PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project
TYPE OF TRUST FUND: GEF Trust Fund

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PART I: PROJECT INFORMATION

Project Title:	Promotion of BAT and BEP to reduce uPOPs releases from waste open burning in the participanting African countries of SADC subregion		
Country(ies):	Botswana, Lesotho, Madagascar, Mozambique, Swaziland, Tanzania and Zambia	GEF Project ID:[1]	5322
GEF Agency(ies):	UNIDO (select) (select)	GEF Agency Project ID:	130035
Other Executing Partner(s):	Ministry of Environment, Wildlife and Tourism (Botswana), Ministry of Tourism, Environment and Culture (Lesotho), Ministry of Environment and Forests (Madagascar), Ministry for Coordination of Environmental Affairs (Mozambique), Swaziland Environment Authority (Swaziland), Vice President's Office-Division of Environment (Tanzania) and Zambia Environmental Management Agency (Zambia)	Submission Date: Re-submission Date:	2013-03-01 2013-09-18
GEF Focal Area (s):	Persistent Organic Pollutants	Project Duration (Months)	60 months
Name of parent program (if applicable): • For SFM/REDD+ ☐ • For SGP ☐ • For PPP ☐	n/a	Project Agency Fee ($):	628,425

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK[2]:

Focal Area Objectives	Trust Fund	Indicative Grant Amount ($)	Indicative Co-financing ($)
(select) CHEM-1	GEFTF	6,615,000	26,460,000
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
(select) (select)	(select)		
Total Project Cost		6,615,000	26,460,000

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To achieve sustainable release reduction of unintentionally produced POPs (uPOPs) in the open burning sector of participating African countries of SADC sub-region through introduction of best available techniques and best environmental practices (BAT/BEP) measures at selected priority demonstration sites.

Project Component	Grant Type[3]	Expected Outcomes	Expected Outputs	Trust Fund	Indicative Grant Amount ($)	Indicative Cofinancing ($)
1. uPOPs baseline	TA	Updating of the regional	1.1 National	GEFTF	350,000	1,400,000

[1] Project ID number will be assigned by GEFSEC.
[2] Refer to the reference attached on the Focal Area Results Framework and LDCF/SCCF Framework when completing Table A.
[3] TA includes capacity building, and research and development.

information on open burning practices and inventory of major dumpsites/landfills in participating countries		information on current open burning practices and establishing uPOPs baseline inventories	information on current locations of open burning practices validated 1.2 National inventories of uPOPs open burning emissions reviewed and updated 1.3 Regional information exchanged and cooperation networking consolidated in open burning practices and data on emissions			
2. Regulatory/Legal framework review, policy development and institutional strengthening	TA	Strengthened legislation and human resources capacity in implementing BAT/BEP in sites of open burning practices	2.1 Regulatory measures formulated for discouraging open burning practices of different waste streams and agricultural residues 2.2 Country action plans for managing and phasing out of open burning of wastes and agricultural residues reviewed and strengthened. 2.3 Regional BAT/BEP guidances for uPOPs reduction formulated and adopted for collective elimination and/or substantial reduction of waste and biomass open burning practices 2.4 Adequate technical infrastructure built for implementing BAT/BEP and waste management best practices.	GEFTF	700,000	2,800,000
3. Pilot demonstration of BAT/BEP in selected priority sites	TA	Implementation of BAT/BEP to reduce uPOPs emissions in the open burning sector at national and regional levels	3.1 Waste management best practices carried out at selected priority demonstration municipalities (2 in each participating country) 3.2 BAT/BEP plans developed and implemented in some selected major dumpsites and landfills in the participating countries using PPP	GEFTF	4,494,000	17,976,000

			models 3.3 Biomass waste recycling and disposal options promoted in some areas through alternative waste management plans for better value addition 3.4 Harmonized methodology developed at regional level to set up release reduction targets for open burning sector 3.5 Socio-economic impacts of the project intervention on private and informal sectors assessed including recycling business plan			
4. Information dissemination and awareness raising	TA	Transfer of knowledge on BAT/BEP and awareness raising on uPOPs related risk and exposure in open burning sector	4.1 Targeted training and awareness campaigns carried out to emphasize health and environmental risk and exposure hazards of open burning practices for all relevant target groups (decision makers, professional associations, community leaders, farmers, private industries, scavengers, NGOs, media and the public at large) 4.2 Educational programme established at all levels for introducing lessons learnt and alternatives to open burning practices 4.3 Regional cooperation and information sharing and use on BAT/BEP and uPOPs established through the BAT/BEP Forum	GEFTF	630,000	2,520,000
5. Monitoring and evaluation	TA		5.1 M&E framework designed and implemented in accordance with UNIDO and GEF requirements	GEFTF	126,000	504,000
	(select)			(select)		
	(select)			(select)		

	(select)			(select)		
	(select)			(select)		
	(select)			(select)		
Subtotal					6,300,000	25,200,000
Project Management Cost (PMC)[4]				GEFTF	315,000	1,260,000
Total Project Cost					6,615,000	26,460,000

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE AND BY NAME IF AVAILABLE, ($)

Sources of Cofinancing	Name of Cofinancier	Type of Cofinancing	Amount ($)
National Government	Government of Botswana	Cash	700,000
National Government	Government of Botswana	In-kind	1,965,000
National Government	Government of Lesotho	Cash	180,000
National Government	Government of Lesotho	In-kind	2,485,000
National Government	Government of Madagascar	Cash	200,000
National Government	Government of Madagascar	In-kind	2,465,000
National Government	Government of Mozambique	Cash	700,000
National Government	Government of Mozambique	in-kind	1,965,000
National Government	Government of Swaziland	Cash	500,000
National Government	Government of Swaziland	in-kind	2,165,000
National Government	Government of Tanzania	Cash	600,000
National Government	Government of Tanzania	in-kind	2,065,000
National Government	Government of Zambia	Cash	700,000
National Government	Government of Zambia	in-kind	1,965,000
Private Sector	to be identifief during the PPG	Grant	4,305,000
Bilateral Aid Agency(ies)	GIZ-Germany, DANCED and DANIDA-Denmark, Korea, others	Grant	3,400,000
GEF Agency	UNIDO	in-kind	100,000
Total Cofinancing			26,460,000

