of raw materials, energy, and/or water?  | Yes |

## ANNEX V: PROJECT SELECTION CRITERIA FOR HCFS

The selection of the model facilities/hospitals and treatment modalities should take the following criteria into consideration (criteria are listed in random order):

- The selection of model facilities should be consistent with the priorities of the **National Health Care Waste Management Plan** (from here on referred to as "the National Plan")<sup>36</sup> and/or a **HCWM roadmap**<sup>2</sup>.

*A National Plan generally includes planned treatment approaches in the country (i.e., the combinations of urban centralized, peri-urban centralized or decentralized, peri-urban clusters, rural clusters, remote decentralized, etc.).*

*A roadmap is the planning for implementation of the NHCWMP. As such it determines the priorities - not just priorities in terms of treatment approaches, but also geographic priorities, priorities related to types and sizes of hospitals, priorities regarding specific types of waste (e.g., sharps), priorities based on landfill plans, etc.*

- **Build on and link to other health systems strengthening efforts:** Often facilities are (or have been/will be) participating in activities that have a bearing on healthcare waste management, such as injection safety and infection prevention and control efforts. Linking such efforts (possibly supported by the MoH, WHO, etc.) to HCWM activities under the proposed project can be mutually beneficial.
- **Large waste generators with an underdeveloped HCWM system:** To achieve the most significant improvements in terms of UPOPs and Mercury emission reductions (and from quantitative health risks assessment perspective), most effort according to the Pareto principle should be placed on facilities that produce larger quantities of waste and have an underdeveloped healthcare waste management system in place. For most countries, the vast majority of healthcare waste is produced by hospitals<sup>37</sup>.
- **Commitment to the project's mission, vision and values:** Demonstration by hospital management and staff of commitment to the project's mission, vision and values (e.g. *at a minimum with a letter of intent and a letter of co-financing*).
- **Hospital's ability and readiness to:**
  - (a) Contribute financially and logistically to set up a healthcare waste management system comprised of best HCWM practices and a non-combustion treatment technology;
  - (b) Allocate human resources for co-operation with the project;
  - (c) Remove from use any batch type and poor quality incinerators to be replaced by a non-combustion treatment method;

<sup>36</sup> Presumably, national plans and strategic roadmaps already take into account the development of transportation, recycling, landfill disposal, wastewater disposal, chemical waste treatment, and other relevant infrastructures.

<sup>37</sup> Perhaps there might be opportunities where the system of support between rural and district facilities can be strengthened (in Zanzibar maybe?) to build capacity and accountability, while focus remains on the larger/hospital sites.

(d) Monitor and document HCWM practices and the treatment process in order to meet benchmarks set by the project; and

(e) Sustain good HCWM practices or its on-site system during and beyond the duration of the project's duration.

*Note 1: The existing draft Memorandum of Understanding (MOU)<sup>38</sup> between a GEF/UNDP HCWM project and a model healthcare facility, which outlines the roles and responsibilities of a healthcare facility participating in this type of projects, would preferably be shared with potential HCFs so they will be fully informed of the facilities responsibilities in the future project.*

*Note 2: The GEF UNDP project reserves the right to transfer the equipment to another facility if the hospital does not meet the benchmarks set by the project or does not maintain the HCWM system.*

- **Hospital's willingness to implement a mercury reduction program** and to become a mercury-free healthcare facility.
- **Potential to implement a recycling program for non-hazardous waste.**
- **Highly visible and influential hospitals:** Status of leadership of the hospital within the health sector and its ability to influence or effect change in other hospitals. Preferably, highly regarded hospitals at national or regional level are selected so its participation in the project is expected to positively influence the rest of the health sector. The hospital should be able to serve as a point of learning and dissemination for other facilities (*for example a teaching hospital*).
- **Experience in the type of monitoring and reporting that would be desired for this project**, for example through activities implemented with external funding modalities (other than the national central budget agency), such as international agencies (UN, INGOs) or bi-lateral aid agencies (PEPFAR, Global Fund, GAVI, etc.).
- **Established work safety practices;** Leverage on existing facilities that has adopted occupational health and safety practices as well as encouraging and support others that are willing and ready to adopt to such safety practices.
- **Multi-profile hospitals;** Teaching facilities with international exposure with a lot of expertise that has the probability to advocate and influence others on the adoption of best healthcare waste practices and management

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<sup>38</sup> Prepared as part of the GEF/UNDP/WHO/HCWH Global Medical Waste Project can be downloaded from here: <http://www.gefmedwaste.org/downloads/MOU%20template%20for%20the%20model%20facility%20June%202009%20UNDP%20GEF%20Project.pdf>

## ANNEX VI: I-RAT RESULTS OF PRE-SELECTED HCFs

Table 12: I-RATs results of Pre-Selected Health Care Facilities

| Name of HCF                  | Facility Type      | Number of Beds | Occupancy rate (%) | Average OPD Attendance | I-RAT Results |
|------------------------------|--------------------|----------------|--------------------|------------------------|---------------|
| KATH                         | Teaching Hospital  | 1200           | 91.7               | 26,909                 | 79            |
| Central Regional Hospital    | Regional Hospital  | 240            | 68                 | 347                    | 56            |
| Trauma & Specialist Hospital | Trauma Hospital    | 135            | N/A                | 94                     | 51            |
| 37 Military Hospital         | Military Hospital  | 518            | 66.9               | 641                    | 66            |
| Koforidua Regional Hospital  | Regional Hospital  | 350            | 65                 | 700                    | 69            |
| Tarkwa Government Hospital   | Municipal Hospital |                |                    |                        | N/A           |
| Tamale Teaching Hospital     | Teaching Hospital  |                |                    |                        | N/A           |



