

Scientific and Technical Advisory Panel

The Scientific and Technical Advisory Panel, administered by UNEP, advises the Global Environment Facility
(Version 5)

STAP Scientific and Technical screening of the Project Identification Form (PIF)

Date of screening: November 10, 2017
Screener: Sunday Leonard
Panel member validation by: Ricardo Orlando Barra Rios
Consultant(s):

I. PIF Information (*Copied from the PIF*)

FULL-SIZED PROJECT	GEF TRUST FUND
GEF PROJECT ID:	9371
PROJECT DURATION:	5
COUNTRIES:	Regional (Burkina Faso, Benin, Mali, Niger, Senegal, Togo)
PROJECT TITLE:	Impact Investment and Capacity Building in Support of Sustainable Waste Management to Reduce Emissions of Unintentional POPs (UPOPs) and Mercury in West Africa
GEF AGENCIES:	BOAD
OTHER EXECUTING PARTNERS:	TBD
GEF FOCAL AREA:	Chemicals and Waste

II. STAP Advisory Response (*see table below for explanation*)

Based on this PIF screening, STAP's advisory response to the GEF Secretariat and GEF Agency(ies):
Minor issues to be considered during project design

III. Further guidance from STAP

1. This project aims to promote sustainable waste management in six least developed West African countries and strengthen their institutional and legal frameworks, establish technical infrastructure, and build the needed capacity to phase-out POPs and reduce mercury emissions.
2. The inadequacy of waste management systems is a major issue in the targeted countries (Benin, Burkina Faso, Mali, Niger, Senegal, and Togo). Moreover, this challenge is increasing due to population growth, rapid but poorly planned urbanization, increasing economic activities, and lack of awareness. A significant amount of wastes, including domestic, plastics, electrical and electronics, and medical waste is generated in these countries.
3. The science of e-waste-related adverse environmental and public health impacts is well established in the literature (for example, Li et al., 2014: <https://www.ncbi.nlm.nih.gov/pubmed/24090830>; Labunska et al., 2014: <https://www.ncbi.nlm.nih.gov/pubmed/24735010>; Someya et al., 2016: <http://www.sciencedirect.com/science/article/pii/S2405665015300093>; Labunska et al., 2014: <http://pubs.acs.org/doi/abs/10.1021/es500241m>; Asante et al., 2011: <http://www.sciencedirect.com/science/article/pii/S0160412011000626>; Sindiku et al., 2012: https://www.researchgate.net/publication/251573431_Assessing_BFRs_and_POP-PBDEs_in_e-waste_polymers_in_Nigeria); as well as that of medical waste (see, for example, Windfeld et al., 2015: <http://www.sciencedirect.com/science/article/pii/S0301479715302176>; Cooker et al., 2009: <http://www.sciencedirect.com/science/article/pii/S0956053X08002365>). Hence, this is a much-needed intervention especially in many African countries, where there is a significant lack of capacity and resources for overcoming the challenge.