D. INDICATIVE TRUST FUND RESOURCES ($) REQUESTED BY AGENCY, FOCAL AREA AND COUNTRY[1]

GEF Agency	Type of Trust Fund	Focal Area	Country Name/Global	Grant Amount ($) (a)	Agency Fee ($) (b)[2]	Total ($) c=a+b
UNIDO	GEFTF	Persistent Organic Pollutants	Regional: Botswana, Lesotho, Madagascar, Mozambique, Swaziland, Tanzania and Zambia	6,615,000	628,425	7,243,425
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
(select)	(select)	(select)				0
Total Grant Resources				6,615,000	628,425	7,243,425

[1] In case of a single focal area, single country, single GEF Agency project, and single trust fund project, no need to provide information for this table. PMC amount from Table B should be included proportionately to the focal area amount in this table.

[2] Indicate fees related to this project.

[4] To be calculated as percent of subtotal.

E. PROJECT PREPARATION GRANT (PPG)[5]

Please check on the appropriate box for PPG as needed for the project according to the GEF Project Grant:

	Amount Requested ($)	Agency Fee for PPG ($)[6]
• No PPG required.	-- 0--	--0--
• (upto) $50k for projects up to & including $1 million		
• (upto)$100k for projects up to & including $3 million		
• (upto)$150k for projects up to & including $6 million		
• (upto)$200k for projects up to & including $10 million	180,000	17,100
• (upto)$300k for projects above $10 million		

PPG AMOUNT REQUESTED BY AGENCY(IES), FOCAL AREA(S) AND COUNTRY(IES) FOR MFA AND/OR MTF ROJECT ONLY

Trust Fund	GEF Agency	Focal Area	Country Name/ Global	(in $)		
				PPG (a)	**Agency Fee** (b)	**Total** c = a + b
GEF TF	UNIDO	Persistent Organic Pollu	Regional	180,000	17,100	197,100
(select)	(select)	(select)				0
(select)	(select)	(select)				0
Total PPG Amount				**180,000**	**17,100**	**197,100**

MFA: Multi-focal area projects; MTF: Multi-Trust Fund projects.

[5] On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

[6] PPG fee percentage follows the percentage of the GEF Project Grant amount requested.

PART II: PROJECT JUSTIFICATION[7]

A. PROJECT OVERVIEW

A.1. Project Description. Briefly describe the project, including ; 1) the global environmental problems, root causes and barriers that need to be addressed; 2) the baseline scenario and any associated baseline projects, 3) the proposed alternative scenario, with a brief description of expected outcomes and components of the project, 4) incremental/additional cost reasoning and expected contributions from the baseline , the GEFTF, LDCF/SCCF and co-financing; 5) global environmental benefits (GEFTF, NPIF) and/or adaptation benefits (LDCF/SCCF); 6) innovativeness, sustainability and potential for scaling up

1) **Global environmental problems, root causes and barriers that need to be addressed:**

1. In Africa, the implementation of integrated waste management practices are generally still at an infancy stage and waste treatment facilities (such as properly managed incinerators or sanitary landfills are very few, as well as reuse/recycling practices. Therefore, municipal wastes and other types of wastes are usually dumped in open dumpsites and eliminated by open burning practices. In urban areas, it can be expected that municipal waste is mainly composed of food residues, packaging of goods and some hazardous wastes (such as batteries and electronic devices), whereas in sub-urban or rural zone, these shares decreases in favour of country specific agricultural wastes.
2. Hazardous wastes streams are commonly diverted to some uses other than final disposal, or mixed and disposed of with other waste streams. Among them, contaminated ashes from burning processes (incinerators, cement kilns or industrial boilers) are often dispersed in open fields and waste oils are usually burnt as fuel. Medical waste collection and management in large hospitals is usually carried out, but in many small hospitals, and especially in remote countryside and private clinics, it is common that waste is not properly collected for special treatment rather ends in the uncontrolled disposal and could result in breakage of mercury-containing devices (such as thermometers and blood pressure meters) and in the consequent release of this global contaminant in the environment. Moreover, new types of wastes are emerging such as electrical and electronic waste. It is recognized that poorly mixed materials and the presence of chlorinated precursors and catalytic metals (copper, iron) from electrical and electronic devices and from medical devices are the main factors for the formation and releases of uPOPs in open burning processes as well as other environmental pollutant releases.
3. Many countries are promoting policies to increase the productivity of agricultureal fields, through investments in river waters management projects or land reclamation, though many environmental problems come from the adverse impact of climate change. If the programs will be successful, this would result in an increase of the agricultural wastes to be treated or disposed of.
4. Therefore, since open burning of mixed wastes and agriculture residue wastes is not properly addressed, uPOPs releases might dramatically increase in the future throughout the global environment. Besides the negative environmental impact, high levels of exposure over time, such as those experimented by waste management workers and scavengers, may lead to increased birth defects, dysfunctional immune and reproductive systems, greater susceptibility to disease, reduced intelligence and some types of cancers.
5. However, it might be highlighted that decision-makers in the region are becoming more and more aware of the need to set up waste management programmes and to upgrade open dumps to sanitry landfills but at the national and municipal levels, only few countries have taken steps to construct, operate or maintain them and set up a regulatory infrastructure. In the prevalent part of the participating countries, the Environmental Protection Acts do not specifically address uPOPs related issues but at least are more concerned with pesticides and PCB control and disposal. Alternatively, in some countries, the existing legislatin includes some provision to control waste disposal or agricultural residues burning prevention. Due to the above mentioned policies to increase the productivity or agricultural fields, some countries are in the process to set up regulation and restrictions in this sector as well.

2) Baseline scenario and any associated baseline projects:

6. The participating countries have different baseline situations, mainly depending on their financial, economic and socio-economic status. More specifically, the PCDD/PCDF (dioxins/furans) estimated releases for each country, the ongoing activities and projects both at local and national levels are presented hereafter. These baselines will be considered to set up the activities of the project.

[7] Part II should not be longer than 5 pages.