**ANNEX VII: UNDP PROJECT CYCLE MANAGEMENT SERVICES DEFINED BY THE GEF COUNCIL**

**UNDP Project Cycle Management Services**

| Stage   | Country Office <sup>39</sup>  | UNDP/GEF at regional and global level  |
|---|---|--|
| <b>Identification, Sourcing/Screening of Ideas, and Due Diligence</b> | Identify project ideas as part of country programme/CPAP and UNDAF/CCA.   | RTA role: <ul style="list-style-type: none"> <li>• Technical input to CCA/UNDAFs and CPAPs where appropriate.</li> <li>• Input on policy alignment between projects and programmes.</li> <li>• Provide information on substantive issues and specialized funding opportunities (SOFs).</li> <li>• Policy advisory services including identifying, accessing, combining and sequencing financing.</li> <li>• Verify potential eligibility of identified idea.</li> </ul>  |
|   | Assist proponent to formulate project idea / prepare project idea paper (e.g. GEF PIF/PPG), and ensuring it is aligned with country outcomes and UNDP Strategic Plan key results, and included in Country Office Integrated Work Plan in the ERBM Platform. | RTA role: <ul style="list-style-type: none"> <li>• Research and development.</li> <li>• Provide up-front guidance.</li> <li>• Sourcing of technical expertise.</li> <li>• Verification of technical reports and project conceptualization.</li> <li>• Guidance on SOF expectations and requirements.</li> <li>• Undertake pre-screening of potential environmental and social opportunities and risks.</li> <li>• Training and capacity building for the Environmental Officers at the Country Offices, as part of annual Regional Community of Practice meeting or during the RTA's mission(s) in the country.</li> </ul> |
|   | <i>Appraisal:</i> <ul style="list-style-type: none"> <li>• Review and appraise project idea.</li> <li>• Undertake capacity assessments of implementing partner as per UNDP POPP.</li> <li>• Monitor project cycle milestones.</li> </ul>                    | RTA and PTA role <ul style="list-style-type: none"> <li>• Provide detailed screening against technical, financial, and risk criteria.</li> <li>• Determine likely eligibility against identified SOF.</li> </ul>   |

<sup>39</sup> As per UNDP POPP with additional SOF requirements where relevant.

| Stage  | Country Office <sup>39</sup>   | UNDP/GEF at regional and global level   |
|--|--|---|
|  | <i>Partners:</i> <ul style="list-style-type: none"> <li>Assist proponent to identify and negotiate with relevant partners, co-financiers, etc</li> </ul>   | RTA role: <ul style="list-style-type: none"> <li>Assist in identifying technical partners.</li> <li>Validate partner technical abilities.</li> </ul>  |
|  | <i>Obtain clearances:</i> <ul style="list-style-type: none"> <li>Government, UNDP, Implementing Partner, LPAC, co-financiers, etc.</li> </ul>  | RTA and PTA role: <ul style="list-style-type: none"> <li>Obtain SOF clearances.</li> </ul>  |
| <b>Project Development</b>   | <i>Initiation Plan:</i> <ul style="list-style-type: none"> <li>Coordination, management and financial oversight of UNDP Initiation Plan</li> <li>Discuss management arrangements</li> </ul>  | RTA and PA role: <ul style="list-style-type: none"> <li>Assist in preparation of UNDP Initiation Plan</li> <li>Technical support, backstopping and troubleshooting.</li> <li>Support discussions on management arrangements</li> <li>Facilitate issuance of DOA</li> </ul>  |
|  | <i>Project Document:</i> <ul style="list-style-type: none"> <li>Support project development, assist proponent to identify and negotiate with relevant partners, co-financiers, etc.</li> <li>Undertake environmental and social screening of project before PAC. Ensure Environmental and Social Screening Procedure (ESSP) documentation is signed by the Resident Representative or Chair of PAC meeting and attached as Annex to the Project Document.</li> <li>Review, appraise, finalize Project Document.</li> <li>Negotiate and obtain clearances and signatures – Government, UNDP, Implementing Partner, co-financiers, etc. Coordinate LPAC and document meeting decisions.</li> <li>Respond to information requests, arrange revisions etc.</li> <li>Prepare operational and financial reports on development stage as needed.</li> </ul> | RTA role: <ul style="list-style-type: none"> <li>Sourcing of technical expertise.</li> <li>Verification of technical reports and project conceptualization.</li> <li>Guidance on SOF expectations and requirements.</li> <li>Negotiate and obtain clearances by SOF</li> <li>Respond to information requests, arrange revisions etc.</li> <li>Quality assurance and due diligence.</li> </ul> |
| <b>Key UNDP/GEF management performance indicators/targets for Project Development:</b> <ol style="list-style-type: none"> <li>Time between PIF approval to CEO endorsement for each project:           <ul style="list-style-type: none"> <li>Target for GEF trust fund project: FSP = 18 months or less, MSP 12 months or less.</li> <li>Target for LDCF and SCCF FSP/MSP = 12 months or less.</li> </ul> </li> <li>Time between CEO endorsement to project document signature:           <ul style="list-style-type: none"> <li>Target = 4 months or less</li> </ul> </li> </ol> |  |   |

