

Sustainability Check on Facility Level

- *Zambia* -

UNDP GEF Project “Reducing UPOPs and Mercury Releases from The
Health Sector in Africa”

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Table of Contents

Background and purpose of this document.....	1
1 Sustainability Areas.....	2
2 Methodology.....	3
2.1 How to use this tool.....	3
2.2 Sustainability Check Tool.....	4
3 Assessment results.....	6
3.1 Overview of results of all project countries.....	6
3.2 Country results: Zambia.....	7
4 Discussion of results.....	9
5 Annex: Questionnaire.....	10

List of Figures

Figure 1	Ranking of sustainability areas of all project facilities in the 4 project countries ...	6
Figure 2	All-over ranking of sustainability level of all facilities in Ghana	7
Figure 3	Comparison of rating between facilities.....	7

List of Tables

Table 1	Lowest sustainability areas in the project facilities.....	8
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Abbreviations

GEF	Global Environment Facility
HCW	Healthcare Waste
HCWH	Health Care Without Harm
HCWM	Healthcare Waste Management
MoH	Ministry of Health
POPs	Persistent Organic Pollutants
SOP	Standard Operating Procedure
UNDP	United Nations Development Programme
UPOPs	Unintentional Persistent Organic Pollutants
WHO	World Health Organisation

Background and purpose of this document

The regional component of the GEF-funded project entitled “Reducing UPOPs and Mercury Releases from The Health Sector in Africa” was launched in December 2015 and will end in December 2020. 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.

The project promotes best practices and techniques for healthcare 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 also supports 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.

The Brundtland Commission of the United Nations in 1987 defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” The definition of sustainability varies depending on the area of focus.

The goal of this document **to identify and analyse the major areas which indicates sustainability on facility level for Zambia at the final stage of this project.**

The focus lays specific on the sustainability of the implemented safe and environmental sound HCWM system in the target health facilities of this project. The project supported the assessed health facilities with the set-up of a proper HCWM system including the use of autoclaving systems to decontaminate the infectious and sharp waste in an environmentally friendly manner. This simple tool can be used by the local project team or an independent consultant to conduct a quick assessment in the facility on the sustainability level of specific project aspects. It aims to identify the potential stronger or weaker sustainability area in one given country / project, rather than a tool to compare success between projects.

1 Sustainability Areas

Based on the discussion of the project team 10 major areas which indicate the level of sustainability of the project activities at facility level have been identified:

1. Responsible person on HCWM
 - A responsible person for HCWM has been appointed, job description is available, is trained and active in sustainably managing waste.
2. HCWM training
 - Medical and non-medical staff receive an orientation training and further regular in-service training on HCWM.
3. Instructions / SOP
 - Instructions / SOP on HCWM are available in the wards and known by the staff.
4. Monitoring system
 - A monitoring system is available and used regularly.
5. Safe system to internally collect and transport and store hazardous waste
 - Generated hazardous waste (e.g. infectious, sharp and mercury containing waste) is well segregated, collected and transported frequently and stored safely (good segregation, infrastructure, adequate equipment and sufficient disposables).
6. Waste treatment system
 - The waste treatment system (autoclaves, shredder, auxiliary equipment) are operational and used for all infectious and sharp waste generated.
7. Maintenance system of waste treatment equipment
 - The waste treatment & management system (needle cutter, logistic system, autoclave and auxiliary equipment) is regularly maintained & cleaned and the maintenance is documented.
8. Consumables & Spare parts
 - Sufficient consumables (for at least 1-month), spare part set for the autoclave and auxiliary treatment equipment (if applicable) is complete, documented and stored at a safe place.
9. Final disposal of treated waste
 - Decontaminated waste is collected and disposed regularly.
10. Budget for HCWM
 - A clear budget line for HCWM is dedicated and sufficient.