7. In **Botswana**, the results of inventory demonstrates that waste incineration and uncontrolled combustion processess are potentially the most significant sources of PCDD/PCDF. These two source categories contribute approximately 90% of the total PCDD/PCDF estimates and specifically the uncontrolled combustion processes accounts for a total of 54.772 g TEQ/a. Uncontrolled dumping sites and landfill fires play a significant role in the releases of uPOPs, followed by domestic waste burning. The subcategory of biomass burning account for 29.877 g TEQ/a, this data coming mainly from accidental forest fires and in a much lesser extent to burning of grassland, but data on the amount of harvest residues in agricultural fields are not available. The Government has made investments in the agricultural sector with a view to improving the productivity, enhancing rural incomes and diversifying the economy, thus accelerating achievement of the so called Vision 2016 program. This includes investment in the infrastructure, mainly for water conveyance from Chobe-Zambezi River to Zambezi Integrated Agro-Commercial Development site for irrigation and improvement of arable lands. Consequently, this will reflect an increase of agricultural waste to be managed. Incinerators used for disposal of hospital wastes were single chambered and not properly operated. A National Environmental Laboratory to facilitate proper and accurate monitoring pollutants in air has been established in 2002 but POPs such as dioxins and furans were not monitored. The Gaborone City Council (GCC) has closed the old largest landfill in 1992 and another again in 2008. Another landfill is in the South East District but it was built without any Environmental Impact Assessment (EIA) study. A new advanced landfill, which is expected to be the biggest in Botswana, was built in Kweneng district, located between Molepole and Gamodubu after some delays and it is a modernized landfill with advanced machinery. Botswana has enacted several laws including the Atmoshpheric Pollution Act, Public Health Act and Waste Management Act of 1998. The regulations are general and do not address the provisions for POPs chemicals. The NIP has identified relevant NGOs in the field of environment and chemicals management that has the capacity to do research, carry out public awareness on hazardous chemicals and waste management demonstration.
8. In **Lesotho**, the total PCDD/PCDF releases estimated in the inventory were 1708.1 g-TEQ/a, mainly due to the burning of waste at illegal and uncontrolled dumping sites. The releases from waste disposal or landfilling accounted for 1124 g TEQ/a and uncontrolled combustion for 347.91 g TEQ/a. Industrial solid waste is disposed of together with domestic solid waste at dumpsites or burned at the industries in open fire places. All hospitals in the country were found to have medium technology incinerators but all are either out of order or not functioning in a normal way that lead to the burning of medical waste in an incomplete combustion process. Lesotho does not have a legislation dealing specifically with the management of chemicals, specifically POPs. The law that exist are fragmented and not specific to POPs chemicals. However, the government is aware of these limitations and is in the process of addressing them. Waste collection and recycling is carried out by the public, some organizations and one or two private contractors that sell waste or carry out some disposal only if financially attractive. There is only one medium size official dumpsite. Waste is not treated but simply buried and/or covered with soil and compacted on a daily basis. The NIP highlighted that a special attention was needed to the Ha-Tšosane (near the capital city Maseru) and Maputsoe dumpsites, which receive all sorts of waste, including industrial wastes. The set up of two new regional landfills is among the actions foreseen for the future.
9. In **Madagascar** the inventory made in 2002 produced an estimated total of 334 g TEQ/a PCDD/PCDF, 252.4 g TEQ/a caused by uncontrolled burning processes and 32 g TEQ/a by disposal/landfill activities. There is no modern landfill with cells for hazardous waste and burying practices except in few large companies such as in the mining sector. There are hundred large and medium landfills and their area varies from 2 to 10 ha. There are thousands of small dumpsites with an area between half ha to 5 ha. Usually, municipal waste is collected and transported to the dumpsites by contracted private or NGOs organizations, depending on the budget of the public administration, without any screening or special treatment. At dumpsites scavengers recycle the items and burn the remaining waste. Costs of the collection trucks and of fuel are the bottlenecks of this waste management system. Public associations and NGOs need donor funding for these tasks but once the funds are finished, all waste management plans risk to finish.
10. In **Mozambique** there are no guidelines to guide POPs wastes management and the enforcement of the existing legislation relevant to POPs management is weak. Some of the sources of PCDD/PCDF were not quantified due to lack of baseline information. These include releases from crematorium, fires at waste disposal sites and accidental fires in factories. One industrial waste landfill is operating in Maputo since 2006, especially accepting waste from aluminum industry and has two cells with a capacity of 6 years per cell. It was built by the Ministry of Environment with funds from DANIDA, DHV, MOZAL and Mozambique Government. It is managed now by Interwaste Ltd. from the Republic of South Africa. There are dumpsites in every municipality of the 10 provinces. The biggest one is in Hulene, near Maputo. Hospital wastes are generally incinerated in hospital with small ovens. A new plan for the set up of new landfills in each province is foreseen for the next 10 years with funds from the Korean government and the preliminary phase for the master plan has been prepared. Investments are foreseen in

the cities of Beira-Dondo, Nampula, Nacala, Quelimane in the period 2013-2016. Feasibility studies for waste treatment facilities are also ongoing for the cities of Maputo and Matola.