| Stage             | Country Office <sup>39</sup>  | UNDP/GEF at regional and global level   |
|-------------------|---|---|
| Project Oversight | <i>Management Oversight and support</i>   | <i>Technical and SOF Oversight and support</i>  |
|                   | <i>Project Launch/Inception Workshop</i> <ul style="list-style-type: none"> <li>• Preparation and coordination.</li> <li>• Participate in Inception Workshop</li> </ul>   | RTA role: <ul style="list-style-type: none"> <li>• Technical support in preparing TOR and verifying expertise for technical positions.</li> <li>• Participate in recruitment process for Chief Technical Advisor and/or Project Manager, if RTA elects to do so.</li> <li>• Verification of technical validity / match with SOF expectations of inception report.</li> <li>• Participate in Inception Workshop</li> </ul> |
|                   | <i>Management arrangements:</i> <ul style="list-style-type: none"> <li>• Facilitate consolidation of the Project Management Unit, where relevant.</li> <li>• Facilitate and support Project Board meetings as outlined in project document and agreed with UNDP RTA.</li> <li>• Provide project assurance role if specified in project document.</li> <li>• Ensure completion of timesheets as required.</li> </ul> | RTA role: <ul style="list-style-type: none"> <li>• Technical input and support to TOR development. Troubleshooting support.</li> <li>• Support in sourcing of potentially suitable candidates and subsequent review of CVs/recruitment process.</li> </ul>  |
|                   | <i>Annual Work Plan:</i> <ul style="list-style-type: none"> <li>• Issuance of AWP.</li> <li>• Monitor implementation of the annual work plan and timetable.</li> </ul>  | RTA and PA role: <ul style="list-style-type: none"> <li>• Advisory services as required</li> <li>• Review AWP, and clear for ASL where relevant.</li> </ul>   |
|                   | <i>Financial management:</i> <ul style="list-style-type: none"> <li>• Conduct budget revisions, verify expenditures, advance funds, issue combined delivery reports, and ensure no over-expenditure of budget.</li> <li>• Ensure necessary audits.</li> </ul>   | RTA, PA and Finance Unit roles: <ul style="list-style-type: none"> <li>• Allocation of ASLs, based on cleared AWP</li> <li>• Return of unspent funds to donor</li> <li>• Monitor projects to ensure activities funded by donor comply with agreements and project document</li> <li>• Oversight and monitoring to ensure financial transparency and clear reporting to the donor</li> </ul>                               |

| Stage | Country Office <sup>39</sup>   | UNDP/GEF at regional and global level   |
|-------|--|---|
|       | <p><i>Results Management:</i></p> <ul style="list-style-type: none"> <li>• Alignment: link project output to CPAP Outcome in project tree in Atlas, link CPAP outcome in project tree to UNDP Strategic Key Result Area as outlined in project document during UNDP work planning Gender: In ATLAS, rate each output on a scale of 0-3 for gender relevance.</li> <li>• UNDP monitoring requirements: Monitor progress on quarterly basis in IWP, and monitor risks in Atlas.</li> <li>• Submit annual APR/PIR report.</li> <li>• Arrange mid-term review: prepare TOR, hire personnel, plan and facilitate mission / meetings / debriefing, circulate draft and final reports.</li> <li>• Submit GEF Focal Area Tracking Tool completed by Project Team to mid-term review team.</li> <li>• Ensure tracking of committed and actual co financing as part of mid-term review.</li> <li>• Ensure translation of mid-term review into English.</li> <li>• Prepare management response to mid-term review.</li> <li>• Annual site visits – at least one site visit per year, report to be circulated no later than 2 weeks after visit completion.</li> </ul> | <p>RTA role:</p> <ul style="list-style-type: none"> <li>• Advisory services as required.</li> <li>• Quality assurance.</li> <li>• Project visits – technical support visit during life of Project as required.</li> </ul> |

| Stage   | Country Office <sup>39</sup>   | UNDP/GEF at regional and global level   |
|---|--|---|
|   | <p><i>Evaluation:</i></p> <ul style="list-style-type: none"> <li>• Integrate project terminal evaluation into CO evaluation plan. Identify synergies with country outcome evaluations.</li> <li>• Arrange terminal evaluation: prepare TOR, hire personnel, plan and facilitate mission / meetings / debriefing, circulate draft and final reports.</li> <li>• Submit GEF Focal Area Tracking Tool completed by Project Team to evaluation team.</li> <li>• Ensure tracking of committed and actual co financing as part of terminal evaluation.</li> <li>• Ensure translation of terminal evaluation into English.</li> <li>• Prepare management response to terminal evaluation and post both terminal evaluation report and management response in UNDP ERC.</li> <li>• Facilitate and participate in other UNDP and GEF evaluations as necessary.</li> </ul> | <p>RTA, PA, RKS roles:</p> <ul style="list-style-type: none"> <li>• Technical support and analysis.</li> <li>• Quality assurance.</li> <li>• Compilation of lessons and consolidation of learning.</li> <li>• Dissemination of technical findings.</li> <li>• Participate as necessary in other SOF evaluations.</li> </ul> |
|   | <p><i>Project Closure:</i></p> <ul style="list-style-type: none"> <li>• Final budget revision and financial closure (within 12 months after operational completion).</li> <li>• Final reports as required by donor and/or UNDP-GEF.</li> </ul>   | <p>RTA, PA role:</p> <ul style="list-style-type: none"> <li>• Advisory services as required.</li> <li>• Technical input.</li> <li>• Quality assurance.</li> </ul>   |
| <p><b>Key UNDP GEF management performance indicators/targets for Project Oversight:</b></p> <ol style="list-style-type: none"> <li>1. Each project aligned with country outcomes and UNDP Strategic Plan key results, and included in Country Office Integrated Work Plan in the ERBM: <ul style="list-style-type: none"> <li>• Target = 100%</li> </ul> </li> <li>2. Quality rating of annual APR/PIRs: Once completed and submitted, the quality of each project APR/PIR is rated by an external reviewer <ul style="list-style-type: none"> <li>• Target = Rating of Satisfactory or above</li> </ul> </li> <li>3. Quality rating of Terminal Evaluation report: Once completed, the quality of the terminal evaluation report is rated by the UNDP Evaluation Office <ul style="list-style-type: none"> <li>• Target = Rating of Satisfactory or above</li> </ul> </li> <li>4. Quality of results achieved by project as noted in terminal evaluation: the independent evaluator assigns an overall rating to the outcome achieved by the project and this rating is validated by the UNDP Evaluation Office <ul style="list-style-type: none"> <li>• Target = Satisfactory or above</li> </ul> </li> </ol> |  |   |