2 Methodology

2.1 How to use this tool

One designated person from the national UNDP GEF Africa team is responsible to conduct the interviews or an independent consultant is hired. The advantage to hire an independent consultant is that this person does not have a personal relationship to the hospitals and might be able to deliver results free from bias. The interviewer should be familiar with the methodology of the tool and preferably an independent consultant.

Each of the project facilities which received an autoclave or are connected to a facility with autoclave (cluster facilities) should be assessed. The hospitals should be contacted in forehand to ensure that the responsible person on HCWM in the facility is available to answer the questions and prepare the necessary documentation to proof the answers.

If possible, the interviewer visits all facilities and takes a tour through the health facility to get the information first-hand. An interview via telephone is also possible in case of time or recourse limitation but should be the last resort. However, in case of a phone-based assessment the evidence to proof the reliability of the answers (documents like training participation lists, autoclave logs, etc.) should be send by the facility (e.g. by scans, photos, copies) to the interviewer.

Before starting the assessment, the director of the facility should be informed about the activity.

The following areas of the health facility should be assessed:

- Office of responsible person on HCWM (if available)
- Wards of the facility (collection, transport, training, instructions / SOP, monitoring)
- Waste handling area (storage, treatment, maintenance, monitoring)
- Spare Part Stock (stock management)
- General waste storage area (disposal)
- Financial department (budget)

All information should be filled in the questionnaires orderly. The scores should be filled into the input sheet of the questionnaire for further evaluation.

This tool is meant to assess performance not people and to build a sustainable system.

Names or titles which indicate the person should be excluded from the evaluation tool. The names on the questionnaires are used only if more clarification is needed.

When conducting healthcare waste assessment on sustainability – failures or mistakes on activities should not be discussed during the interview, incorrect behaviours on site should not be corrected on site. Interviewed persons should never be forced to say anything they don't want to say.

2.2 Sustainability Check Tool

In the following the identified sustainability areas have been transferred into questions, to enable the interviewer to receive the needed information in a quick and simple way. The level of compliance is divided into 3 parts: Fully Complies, complies partly or does not comply. To proof the answer relevant documents should be available, on hand and checked by the interviewer. The levels of compliance are indicated by scores to transfer the answers into numbers, which can be easily analysed:

Score	Level of compliance
5	Yes, fully complying
3	Partly complying
0	No, not complying

Note: If the interviews were conducted via phone, some evidence cannot be checked (e.g. staff is aware of the HCWM instructions and SOPs).

The following table outlines the questions, possible answers, the related scores as well as how to prove correctness of the answers.

#	Question / description	Answer / Compliance	Scores	Evidence
1	Is there one trained person, with appropriate decision-making powers, responsible for healthcare waste management available?	Yes	5	<ul style="list-style-type: none"> - Training certificate - Job description - Proof of activities (training / monitoring schedules etc.)
		Partly	3	
		No	0	
2	Is comprehensive training system on HCWM implemented? - Medical and non-medical staff receive an orientation training and ongoing regular in-service training	Yes	5	<ul style="list-style-type: none"> - Annual or monthly training schedule - Training content for new staff (on boarding) and for regular training - Training participation lists
		Partly	3	
		No	0	
3	Are there up to date written instructions / SOPs available? - Instructions / SOPs are available in the wards and known by the staff	Yes	5	<ul style="list-style-type: none"> - Instructions / SOPs are available - Instructions / SOPs are up to date - Distributed to the staff - Known by the staff.
		Partly	3	
		No	0	
4	Is there a system to regularly monitor the healthcare waste management? - A monitoring system is available and used regularly.	Yes	5	<ul style="list-style-type: none"> - Scheduled monitoring plan - Checklists/data sheets - Monitoring report
		Partly	3	
		No	0	