11. In the NIP of **Swaziland**, the estimated uncontrolled open burning process category accounted for some 100.765 g TEQ/a out of total of 117 g TEQ/a. The open burning processes includes several activities in Swaziland such as field sugar cane trash burning before harvesting, accidental plantation forest fires, wild grass and savannah fires, accidental fires in municipal landfills and domestic waste burning, the latter accounting for some 77% of the total releases. The majority of the populations rely on open burning for the reduction and management of their wastes. The National Solid Waste Management Strategy (NSWMS) was developed in 2001 with the assistance of DANCED (Danish Cooperation for Environment and Development) and is being implemented. It encompasses waste management and waste planning including waste recycling strategies, general and hazardous waste disposal strategies from all sources. There is a draft legislation that aims to introduce levies on the use of plastic bags and other plastic wrapping products in an attempt to prevent waste generation. The other act related to open burning is the Grass Fires Act, No. 44/ 1955 that prescribes for a general prohibition against the burning of grass. Grass fires can only be lit and set upon issuance of a permit by the Director of Agriculture. In the country, there are four licensed general waste small and medium scale properly constructed landfills (Mbabane, Piggs Peak, Matsapha and Simunye), while other fourteen are mainly improperly managed waste dumpsites and only three are licensed. Usually, the local authorities collect the waste, but some private companies can operate as well in their own premises. In some peri-urban and rural areas, waste control areas have been introduced and the collection of waste is undertaken. No NGO is involved in waste collection at the moment.
12. In **Tanzania**, the uncontrolled burning represented some 780.39 g TEQ/a out of a total of 946.60 g TEQ/a of PCDD/PCDF estimated releases. Biomass burning covered mainly forest and grassland fires (166.33 g TEQ/a and 244.96 g TEQ/a respectively). No data were available for agricultural residue burning. The rest of emissions were due to domestic waste burning. It was assumed that the major portion of solid waste in rural areas is organic and is used in farms or as animal feed. The remaining portion containing inorganic waste materials is not burned but buried. In urban areas less than 30% of domestic waste is collected for final disposal at municipal disposal sites, the rest is burnt or buried at household level. The subcategory accounts for some 172.11 g TEQ/a. Some programs started in 1994 in the waste management sector, including training in cleaner production concept for industry workers, sustainable cities programs in five municipalities, solid waste collection in Dar Es Salaam City, establishment of water and waste water authorities in certain urban centers. Several tools were introduced such as the cost sharing method in waste management in Dar es Salaam, researches on waste treatment and disposal technologies and promotion of community based environmental sanitation projects. There is only one large sanitary landfill of approximately 65 hectares, but it is not working properly due to lack of funds. Transport and collection is undertaken by the private sector, municipalities and NGOs. There are no specific technologies applied, with the exception of some small incinerators in hospitals to treat medical wastes. The specific experience gained by the company Kiwodet in waste collection and composting activities will be evaluated.
13. In **Zambia**, according to the 2004 national inventory, the emission of PCDDs/PCDFs were 483.1g TEQ/a and this was shared as follows: air 289.7g TEQ/a; residue 144.9g TEQ/a; land 48.4g TEQ/a. The single, largest source of these releases was uncontrolled combustion processes, (343.3 g TEQ/a) i.e. forest fires and open air burning, which emitted significant amounts to all the release vectors. A number of legal instruments have been promulgated that regulate various aspects of the environmental management including the use of chemicals such as POPs. Specific activities are planned to reduce by 75% PCDD/PCDF emissions from uncontrolled domestic waste burning, such as increasing the domestic waste collection in peri-urban and rural districts (increasing number of waste collection trucks) and implementing the so called Zonal system in pilot districts to promote waste collection in municipal councils of the major cities. With support from Danish International Development Agency (DANIDA), the first Engineered Sanitary Landfill with environment protection mechanisms was built at the cost of about US$ 2.8 million. It covers 24 hectares with five cells. The expected life is 20-25 years for the entire site. Some 200 tonnes of waste are received daily. The collection rate has improved from about 5-10% to 35-40% in three years. Waste scavengers have been incorporated in the landfill management with training on the best practice, health and safety. Only licensed and approved waste transporters and generators are permitted.
14. The participating countries, except Botswana, Madagascar and Zambia, are involved in the GEF/UNIDO/UNEP ongoing AFLDCs projects on "Capacity strengthening and technical assistance for the implementation of the Stockholm Convention National Implementation Plans (NIPs) in Africa Least Developed Countries (LDCs) of the SADC sub-region", whose main objective is to reduce POPs emissions through strengthening and/or building capacity required in the subregions to implement the NIPs in a sustainable, effective and comprehensive manner while building upon and contributing to strengthening country's capacities for sound management of POPs chemicals. UNEP is currently developing the draft model legislative document on comprehensive chemical regulatory system available for use and adaption to specific national requirements. UNIDO has been conducting

training of trainers and workshops to identify and assess contaminated sites as well as pilot demonstration of BAT/BEP measures and capacity building in selected sectors such as textile, tanneries and waste oil refinery at regional level. In addition GIZ, Germany has conducted 2 workshops on contaminated legacy sites and contributing US$100,000 in cash. Experiences gained and strengthened regulatory framework as well as technical and institutional capacities established in the above-mentioned projects will be extended to the proposed project for continuous reduction of uPOPs emissions.

3) Proposed alternative scenario, with a brief description of expected outcomes and components of the project:

15. With the GEF support, the seven (7) participating countries would be able to enhance the institutional capacity and technical capability of public and private stakeholders, by reviewing and updating the current regulation and policies, taking as reference the best example of the region and fully take advantage of the opportunities given by the existing regional and international Conventions and/or Agreements. This support will be based on regulatory support and training programmes both for institutional and technical stakeholders.

16. Moreover, as the management and regulation of waste and biomass disposal are usually addressed by different ministries or public/private organizations entrusted with environment and agriculture sectors, the support of the project and the international assistance could impede the desire that the participating countries should continue to rely on their own programs to address the open burning sector even if without a coherent and integrated approach, which would lead to duplication of efforts, inefficient use of financial, technical and human resources.

17. Since the participating countries lack the technical capacity, regulations and financial support to monitor the releases of uPOPs or other harmful contaminants from open burning practices, several project activities will be focused in strengthening the monitoring capabilities of selected regional laboratories or scientific institutions through standardized analytical procedures, data collection and reporting. Targeted training programs will be carried out for laboratory technicians of the internationally used methods for uPOPs sampling and analysis and updated instrumentation will be provided in order to progressively enhance the internal skills. The monitoring and analytical capacity in SADC subregion will ensure that uPOPs releases will be monitored not only in open burning activties but on other Annex C sectors of the SC as well. All the activities will be carried out in cooperation with similar ongoing international projects in order to maximize the results and avoid overlapping.

18. From the outset, the main project activity will be the revision and updating of the current uPOPs inventories of the open burning practices with special attention on existing major source categories such as dumpsites, landfills, agricultural residue burning practices, taking as reference the recently modified emission factors in the UNEP dioxins toolkit. These activities will be undertaken in each of the participating countries and the GEF support shall be required to provide the technical assistance through local and international experts that are capable in collecting reliable data and correctly evaluate the methodology to be used. National baseline inventories and a regional baseline inventory will be projected. Based on this, the implementation of the corresponding regional action plan will deliver the global environmental benefits of the project.