## **ANNEX VIII: SUPPLEMENTAL PROVISIONS TO THE PROJECT DOCUMENT**

### **Standard annex to project documents for use in countries which are not parties to the Standard Basic Assistance Agreement (SBAA)**

#### **Standard Text: Supplemental Provisions to the Project Document:**

##### **The Legal Context**

##### **General responsibilities of the Government, UNDP and the executing agency**

1. All phases and aspects of UNDP assistance to this project shall be governed by and carried out in accordance with the relevant and applicable resolutions and decisions of the competent United Nations organs and in accordance with UNDP's policies and procedures for such projects, and subject to the requirements of the UNDP Monitoring, Evaluation and Reporting System.
2. The Government shall remain responsible for this UNDP-assisted development project and the realization of its objectives as described in this Project Document.
3. Assistance under this Project Document being provided for the benefit of the Government and the people of Ghana, the Government shall bear all risks of operations in respect of this project.
4. The Government shall provide to the project the national counterpart personnel, training facilities, land, buildings, equipment and other required services and facilities. It shall designate the Government Co-operating Agency named in the cover page of this document (hereinafter referred to as the "Co-operating Agency"), which shall be directly responsible for the implementation of the Government contribution to the project.
5. The UNDP undertakes to complement and supplement the Government participation and will provide through the Executing Agency the required expert services, training, equipment and other services within the funds available to the project.
6. Upon commencement of the project the Executing Agency shall assume primary responsibility for project execution and shall have the status of an independent contractor for this purpose. However, that primary responsibility shall be exercised in consultation with UNDP and in agreement with the Co-operating Agency. Arrangements to this effect shall be stipulated in the Project Document as well as for the transfer of this responsibility to the Government or to an entity designated by the Government during the execution of the project.
7. Part of the Government's participation may take the form of a cash contribution to UNDP. In such cases, the Executing Agency will provide the related services and facilities and will account annually to the UNDP and to the Government for the expenditure incurred.

**(a) Participation of the Government**

1. The Government shall provide to the project the services, equipment and facilities in the quantities and at the time specified in the Project Document. Budgetary provision, either in kind or in cash, for the Government's participation so specified shall be set forth in the Project Budgets.
2. The Co-operating Agency shall, as appropriate and in consultation with the Executing Agency, **assign a director for the project on a full-time basis**. He shall carry out such responsibilities in the project as are assigned to him by the Co-operating Agency.
3. The estimated cost of items included in the Government contribution, as detailed in the Project Budget, shall be based on the best information available at the time of drafting the project proposal. It is understood that price fluctuations during the period of execution of the project may necessitate an adjustment of said contribution in monetary terms; the latter shall at all times be determined by the value of the services, equipment and facilities required for the proper execution of the project.
4. Within the given number of man-months of personnel services described in the Project Document, minor adjustments of individual assignments of project personnel provided by the Government may be made by the Government in consultation with the Executing Agency, if this is found to be in the best interest of the project. UNDP shall be so informed in all instances where such minor adjustments involve financial implications.
5. The Government shall continue to pay the local salaries and appropriate allowances of national counterpart personnel during the period of their absence from the project while on UNDP fellowships.
6. The Government shall defray any customs duties and other charges related to the clearance of project equipment, its transportation, handling, storage and related expenses within the country. It shall be responsible for its installation and maintenance, insurance, and replacement, if necessary, after delivery to the project site.
7. The Government shall make available to the project - subject to existing security provisions - any published and unpublished reports, maps, records and other data which are considered necessary to the implementation of the project.
8. Patent rights, copyright rights and other similar rights to any discoveries or work resulting from UNDP assistance in respect of this project shall belong to the UNDP. Unless otherwise agreed by the Parties in each case, however, the Government shall have the right to use any such discoveries or work within the country free of royalty and any charge of similar nature.
9. The Government shall assist all project personnel in finding suitable housing accommodation at reasonable rents.
10. The services and facilities specified in the Project Document which are to be provided to the project by the Government by means of a contribution in cash shall be set forth in the Project Budget. Payment of this amount shall be made to the UNDP in accordance with the Schedule of Payments by the Government.