#	Question / description	Answer / Compliance	Scores	Evidence
5	Is there a safe system to internally segregate, collect, transport and store hazardous waste in the facility? - Generated hazardous waste in the facility (e.g. infectious, sharp and mercury containing waste) is well segregated, collected and transported frequently and stored safely (good segregation, infrastructure, adequate equipment).	Yes	5	- Waste log (weighing results of infectious and sharp waste) - Visual check or photo of waste bins, transport equipment, infectious and sharp waste store and mercury store.
		Partly	3	
		No	0	
6	If a waste treatment system for bio-hazardous waste is available, is it operational and used? (Note: If an external service provider is used, this is considered as YES) - The waste treatment system (autoclaves, shredder, auxiliary equipment) are operational and used for all infectious and sharp waste generated.	Yes,	5	- Autoclave logs - Visual check or photo of autoclaved and shredded waste
		Partly	3	
		No	0	
7	Is an actively managed maintenance system for preventive maintenance for healthcare waste treatment & management implemented? - The waste treatment & management system (needle cutter, logistic system, autoclave and auxiliary equipment) is maintained & cleaned regularly and the maintenance is documented.	Yes,	5	- Maintenance log - Visual check proof or photo of status of autoclave / shredder / bins etc.
		Partly	3	
		No	0	
8	Are consumables (e.g. bags, filters, PPE) and spare parts for the Management and treatment of HCW kept in stock? - Sufficient consumables (for at least 1 month), spare part set for the autoclave and auxiliary treatment equipment (if applicable) is complete, documented and stored at a safe place.	Yes	5	- Spare part storage log - Visual check or photo of storage facility and stored equipment / consumables
		Partly	3	
		No	0	
9	Is the final disposal of treated (autoclaved) waste assured? (Note: if the treatment of waste is outsourced it can be assumed that the waste will be correctly disposed of (YES)) - Decontaminated waste is collected and disposed regularly	Yes	5	- Contract with waste collection entity (municipality, private company etc.) in which the collection frequency and the disposal is outlined
		Partly	3	
		No	0	
10	Is there an adequate annual budget for healthcare waste management? - budget line for HCWM is dedicated and sufficient	Yes	5	- Financial plan of the facility: Budget line for HCWM is part of the financial planning for the year
		Partly	3	
		No	0	

3 Assessment results

As each question can reach 5 scores, the minimum score of the 10 sustainability areas of a facility is 50 (10x5) and the lowest is 0. The rate of impacts and sustainability of the facilities can again be displayed by a colour coding system. Furthermore, the lowest sustainability area of each health facility is highlighted in an additional row. This chapter outlines the results of the assessment of each country separated in health facilities with an autoclave and satellite facilities which are connected to a central treatment system (where applicable).

Limitations: The initial idea that an independent consultant or a member of the UNDP country project team travels to all sites for the sustainability check could not be realised due to the travel restriction of the COVID-19 pandemic situation. Therefore, the collection of information could only be done via phone. The received data are based on the information from the responsible person for HCWM in the facilities and therefore is rating of each facility not standardised as the opinion of the staff and reputation of the facility may have influenced the scoring. Therefore, the tool could not be used at its full capacity, as it has been decided that the scoring numbers of the assessment results are not used but the general outline of the results showing the level of sustainability of the different sustainability areas, highlighting the areas which are likely to be sustainable but also the weak points.

3.1 Overview of results of all project countries

The following figure is ranking the sustainability areas in the descending order. The 3 areas with the highest rates were that instructions / SOP on HCWM were mostly available in the wards and known by the staff (1), a responsible person for HCWM has been appointed, job description is available, is trained and active in sustainably managing waste (2) and generated hazardous waste (e.g. infectious, sharp and mercury containing waste) is well segregated, collected and transported frequently and stored safety (3).

The weakest area (10) is the lack of budget for HCWM in most facilities. Another weak area is the missing in-service training of medical and non-medical staff on HCWM in the facilities (9). The maintenance of the waste treatment & management system has been identified as another weak area in the implemented waste system (8).