19. The core of the project will be based on short- and long-term BAT/BEP actions, with the main goal to introduce the basis to achieve a progressive phasing out of the open burning practices, by setting up demonstrative programs in some selected dumpsites, landfills (possibly with different waste streams) and sites where agricultural residues are disposed of. The demonstration activities will be carried out where the environmental, economic and social benefits could be maximized not only on the national but on the regional level as well. This will lead to cost-efficient use of international financial resources.

20. With the GEF project, the participating countries will undertake open burning related programmes within a coordinated regional cooperation and information sharing platform (BAT/BEP Forum) and the lessons learnt from the local interventions would be available for other countries in the African region or abroad for replication and thus the impacts on the environment and human health would be maximized.

4) Incremental cost reasoning and expected contributions from the baseline, the GEFTF, LDCF/SCCF and co-financing:

21. The project has the primary objective to implement sustainable measures in the participating countries in order to achieve a progressive reduction of uPOPs and other related contaminants emitted from open burning practices.

22. The incremental reasoning for the project implementation relies on the fact that as a general rule each government should provide guidance for the private and public sectors for sustainable development and to put in place the relevant regulatory measures. But it needs appropriate knowledge and expertise, particularly in the comparison of the current and planned management options in the assessment of the costs and benefits of alternative and environmentally sound options that take into account the uPOPs reduction, and in the implementation of legally binding agreements that must be integrated with the national development policies and regulatory framework.

23. More specifically, in some selected major waste dumpsites short-term measures will be implemented to improve

the management of waste during disposal operations, such as the reduction and, possibly, the complete segregation of the mixed and hazardous materials. The aim is to demonstrate that feasible and inexpensive measure can be implemented to reduce uPOPs releases and other harmful contaminants (particulate matter, polycyclic aromatic hydrocarbons, heavy metals and mercury) from these types of emission sources. Therefore simple, semiautomatic collecting/recycling systems will be implemented for the exclusion from the main stream of organic waste of specific materials, such as glass, tins and bulk metals, paper, and waste containing chlorine and/or bromine (such as PVC plastics), waste oils, etc, known as precursors or catalyst for the formation of PCDD/PCDFs. The recycling of materials will offer opportunities to local public or private waste management companies for opening new markets and sustain the process.

24. The proposed project will envisage in the pilot dumpsites a periodical coverage and compaction of the wastes with sand or ground or already mineralized waste, depending on the specific climate and morphological situation of the sites. Suitable final capping will be studied, consisting in covering the waste with a combined mineral and plastic sealing layer and soil. This would limit the occurrence of fires under the waste pile and the consequent smouldering process in which uPOPs can be formed. Other short-term measures will include the set up of isolation measures to avoid grazing by animals and drainage systems of the dumpsites to address the specific weather conditions of the region. In this phase, collaboration with public and/or private waste management companies will be promoted and the international support will be needed to correctly drive the choice of the best feasible technological options.

25. The short-terms measure will include the involvement of scavengers living close to the selected dumpsites in a more integrated manner, with groupings into NGOs/CBOs to enable the provision of dedicated training on recycling activities and health protection education , risk/exposure and accident prevention. These activities will be carried out with the cooperation of the local authorities and with the support of international organizations operating in the region.

26. As far as biomass waste burning is concerned, some municipalities close to industrialized areas will be chosen to apply demonstrative collection programmes in order to use the seasonal agricultural waste streams (such as sugar cane, cotton, edible oil, etc.) for alternative uses, such as fuels for industrial boilers or as a source for compost based products. These activities will be developed jointly with analogous ongoing projects in the SADC sub-region.

27. As described in the baseline scenario, in some of the participating countries there are already operating landfills, but in most cases the operations do not take into account all the needed technological and economic measure or some of them lack the needed expertise and funding to fully operate in an environmentally sound manner. Therefore, long term actions will address some selected landfills where international support is needed to strengthen and implement the proper BAT/BEP measures. The means of cooperation and financial schemes will be developed with selected municipalities as investment projects.

28. In order to carry out the demonstration programmes, parts of the selected landfills renovation works will be implemented, including new liner systems (bottom mineral liners, plastic liners), recovery of leachate by drainage liners and drainage pipes and recovery of gas flaring. The amount of leachate produced by the landfill will be investigated and analyzed for chemical composition. The climate differences (arid, semiarid, wet areas) will be taken into account, especially for leachate treatment.

29. Options to set up waste separation and pretreatment plants before final disposal in the landfill will be investigated in those scenarios where other programmes are being implemented, in order to segregate and send for recycling the composite waste of the municipality. In this perspective, different types of composting plants will also be evaluated, on the basis of those already carried out in the SADC subregion and following the current approaches in developed countries (i.e. the policies for progressive reduction of the biodegradable part of waste in the European Union before sending waste to landfill). Financial mechanism will be evaluated for the possible additional cost to produce stabilized residual waste and compost from municipal wastes. The additional cost could be offset by the saving in landfill use and the subsequent environmental impact of greenhouse gas emissions.

30. As part of a more rational approach to better address the waste disposal at the demonstration sites, some selected municipalities will be involved in the waste collection and segregation programs for the local authorities to gain experience on the new system. The separation of organic matter and all other recyclable wastes directly from households and public offices will be encouraged through proper awareness programs to the public, education to the scholarships as well as introduction of technical and financial measures and regulations.

31. Monitoring programmes will be set up before and after the implemented modifications in the selected facilities, in order to monitor the change in uPOPs releases and other related contaminants, such as particulate matter, mercury and greenhouse gases in the main environmental media. The project will therefore contribute with valuable data

to the further enhancement of the UNEP Dioxin Toolkit.

32. Moreover, the project will develop quantifiable indicators for economic and social impacts, such as the cost-effectiveness ratios for pollutant reduction and the return rate on investment of BAT/BEP measures in different sub sectors of open burning.