11. Payment of the above-mentioned contribution to the UNDP on or before the dates specified in the Schedule of Payments by the Government is a prerequisite to commencement or continuation of project operations.

**(b) Participation of the UNDP and the executing agency**

1. The UNDP shall provide to the project through the Executing Agency the services, equipment and facilities described in the Project Document. Budgetary provision for the UNDP contribution as specified shall be set forth in the Project Budget.
2. The Executing Agency shall consult with the Government and UNDP on the candidature of the Project Manager  
  
a/ who, under the direction of the Executing Agency, will be responsible in the country for the Executing Agency's participation in the project. The Project Manager shall supervise the experts and other agency personnel assigned to the project, and the on-the-job training of national counterpart personnel. He shall be responsible for the management and efficient utilization of all UNDP-financed inputs, including equipment provided to the project.
3. The Executing Agency, in consultation with the Government and UNDP, shall assign international staff and other personnel to the project as specified in the Project Document, select candidates for fellowships and determine standards for the training of national counterpart personnel.
4. Fellowships shall be administered in accordance with the fellowships regulations of the Executing Agency.  
  
a/ May also be designated Project Coordinator or Chief Technical Adviser, as appropriate.
5. The Executing Agency may, in agreement with the Government and UNDP, execute part or all of the project by subcontract. The selection of subcontractors shall be made, after consultation with the Government and UNDP, in accordance with the Executing Agency's procedures.
6. All material, equipment and supplies which are purchased from UNDP resources will be used exclusively for the execution of the project, and will remain the property of the UNDP in whose name it will be held by the Executing Agency. Equipment supplied by the UNDP shall be marked with the insignia of the UNDP and of the Executing Agency.
7. Arrangements may be made, if necessary, for a temporary transfer of custody of equipment to local authorities during the life of the project, without prejudice to the final transfer.
8. Prior to completion of UNDP assistance to the project, the Government, the UNDP and the Executing Agency shall consult as to the disposition of all project equipment provided by the UNDP. Title to such equipment shall normally be transferred to the Government, or to an entity nominated by the Government, when it is required for continued operation of the project or for activities following directly therefrom. The UNDP may, however, at its discretion, retain title to part or all of such equipment.



9. At an agreed time after the completion of UNDP assistance to the project, the Government and the UNDP, and if necessary the Executing Agency, shall review the activities continuing from or consequent upon the project with a view to evaluating its results.
10. UNDP may release information relating to any investment oriented project to potential investors, unless and until the Government has requested the UNDP in writing to restrict the release of information relating to such project.

### **Rights, Facilities, Privileges and Immunities**

1. In accordance with the Agreement concluded by the United Nations (UNDP) and the Government concerning the provision of assistance by UNDP, the personnel of UNDP and other United Nations organizations associated with the project shall be accorded rights, facilities, privileges and immunities specified in said Agreement.
2. The Government shall grant UN volunteers, if such services are requested by the Government, the same rights, facilities, privileges and immunities as are granted to the personnel of UNDP.
3. The Executing Agency's contractors and their personnel (except nationals of the host country employed locally) shall:
  - (a) Be immune from legal process in respect of all acts performed by them in their official capacity in the execution of the project;
  - (b) Be immune from national service obligations;
  - (c) Be immune together with their spouses and relatives dependent on them from immigration restrictions;
  - (d) Be accorded the privileges of bringing into the country reasonable amounts of foreign currency for the purposes of the project or for personal use of such personnel, and of withdrawing any such amounts brought into the country, or in accordance with the relevant foreign exchange regulations, such amounts as may be earned therein by such personnel in the execution of the project;
  - (e) Be accorded together with their spouses and relatives dependent on them the same repatriation facilities in the event of international crisis as diplomatic envoys.
4. All personnel of the Executing Agency's contractors shall enjoy inviolability for all papers and documents relating to the project.
5. The Government shall either exempt from or bear the cost of any taxes, duties, fees or levies which it may impose on any firm or organization which may be retained by the Executing Agency and on the personnel of any such firm or organization, except for nationals of the host country employed locally, in respect of:
  - (a) The salaries or wages earned by such personnel in the execution of the project;

- (b) Any equipment, materials and supplies brought into the country for the purposes of the project or which, after having been brought into the country, may be subsequently withdrawn therefrom;
- (c) Any substantial quantities of equipment, materials and supplies obtained locally for the execution of the project, such as, for example, petrol and spare parts for the operation and maintenance of equipment mentioned under (b), above, with the provision that the types and approximate quantities to be exempted and relevant procedures to be followed shall be agreed upon with the Government and, as appropriate, recorded in the Project Document; and
- (d) As in the case of concessions currently granted to UNDP and Executing Agency's personnel, any property brought, including one privately owned automobile per employee, by the firm or organization or its personnel for their personal use or consumption or which after having been brought into the country, may subsequently be withdrawn therefrom upon departure of such personnel.

6. The Government shall ensure:

- (a) prompt clearance of experts and other persons performing services in respect of this project; and
- (b) the prompt release from customs of:

- i. equipment, materials and supplies required in connection with this project; and
- ii. Property belonging to and intended for the personal use or consumption of the personnel of the UNDP, its Executing Agencies, or other persons performing services on their behalf in respect of this project, except for locally recruited personnel.