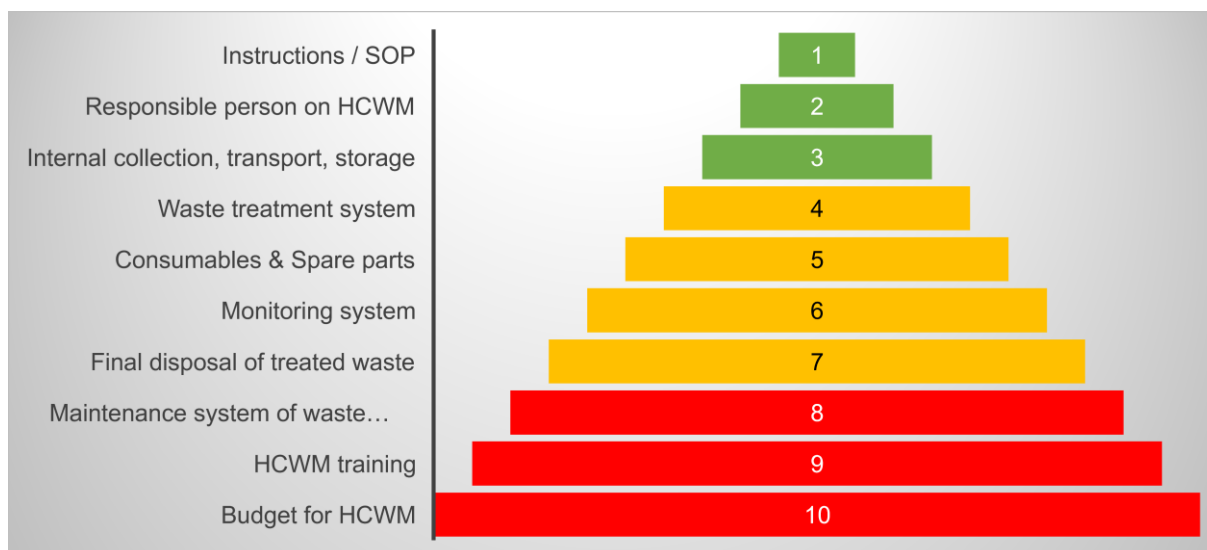


Figure 1 Ranking of sustainability areas of all project facilities in the 4 project countries

3.2 Country results: Zambia

In accordance with the all-results discussed above, also in Zambia the first 2 areas with the highest rates are that a responsible person for HCWM has been appointed, job description is available, is trained and active in sustainably managing waste (1) and the availability and use of instructions / SOP on HCWM (2). Another strong area has been identified in the area of an available and used monitoring system.

Like in the all-over results of all project countries, the **lack of budget** is clearly highlighted as the weakest area. Another weak area – also in compliance with the all-over results is the in-service training on HCWM followed by the availability of consumables and spare parts.