5) Global environmental benefits (GEFTF, NPIF) and adaptation benefits (LDCF/SCCF):

33. The main global environmental benefit will be the reduction of about 187g-TEQ/a uPOPs releases in the regional environment, which will also reduce the potential exposure levels of humans. As a matter of fact, by avoiding that animals graze on the waste, and that floods spread the contaminants in rivers or agricultural fields, the load of pollutants that enter the food chain and finally reach humans will be reduced.

34. Additionally, as the open burning sector is also a significant contributor to greenhouse gas emissions such as carbon dioxide and methane, the project activities will not only result in the reduction of uPOPs but will also give a positive contribution to mitigate the Climate Change. Therefore the impact of the project activities will be monitored and correlated with this relevant issue.

6) Innovativeness, sustainabity and potential scaling up

35. Meeting the future challenges required by the Stockholm Convention and in line with GEF strategic objective under POPs, the project will promote the replication of the alternative processes and techniques to prevent POPs formation due to open burning of different categories of wastes, such as agricultural residues, municipal, hazardous and medical wastes. In line with the implementation of the GEF focal area strategy, the project, based on the lessons learnt from demonstration activities, will strengthen regulatory measures, institutional capacities and technical capabilities in addressing environmentally sound waste management.

36. Through the recently established Regional BAT/BEP Forum for Africa, lessons learnt and experience gained through the implementation of the project will be disseminated at regional level that will enable the maintenance of uPOPs release reduction effort at a regional area-wide scope. The Forum's main objective is to serve as a platform for information dissemination and exchange of experience between countries on different aspects of the implementation of BAT and BEP in line with the guidelines and guidance documents prepared to reduce the releases of POPs chemicals, with emphasis on uPOPs including dioxin and furans. Furthermore, the development objective of the Forum is to strengthen the capacities of the member countries to enable facilitation of transfer of environmentally sound technologies including cooperation between Africa and other regional BAT/BEP Forums that will be established taking into account the increased use of local and traditional knowledge and techniques in the industrial sector in the region.

A.2. Stakeholders. Identify key stakeholders (including civil society organizations, indigenous people, gender groups, and others as relevant) and describe how they will be engaged in project preparation:

37. The project will involve different national and international stakeholders, working in the field of waste management and agriculture, to facilitate the implementation of the NIPs as is required in paragraph 2 of Article 7 of the Stockholm Convention.

38. Farmer cooperatives and NGOs involved in agricultural activities (such as sugar cane harvesting, cotton, edible oil, etc.) will be assisted in the implementation of advanced and/or of alternative solutions, such as the use of biomass for compost production or as fuel. Experiences from other regions will be analysed and scenarios of adoption and adaptation to the African socio-economic context will be identified.

39. Training of workers focusing on gender on selected project sites as well as vulnerable social groups, scavengers and young people under poverty stress who strongly rely on activities of waste recycling to secure main or additional income will lead to diversification of waste recycling concepts in the participating countries, thus preventing much more hazardous waste from open burning. The project will upgrade waste recycling sites including major dumpsites and landfills for municipal and hazardous wastes that will enhance job opportunities for men and women while reducing/eliminating the exposure to uPOPs and other harmful contaminants. The interventions of the project will alleviate social and economic degradation both for men and women in the waste management sector.

40. The project will seek the partnership of the private sector involved in transportation/collection/recycling and disposal of wastes to invest in BAT/BEP and sound waste and residue management plans. Terms of cooperation will be promoted with national and international companies as well as multilateral and bilateral donors who are already involved on similar activities in the participating countries.

41. Relevant government institutions, departments and laboratories will be involved in trainings and awareness raising activities in order to develop the necessary human resources capacity in the region to carry on project activities. In this regard BAT/BEP related measures will be integrated into educational curricula to enhance local knowledge and awaress on BAT/BEP.

A.3 Risk. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable):

42. Some particular risks that maybe encountered in the implementation of the project as well as the measures that maybe carried out to mitigate them are given below:

Risk	Level	Mitigation measures
1. The surveys and the updated uPOPs inventories will not be conclusive and national dedicated staff to the surveys and inventory update will not be sufficiently skilled in uPOPs evaluation	Low	In large countries, the information collection will address one or two representative regions/provinces and the data will be extrapolated for the whole country. National staff will be timely trained on proper inventory methodologies and international experts will be recruited for the field surveys and review of inventories
2. Laws and regulations are partially applied and not timely communicated to local authorities, relevant stakeholders and technicians not sufficiently trained in evaluating BAT/BEP and POPs monitoring and not all participating countries will have the necessary resources to maintain uPOPs laboratory up to standards.	Low	Support will be given with institutional capacity building and training to ensure that laws are enforceable. National staff and laboratory staff will be timely trained on technical aspects of BAT/BEP in open burning sector and the specific methodologies for uPOPs monitoring. Due to high need on uPOPs analysis, a network of laboratories in the SADC subregion will be supported. Funding requirements for equipment purchases and supporting institutions will be mobilised in time.
3. BAT/BEP implementation programs in small dumpsites may not be feasible and cost-efficient and BAT/BEP measures in large landfills will not achieve the assumed positive results and thus will not be cost-effective within the project time.	Medium	Upon review of the baseline, demonstration sites may be replaced and alternative simplified technology adoption programs will be implemented. To address costs and time constrains, the project will focus on already existing hot spot landfills and on specific portion of them, in order to demonstrate cost/effective BAT/BEP implementation and technology transfers.
4. Higher cost of waste management measures may cause stakeholders to abandon the project activities and release reduction targets will not be confirmed and adopted in the national context	Low	Incentive and regulatory programs and direct technical and financial assistance will be included in the project to reduce or eliminate this risk. The release reduction targets will benefit on-going programs at the national level in order to set realistic and achievable targets for the participating countries at regional levels.
5. Low participation and interest on behalf of the stakeholders and general public and the project will not be able to create the critical mass of human resources to support BAT/BEP.	Low	Dedicated workshops will address broader issues than uPOPs, such as waste management and related agricultural activities. BAT/BEP concerning open burning will be integrated in higher level education. Experiences from BAT/BEP Forums of other regions will be obtained.