7. The privileges and immunities referred to in the paragraphs above, to which such firm or organization and its personnel may be entitled, may be waived by the Executing Agency where, in its opinion or in the opinion of the UNDP, the immunity would impede the course of justice and can be waived without prejudice to the successful completion of the project or to the interest of the UNDP or the Executing Agency.
8. The Executing Agency shall provide the Government through the resident representative with the list of personnel to whom the privileges and immunities enumerated above shall apply.
9. Nothing in this Project Document or Annex shall be construed to limit the rights, facilities, privileges or immunities conferred in any other instrument upon any person, natural or juridical, referred to hereunder.

### **Suspension or Termination of Assistance**

1. The UNDP may by written notice to the Government and to the Executing Agency concerned suspend its assistance to any project if in the judgement of the UNDP any circumstance arises which interferes with or threatens to interfere with the successful completion of the project or the accomplishment of its purposes. The UNDP may, in the same or a subsequent written notice, indicate the conditions under which it is prepared to resume its assistance to the project. Any such suspension shall continue until such time as such

conditions are accepted by the Government and as the UNDP shall give written notice to the Government and the Executing Agency that it is prepared to resume its assistance.

2. If any situation referred to in paragraph 1, above, shall continue for a period of fourteen days after notice thereof and of suspension shall have been given by the UNDP to the Government and the Executing Agency, then at any time thereafter during the continuance thereof, the UNDP may by written notice to the Government and the Executing Agency terminate the project.
3. The provisions of this paragraph shall be without prejudice to any other rights or remedies the UNDP may have in the circumstances, whether under general principles of law or otherwise

## ANNEX IX: STANDARD LETTER OF AGREEMENT BETWEEN UNDP AND THE GOVERNMENT OF THE REPUBLIC OF GHANA FOR THE PROVISION OF SUPPORT SERVICES

### HOW TO USE THIS LETTER OF AGREEMENT

- This agreement is used to provide appropriate legal coverage when the UNDP country office provides support services under national execution.
- This agreement must be signed by a governmental body or official authorised to confer full legal coverage on UNDP. (This is usually the Minister of Foreign Affairs, the Prime Minister /or Head of State.) The UNDP country office must verify that the government signatory has been properly authorised to confer immunities and privileges.
- A copy of the signed standard letter will be attached to each PSD and project document requiring such support services. When doing this, the UNDP country office completes the attachment to the standard letter on the nature and scope of the services and the responsibilities of the parties involved for that specific PSD/project document.
- The UNDP country office prepares the letter of agreement and consults with the regional bureau in case either of the parties wishes to modify the standard text. After signature by the authority authorised to confer immunities and privileges to UNDP, the government keeps one original and the UNDP country office the other original. A copy of the agreement should be provided to UNDP headquarters (BOM/OLPS) and the regional bureau.

Dear **Honourable Minister**,

1. Reference is made to consultations between officials of the Government of *the Republic of Ghana* (hereinafter referred to as "Ministry of Health") and officials of UNDP with respect to the provision of support services by the UNDP country office for nationally managed programmes and projects. UNDP and the Government hereby agree that the UNDP country office may provide such support services at the request of the Government through its institution designated in the relevant programme support document or project document, as described below.
2. The UNDP country office may provide support services for assistance with reporting requirements and direct payment. In providing such support services, the UNDP country office shall ensure that the capacity of the Government-designated institution is strengthened to enable it to carry out such activities directly. The costs incurred by the UNDP country office in providing such support services shall be recovered from the administrative budget of the office.
3. The UNDP country office may provide, at the request of the designated institution, the following support services for the activities of the programme/project:
  - (a) Identification and/or recruitment of project and programme personnel;
  - (b) Identification and facilitation of training activities;
  - (c) Procurement of goods and services;
4. The procurement of goods and services and the recruitment of project and programme personnel by the UNDP country office shall be in accordance with the UNDP regulations, rules, policies and procedures. Support services described in paragraph 3 above shall be detailed in an annex to the programme support document or project document, in the form provided in the Attachment hereto. If the requirements for support services by the country

## ANNEX IX

### DESCRIPTION OF UNDP COUNTRY OFFICE SUPPORT SERVICES

1. Reference is made to consultations between **Ministry of Health**, the institution designated by the Government of *the Republic of Ghana* and officials of UNDP with respect to the provision of support services by the UNDP country office for the nationally managed project “**Reducing UPOPs and Mercury Releases from the Health Sector in Africa (PIMS # 4611)**”, “*The Project*”.

2. In accordance with the provisions of the letter of agreement signed on 27<sup>th</sup> Day of November, 1978] (the “**SBAA**”) and the project support document, the UNDP country office shall provide support services for the Project as described below.

3. Support services to be provided:

| Support services  | Schedule for the provision of the support services | Cost to UNDP of providing such support services (where appropriate)   | Amount and method of reimbursement of UNDP (where appropriate)  |
|---|--|---|---|
| 1. Identification and/or recruitment of project and programme personnel | As and when required                               | Based on the transaction costs of the tasks involved, USD 1,531 implementation support service cost is charged annually to the project as per the signed project document | Based on the transaction costs of the tasks involved, USD 1,531 implementation support service cost is charged annually to the project as per the signed project document |
| 2. Identification and facilitation of training activities;              | As and when required                               |   |   |
| 3. Procurement of goods and services;                                   | As and when required                               |   |   |