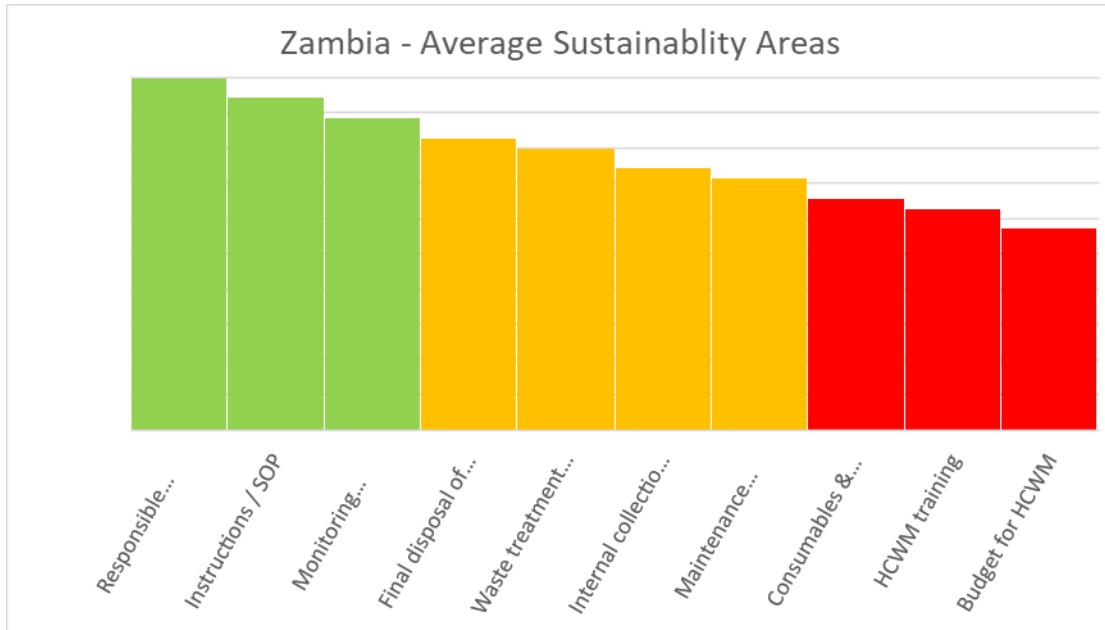


Figure 2 All-over ranking of sustainability level of project facilities in Zambia

Figure 3 shows a quite clear difference of rating in facilities with an autoclave in comparison with the satellite facilities, which are connected to central waste treatment plants. In general the satellite facilities indicated to have a lower level of sustainability than the facilities with an autoclave.

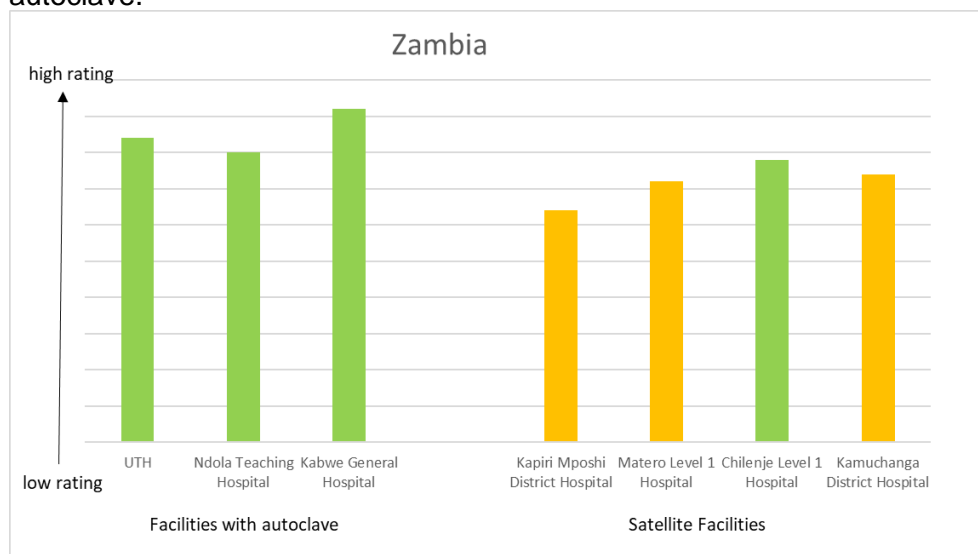


Figure 3 Comparison of ratings between facilities

The table below outlines the lowest sustainability areas of each assessed project health facility. These are in line with the identified weakest areas outlined above – beside these additionally highlighted weak areas are:

- Lack of final disposal of decontaminated waste
- Weak maintenance system for the autoclave and auxiliary waste equipment
- Weak monitoring system