6. Climate change risks from open burning activities will not be estimated	Medium	Open burning activities and improperly managed landfills are significant contributors to greenhouse gas emissions including carbon dioxide and monoxide (from improper waste burning), methane and nitrogen oxides (due to anaerobic digestion of waste). This will be mitigated by introducing BAT/BEP in the disposal sites through implementation of technological means to recover landfill gases and improved waste segregation, hence allow for better risk assessment on climate change.

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A.4. Coordination. Outline the coordination with other relevant GEF financed and other initiatives:

43. The participating countries are members of the SADC subregion with foreseen programmes to address pollution control and environment protection and facilitate the introduction of new technologies. UNIDO field offices network as well as National Cleaner Production Centres (NCPCs), Stockholm Convention and Basel Convention Centres will be part of the coordination effort.

44. The participating countries have set up and launched in September 2012 the Regional BAT/BEP Forum in Africa, such as those already launched in other regions worldwide (ESEA, PERSGA, CEECCA and GCC). This project will be the first of those foreseen by the relevant Regional Action Plan discussed in Addis Ababa, Ethiopia in January 2012 and will closely cooperate with other BAT/BEP Forum initiatives that will be promoted in other sectors.

45. The project will benefit from the results of the GEF-funded UNIDO project “Regional project to develop appropriate strategies for identifying sites contaminated by chemicals listed in Annexes A, B and/or C of the Stockholm Convention”, especially in collecting data for contaminated sites, dumpsites and landfill in the region and will use the toolkit methodologies for data collection and the GEF supported UNDP/WHO/HCWH global project on "Demonstrating and promoting best techniques and practices for reducing healthcare waste to avoid enviornmental releases of dioxins and mercury".

46. Moreover, the project will seek linkages with other POP related regional projects in Africa, such as the UNIDO/UNEP projects “Capacity Strengthening and Technical Assistance for the Implementation of Stockholm Convention National Implementation Plans (NIPs) in African Least Developed Countries (LDCs) of the COMESA, ECOWAS and SADC sub-regions” and the GEF supported UNDP project on "Reducing uPOPs and mercury from the health sector of Africa" as well as the newly approved GEF funded project on "Investment Promotion on Environmentally Sound Management of Electrical and Electronic waste: Up-scale and Promotion of activities and initiatives on environmentally sound management of electrical and electronic waste in Ethiopia" and the GEF-funded UNIDO projects on "National Implementation Plan (NIP) review and update" that are already approved for most of the participating countries.

47. As far as monitoring activities, the UNEP projects “Supporting the Implementation of the Global Monitoring Plan of POPs in Eastern and Southern African Countries” and "Continuing Regional Support for the POPs Global Monitoring Plan under the Stockholm Convention", the activities of the Global Atmospheric Passive Sampling (GAPS) Network and of MONET-Africa-RECETOX Program will be considered in order to avoid overlaps and maximize the benefits of measures aimed at strengthening the regional laboratories.

48. The proposed project will explore linkages with ongoing initiatives of internationl agencies such as UNHABITAT and others in the SADC sub-region on proper collection and management of wastes to ensure coherence and minimize duplication of work. It will also build linkages with the national and regional on-going plans to set up new landfills, with new waste management programmes and with projects and initiatives that address the management of agricultural residues, as described in the baseline scenario.

B. Description of the consistency of the project with:

B.1 National strategies and plans or reports and assessments under relevant conventions, if applicable, i.e. NAPAs, NAPs, NBSAPs, national communications, TNAs, NCSAs, NIPs, PRSPs, NPFE, Biennial Update Reports, etc.:

49. All the participating countries have ratified the SC and completed their NIPs. The NIP inventories concluded that uncontrolled combustion processes are the most significant sources of uPOPs releases. Consequently, the release reduction is among the national priorities of the participating countries related to the implementation of the SC.

50. The common aim to reduce the harmful effects of open burning practices has led the participating countries committed to promote and sustain immediate actions to fully address this problem. Waste management is a pressing problem for the governments, because of the general lack of specific infrastructure (sanitary landfills, waste incinerators, etc) and of specific supporting legislations. Some countries are in the process of developing and implementing various municipal waste management strategies and action plans and Governments are seeking advice and assistance from the international community concerning advanced management practices and technologies that could reduce or minimize the negative environmental impacts of open burning. These issues are reflected in the national action plans in the NIPs of the participating countries.

51. More specifically, as far as strategies to address the uPOPs reduction is concern, examples could be cited in **Botswana**, the NIP follows the national development process as is defined in the country's National Development Plan (NPD), District Development Plans (DDPs) and Urban Development Plans (UDPs). The main activities regarding uPOPs include the revision and enacting of the relative legislation, especially incineration guidelines and awareness campaigns. In **Lesotho**, the development of an Integrated Waste Management and Pollution Control policy framework, amendment of relevant legislation to ensure significant reduction of uPOPs releases, training of law enforcement officers on implementation of the law are foreseen. The implementation of cleanup systems and proper waste management for stockpiles and waste directly address the open burning issue. Other actions involve the promotion of recycling of plastic and PVC and the set up of two new regional sanitary landfills. In **Madagascar**, the NIP plan to reduce by 50% the emission of UPOP from the main region Analamanga through the management of municipal and hazardous wastes within 5 years and the set up of a pilot incinerator. In **Mozambique**, the set up of a Center for Chemical Management (MCCM), as an inter-sectoral body to oversee the control of chemicals in the country is among the government plan. In the NIP of **Swaziland** the main activities related to waste reduction include the building of incinerators for medical waste and the increased efficiency of existing health care waste disposal facilities. As far as biomass burning is concerned, the aim is to strengthen the implementation of the Rural Electrification project to reduce the use of firewood by rural poor communities and promote advanced harvesting methods for green cane. In **Tanzania**, the NIP sets as priorities the development of PCDD/PCDF control programs covering waste management strategies, and the research on BATs and BEPs including alternative materials and technology, as well as the identification of some feasible technological options for waste incineration. Investment programs on BATs and BEPs for major sources including uncontrolled combustion are foreseen. In **Zambia**, deliberate efforts were made to formulate a NIP that conforms to the Zambian Fifth National Development Plan (FNDP), Vision 2030 and the Millennium Development Goals (MDGs). Specific activities are planned to reduce by 75% emissions from uncontrolled domestic waste burning, such as increasing the domestic waste collection in peri-urban and rural districts, implementing the so called Zonal system by promoting waste segregation at source, recycling technology for plastics, composting of biodegradable materials and increasing taxes on importers and producers. In order to reduce PCDD/PCDF emissions from agricultural residue burning and forest fires, the NIP foresees the promotion of awareness raising for landfill managers and the creation of financial incentives and alternative income generation ventures for scavengers. Currently, the Ministry of Science, Technology and Vocational Training (MSTVT) has set up a Bureau to review all technologies currently in use in the country with the aim to recommend on BAT/BEP in the context of POPs management.