4. Description of functions and responsibilities of the parties involved:



**ANNEX X: LOCAL PROJECT APPRAISAL COMMITTEE MEETING MINUTES**

**MINUTES OF LOCAL PROJECT APPRAISAL COMMITTEE (LPAC) MEETING ON  
REDUCING UNINTENTIONAL PERSISTENT ORGANIC POLLUTANTS (UPOPS)  
AND MERCURY RELEASES FROM THE HEALTH SECTOR IN AFRICA  
20<sup>TH</sup> NOVEMBER, 2014**

**Time:** The meeting begun at 10:00 am, with opening prayer by Mr Samuel Allotey

**Venue:** Forest Hotel, Dodowa

| <b>Participants</b>                    | <b>Organization/Institution</b>   |
|--|---|
| 1. Dr. Nicholas Adjabu                 | Ghana Health Service  |
| 2. Christy Ahenkora                    | UNDP Country Representative   |
| 3. Dr. Edith Clarke                    | Ghana Health Service (OEHU)   |
| 4. Mrs. Comfort Kyereme                | Ministry of Health  |
| 5. Mr. Samuel Allotey                  | Ministry of Local Government & Rural<br>Development                     |
| 6. Mr. George Rockson                  | Zoomlion Ghana Limited  |
| 7. Mrs. Irene Parker-Allotey           | Environmental Protection Agency   |
| 8. Mr. Peter Dery                      | Ministry of Environment Science<br>Technology and Innovation            |
| 9. Mr. E. Odjam-Akumatey               | Ecological Restoration  |
| 10. Akosua Kwakye                      | WHO   |
| 11. Mr. Zakari Sumaila                 | Trauma & Specialist Hospital, Winneba                                   |
| 12. Mr. H. Quansah                     | Cape Coast Teaching Hospital  |
| 13. Mrs. Francisca Akorfa Adika-Bensah | Koforidua Regional Hospital   |
| 14. Ms. Abena Baafi                    | UNDP  |
| 15. Mr. George Johnson                 | UNDP  |
| 16. Mr. Michael Ashiagbor              | Zoomlion Ghana Limited  |
| 17. Mr. Dennis Apreku                  | Ministry of Finance   |
| 18. Mr. Allen Seth Anku                | Trauma & Specialist Hospital, Winneba                                   |
| 19. Mr. Eric Yeboah-Danso              | Ghana Health Service (Estate Division)                                  |
| 20. Mr. Richard Amfo-Otu               | Presbyterian University College, Ghana<br>(National Project Consultant) |

## **1. Welcome Remarks/Introduction**

After a thorough country-level project formulation with key stakeholders, a Local Project Appraisal Committee (LPAC) meeting was held to consider and discuss the draft project document for the “Reducing Unintentional Persistent Organic Pollutants (UPOP) and Mercury Releases from the Health Sector in Africa”) for finalization and subsequent endorsement to enable implementation to commence. The representative from the UNDP Country Office, Ms. Christy Ahenkora co-chaired the meeting with the Ministry of Health representative Ms. Comfort Kyeremeh. The chairpersons were supported by the representative of GEF focal person in Ghana, Mr. Peter Dery and two representatives of Ghana Health Service in the persons of Dr Nicholas Adjabu and Dr. Edith Clarke. After self-introduction by participants, brief remarks were given by representatives from UNDP, MoH and GEF on the project.

On her part, the representative from the UNDP Country Office, Ms. Christy Ahenkora indicated that the project has been accepted and approved by GEF and the funds will be disbursed once the project documents for the pilot countries are ready and signed by the government counterparts. The project she added was a four year project starting from 2015 – 2018 with a project budget of USD 6.5 million for the four pilot countries. She emphasized the need for all stakeholders to holistically accept the project as their own and help fine-tune it to make the implementation plausible.

The MoH, GHS and GEF Focal Person representatives expressed their commitment to the project and appreciated the move to include Ghana in such a regional project considering its’ intended benefits to Ghana

## **2. Presentation of Project Document by the Consultant**

The National Consultant, Mr. Richard Amfo-Otu made a presentation of the summary of the project document as outlined below:

### **Background**

- The healthcare sector has been identified as one of the sources of UPOPs and Mercury releases into the environment. African countries lacked capacity to comply with Stockholm Convention’s guidelines on Best Available Technologies (BAT) and Best Environmental Practices (BEP) to reduce UPOPs due to financial constraints and availability of BAT in the region. Mercury usage reduction has been highlighted in the Minamata Convention and improving health care waste management in order to minimise the spread of infection and its associated impacts on health was also stated in the Libreville Declaration on Environment. Ghana is a signatory to these international agreements hence the project aims at supporting Ghana to contribute to its goals as stipulated in the conventions.



- Project aims and objectives
  - Reducing exposure to Unintended Persistent Organic Pollutants and mercury from the health sector.
  - Reduce the infection rates in the health facilities.
 These would be achieved through the following objectives:
  - Implementation of best environmental practices and non-incineration and mercury-free technologies.
  - Ensure the availability and affordability of non-incineration waste treatment technologies in the African region
  
- Project Components: The project has five (5) components of which some would be implemented at the regional level and others at the national level.
  - Component 1: Disseminate technical guidelines, establish mid-term evaluation criteria and technology allocation formula, as well as build teams of national experts on BAT/BEP
  - Component 2: Formulation and implementation of HCW national plans, strategies and policies
  - Component 3:
    - 3a - Making non-incineration HCWM systems and mercury-free devices available and affordable in the African region.
    - 3b - Establish national training infrastructures and demonstrating HCWM systems, recycling, mercury waste management and mercury reduction at the model facilities
  - Component 4:
    - Evaluate the capacities of each recipient country to absorb additional non-incineration HCWM systems and mercury-free devices and for distribution to other centres based on evaluation results
    - Expand HCWM systems and phase-out mercury in the project countries and disseminate results in the African region
  - Component 5: Monitor, evaluate and sharing lessons learnt
  