Project health facility	Identified lowest sustainability areas
Facilities with autoclaves	
University Teaching Hospital	Lack of specific budget line Insufficient in-service training Insufficient consumables Lacking final disposal
Ndola Teaching Hospital	Lack of specific budget line Weak maintenance system Insufficient consumables
Kabwe General Hospital	Weak maintenance system, Lacking final disposal
Satellite facilities	
Kapiri Mposhi District Hospital	Lack of specific budget line Weak training Weak monitoring Insufficient consumables
Matero Level 1 Hospital	Lack of specific budget line Insufficient training Insufficient consumables
Chilenje Level 1 Hospital (auto not installed yet)	Lack of specific budget line Insufficient consumables
Kamuchanga District Hospital	Lack of specific budget line No specific in-service training system, Weak monitoring system

Table 1 Lowest sustainability areas in the project facilities

4 Discussion of results

This simple sustainability check tool has been developed in specific for this UNDP GEF project but might be useful also for other projects. It is easy to understand and to use. It is tackling the main sustainability areas but is still short and therefore not too time consuming to be conducted. Based on the simple outlay, only tendencies on which areas are more sustainable than others are identified but can help to learn for future projects.

The methodology outlines that the interviewer of the tool is an independent consultant or one designated person from the national UNDP team to travel to all sites and collect evidence of the ratings during a site visit. As this was not possible due to the COVID-19 pandemic situation, the rating of the results might not be as reliable as aimed. Therefore, it has been decided not to show the results by the level of scores but by the general rating of the sustainability areas. This could be easily elaborated and is providing a good overview.

The results of Zambia are mainly overlapping with the all-over results of the 4 project countries. The weakest area is the lack of a designated budget line and insufficient budget for HCWM. This is in line with another weak area: "available consumables". This indicates that the project could not convince the relevant authorities that HCWM should be a priority in the country and needs budget to operate and maintain it to reach a sustainable system. The final disposal of waste is ranking in the upper field of the mid-range level, although the disposal of decontaminated waste has been a problem in Zambia as some municipalities did not accept the decontaminated waste due to the potential risks for scavengers.

As outlined the satellite facilities indicated to have a lower level of sustainability than the facilities with an autoclave. A reason could be, that the satellite facilities have been included into the project at a later stage and the main focus of the project activities was on the operation of the facilities with autoclave.

It is remarkable that all project facilities reported full compliance (100%) in having a responsible person on HCWM appointed job description is available, is trained and active in sustainably managing waste. In other countries this area is also strong but not with 100 % compliance. This result from Zambia also strengthens the monitoring system on HCWM in the facilities, as this is supposed to be conducted by the responsible person on HCWM in the facilities. The management system introduced by the project was highly accepted and successfully inserted in the all-over management of the facilities.

5 Annex: Questionnaire

Name of the interviewer: _____ Date: _____

Kind of healthcare facility: Hospital Health Point Other _____

Name of Health Facility: _____

City / Village in which the visited healthcare facility is located: _____

The facility is equipped with a waste autoclave: Yes No

Score	Level of compliance
5	Yes, complies
3	Partly, complying
0	No, not complying

#	Question	Scores	Comment / Proof
1	Is there one trained person, with appropriate decision-making powers, responsible for healthcare waste management available?		
2	Is comprehensive in-service training system implemented?		
3	Are there up to date written instructions / SOP available?		
4	Is there a system to regularly monitor the healthcare waste management?		
5	Is there a safe system to internally segregate, collect, transport and store hazardous waste in the facility?		
6	If a waste treatment system for bio-hazardous waste is available, is it operational and used? (Note: If an external service provider is used, this is considered as YES)		
7	Is an actively managed maintenance system for preventive maintenance for healthcare waste treatment & management implemented?		
8	Are consumables (e.g. bags, filters, PPE) and spare parts for the Management and treatment of HCW kept in stock?		
9	Is the final disposal of treated (autoclaved) waste assured? (Note: if the treatment of waste is outsourced it can be assumed that the waste will be correctly disposed of (YES))		
10	Is there an adequate annual budget for healthcare waste management?		
All over score			