52. Some of the participating countries are parties to the Basel Convention for the control of transboundary movement and management of hazardous wastes and specifically of the Bamako Conventions that includes the promotion and provision of training in sound environmental management of hazardous wastes, technology transfer, information dissemination, research and consulting among African States.

53. The participating countries are parties of the regional economic co-operation Agreement, the Southern African Development Community (SADC), that has the goal to achieve the improvement of the living standards in peace and security, with a sustainable economic and social development in the member countries obtained through the co-operation in trade, customs and monetary affairs, technology, industry and energy, transport and

communication, agriculture and environment.

54. Specifically, the SADC Secretariat developed the Regional Indicative Strategic Development Plan (RISDP) in order to sustain the institutions and provide a clear orientation for the policies and programmes of the organisation over the medium to long-term.

55. Moreover, some countries joined the New Partnership for Africa's Development (NEPAD) that is a program of action for the development of the African continent. The environmentally sound management of chemicals including POPs is identified as a key issue under the environmental initiative in Chapter 38 of the NEPAD Plan of Action. Additionally some of the participating countries support and represented in the Strategic Approach to International Management of Chemicals (SAICM), the policy framework created to promote the sound management of chemicals throughout their life cycle and to control the potential adverse impacts of chemicals on the environment and human health. It is evident the linkage with the safe disposal of chemicals and the implementation of hazardous/industrial waste management programs.

56. This is to conclude that most of the countries in the subregions have made attempts to control the emissions of chemicals but there still a need to accelerate the implementation.

B.2. GEF focal area and/or fund(s) strategies, eligibility criteria and priorities:

57. The project is consistent with focal area objective CHEM-1 of GEF-5 which aims at phasing out and reducing POPs releases. Under the "POPs releases to the environment reduced" outcome, following NIP priorities, investments are expected to be supported by the GEF that address implementation of BAT/BEP for release reduction of unintentionally produced POPs, including from industrial sources and open-burning.

58. The PCDD/PCDFs inventories reported in the NIPs of the participating countries of SADC sub-region revealed that the open burning sector is estimated as the most important PCDD/PCDF source releases, accountable for a total of more than 187 g-TEQ/a. This sector includes among others commonly practiced biomass burning activities, such as agricultural residue burning, sugar cane burning, forest and grassland fires, etc., and accidental fires including dumpsite fires and backyard municipal waste burning. The reduction of the uPOP releases from these major sources requires coherent legislative and institutional capacity from the government side, significant investments and technical capacity from the private/public sector and international support.

B.3 The GEF Agency's comparative advantage for implementing this project:

59. The mandate of UNIDO is to support developing countries and countries with economies in transition to achieve sustainable industrial development through a global networking from field and desk offices, cleaner production centres, investment and technology promotion centres, environment technology centres and global enviroment forums of BAT and BEP. UNIDO's comparative advantage is working with industries related technical assistance and capacity building including environmentally sound management and disposal of POPs waste, introduction of BAT/BEP to industrial sector mentioned in in Annex 5 of the Stockholm Convention, management of contaminated sites, demonstration of technologies and alternatives to products and processes and development and implementation of a large number of GEF financed NIPs and NIP review and update projects. UNIDO has also e-waste management, mercury and contributed to the efforts made in sound management of chemicals and waste through SAICM and other bilateral financed projects.

60. UNIDO is part of the expert group that developed and continuously improves the BAT/BEP guidelines of the Stockholm Convention. This project will integrate both aspects of technology transfer and investment promotion in introducing BAT/BEP in the open burning source category.

61. UNIDO has recently embarked in the UN SG initiative of "Sustainable Energy for All" where it would be expected to achieve record levels in global energy access, double the vote of energy efficiency improvement and double the share of renewable energy level. This important contribution will reduce the emissions of uPOPs and ensure the linkages of chemicals to climate change issues.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S): (Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE *(MM/dd/yyyy)*
Ms. Ingrid M. Otukile	Chief Natural Resources Officer, GEF Operational Focal Point	Ministry of Environment, Wildlife and Tourism, Botswana	02/15/2013
Mr. Stanley M. Damane	GEF Operational Focal Point	Minstry of Tourism, Environment and Culture, Lesotho	08/16/2012
Mr. Christine Edmee Ralalaharisoa	The General Director of Environment, GEF Operational Focal Point	Ministry of Environment and Forests, Madagascar	08/17/2012
Ms. Marilia Telma Antonio Manjate	Head of Department of International Cooperation	Ministry for the Coordination of Environmental Affairs, Mozambique	02/06/2013
Mr. Jameson D. Vilakati	Executive Director, GEF Operational Focal Point	Swaziland Environment Authority, Swaziland	08/06/2012
Dr. J. Ningu	Permanent Secretary, GEF Operational Focal Point	Vice President's Office, Tanzania	07/30/2012
Mr. G. F. Gondwe	Acting Director, GEF Operational Focal Point	Zambia Environmental Management Agency, Zambia	09/03/2012

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF/LDCF/SCCF/NPIF policies and procedures and meets the GEF/LDCF/SCCF/NPIF criteria for project identification and preparation.					
Agency Coordinator, Agency name	**Signature**	**DATE** *(MM/dd/yyyy)*	**Project Contact Person**	**Telephone**	**Email Address**
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