- The life span of the project is from 2015-2018 and it is being funded by GEF with the following budget details;
  - US\$6.5 million for the regional project
  - US\$1.600 million for Ghana Project Component ( Out of the regional budget)
  
- The four years project has two major phases
  - Phase I – components 1, 2, 3 and 5 in the first two years
  - Phase II – after mid-term evaluation, components 3, 4 and 5 for the next two years
  
- On the next steps, Mr. Richard Amfo-Otu indicated that the project has to go through UNDP internal clearing system before implementation by the first quarter of 2015.

- The Consultant also presented the “Environmental and Social Screening Procedure (ESSP)” for the Ghana project activities to ensure that UNDP quality assurance processes are complied with. The environmental and social risk associated with the implementation project was categorized as “category 3a” meaning some amount of risk exists that can easily be identified and safeguard measures taken before implementation.

### 3. Discussions and Recommendations

After the presentation by the consultant, the following key issues were raised and discussed:

- Governance Structure – Dr. Clarke of Ghana Health Service suggested that if the Management Arrangement for governing the project at the National level does not have Steering Committee, as well as the Advisory Board with the relevant expertise then it should be considered in order to have a successful project implementation. In response, *it was indicated these structures have been proposed by the project.*
- A participant wanted to know what type of platforms and how information about the project will be disseminated. *In response, it was clarified that knowledge sharing platform both at national and regional levels would be done through the CISCO system. Successes and drawbacks will be communicated at workshops and conferences as well.*
- Another participant was of the view that testing of incinerator operators for UPOPs and Mercury level at the start of the project is necessary to track the reduction. However, *the consultant indicated that it may not be necessary since people were exposed to Mercury and UPOPs from different environment but the UNDP representative indicated that it will be considered if it fit into the scope of the project components.*
- Sustainability and exit strategy: Participants wanted to know the sustainability plan and recommended the need for an exit strategy to ensure the sustainability of the project after the support from the funding organization. *In response, the consultant indicated that, there is a sustainability arrangement and that; the exiting plan would be discussed as part of the project inception activities. Consequently, it was suggested that government implementing and responsible entities should take utmost ownership in implementing the project in order to build requisite technical capacity that would ensure the sustainability of the project after the implementation period. Moreover, it was indicated that public private partnership arrangement shall be considered as the best option for sustainability of the project at the exiting point and a competitive private sector partner selection processes and modalities would be used.*
- Synchronization of interventions: During the discussions it came up that WHO and MoH are involved in an ongoing project which involves the usage of incinerators in HCWM.

The WHO representative indicated that the project has been on-going from early 2000 till now but will draw the attention of the office to the new directives. The UNDP country representative also assured participants that the project will be discussed with the donor sector partners to synchronize interventions.

#### **4. Key Recommendations**

- **Project Management:** It was further suggested that there should be a position for a “Project Officer” to coordinate the project from UNDP which is the usual practice whereas the Project Manager and Project Assistant will be based in MoH.
- On the Health and Safety aspect of the Environmental and Social Screening Procedure for the project, it was recommended that immunization against Tetanus, Hepatitis B among other diseases should be added to screening of the waste handlers at the HCFs to make sure they are in good health.
- **Project Quality Assurance:** Participants suggested inclusion of other relevant stakeholders such as MoF, EPA, MoH and WHO to support UNDP to perform the project quality assurance function.
- It was recommended that technical people from respective countries should be included in procuring the equipment for the project to avoid procuring things that will not be beneficial to the project.
- It was recommended that the existing plan for the project should consider public private partnership
- During the deliberations, it came up that WHO has custody of some syringes which need to be recycled therefore the project should use that as a basis to look for market for the recycling of the disinfected syringes. It was also recommended that syringes and other plastics of the same grade should be considered for the marketing to make it economically viable.
- On information and knowledge sharing, it was suggested that partners should be allowed to post project information at their websites to make the information available to the general public.

#### **5. Next steps and Timelines**

- LPAC minutes finalized and shared with participants by 27<sup>th</sup> November, 2014
- Incorporate inputs from the stakeholder meeting as well as LPAC for the draft project document by 1<sup>st</sup> December, 2014.
- Verification of inputs for the draft project document and comments on the LPAC meeting by 3<sup>rd</sup> December, 2014.

## 6. CLOSING

In the absence of any further issues for discussion, the representative from UNDP Country Office requested all participants to adhere to the agreed timelines in order for the project document to be accepted for endorsement and subsequent commencement of implementation in the first quarter of 2015. It was agreed that after 3<sup>rd</sup> December, 2014 if no comment were received, it would be concluded that the project document has been endorsed. The representative then thanked all participants for their valuable contributions toward the finalization of the project document for Ghana. The meeting came to a close on Thursday 20<sup>th</sup> November, 2014 at 1:30pm.

*Recorded by: Mrs. Irene Parker-Allotey and Dennis Apreku*

Signed:

.....EKYREWE.....

.....Wmfl.....

Date: 13<sup>TH</sup> JANUARY 2015

Date: 06 JANUARY, 2015

(MoH Representative)

(UNDP Representative)