4. The project will implement interventions using a top-down approach involving the coordination of capacity building and regulatory/policy improvement efforts at the regional scale. It will also implement a bottom-up approach involving working with the government and SMEs at the local level, with focused projects to demonstrate what sound waste management should look like with the goal of encouraging investment.
5. Given the number of countries, institutions and private entities involved in the project, as well as the complexity of the problem to be addressed, the project will require substantial coordination and project management to ensure delivery of its objective. STAP, therefore, appreciate the fact that Component 1 of the project would include the establishment of regional project coordination secretariat as well as a platform for the exchange of knowledge and experience. It is recommended that a robust monitoring and evaluation component should also be put in place to monitor and evaluate progress at regular intervals during project implementation to address any failure in implementation at an early stage.
6. Furthermore, STAP recommends the active involvement of all stakeholders in the waste management chain. It is suggested that the concept of adaptive management should be considered for project implementation, as this has been shown to improve stakeholder engagement and improve project delivery. Please see, for example, <https://www.doi.gov/sites/doi.gov/files/migrated/ppa/upload/Chapter1.pdf>; <https://www.nap.edu/read/10972/chapter/4#22>; Irwin et al., 2008: <https://pubs.usgs.gov/sir/2009/5049/pdf/Irwin.pdf>; Allen et al., 2011: <http://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1079&context=nconfwrustaff>; National Academies: <https://www.nap.edu/read/10972/chapter/6>; as well as STAP publication on principles for developing integrated chemical and waste and climate change projects: <http://www.stapgef.org/principles-development-integrated-transformational-projects-climate-change-and-chemicals-waste>).
7. It was noted that the GEF-supported EHPMP project (Environmental Health and Pollution Management Program in Africa (<https://www.thegef.org/project/ehmp-environmental-health-and-pollution-management-program-africa>)) has one child project in Senegal that is similar to this current project. The question arises whether this is not a double spending of GEF funds? It is recommended to provide information on how overlap will be avoided and how coordination and synergy between the two projects will be ensured. Additionally, it is advised that the project should also seek to align with other similar GEF- and non-GEF-supported projects to learn, share and disseminate knowledge.
8. The sound management of chemicals is a very complex issue and requires adequate capacity. Hence, the training component of this project is vital and should include building the capacity needed for selection of proper technologies adapted to the different local realities in the various countries. STAP recommends a review of its advisory document on POPs technology selection: https://www.thegef.org/sites/default/files/publications/POPs_Disposal_Final_low_1.pdf, as well as UN Environment practical sourcebook on mercury management: <http://web.unep.org/chemicalsandwaste/global-mercury-partnership/mercury-waste-management/activities-and-projects/practical-sourcebook>. UN Environment resource on developing an integrated solid waste management plan (<http://wedocs.unep.org/handle/20.500.11822/7770>), should also be useful. Likewise, the UN Environment International Environmental Technology Centre (<http://web.unep.org/ietc/>) which focuses on waste management could also be engaged in the project.
9. Output 4.2 seeks to encourage the recycling of plastic waste to create pellets. While this is a good initiative and aligns with the concept of a circular economy, this need to be implemented using state-of-the-art knowledge and expertise, and with caution. This is because some plastics contain several hazardous substances which may be released into the environment during the recycling process (see, for example, Hopewell et al., 2009: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2873020/>; Lithner et al., 2011: <http://www.sciencedirect.com/science/article/pii/S0048969711004268>; Martinho et al., 2012: <http://www.sciencedirect.com/science/article/pii/S0956053X12000700>; Sepúlveda et al., 2010: <http://www.sciencedirect.com/science/article/pii/S0195925509000651>). It is therefore important that waste plastics are characterized to determine their chemical content before they are recycled.
10. Furthermore, no information was provided on the possible final use of the recycled plastic pellet. Overall, this will depend on the chemical content and physical properties of the plastics and the desired properties of the final product. It is advised that an analysis of the desired end product should be carried out once the baseline data on the type of plastic waste in this project has been determined. The Plastic Europe 2016 publication provides some indications of the potential end products from recycled plastics: http://www.plasticseurope.org/documents/document/20161014113313-plastics_the_facts_2016_final_version.pdf.

11. Landfill has been proposed as one of the technical interventions in the targeted countries. While this could probably be a practical solution, it should be noted that a state-of-the-art expertise in the design and maintenance of landfills would be important. This is because a poorly designed, constructed, or maintained landfill could be a source of environmental hazard including the contamination of groundwater, air pollution and the consequent impact on human health. See, for example, <https://sciencing.com/effects-landfills-environment-8662463.html>; and Townsend et al., 2015: https://www.researchgate.net/publication/280556744_Sustainable_Practices_for_Landfill_Design_and_Operation.

12. Furthermore, Output 4.2.5 indicates "flaring of landfill gas" as an option for preventing methane emissions. This is an unsustainable practice that would be detrimental to the expected environmental and economic benefits from this project. Firstly, flaring of landfill gas is a waste of valuable resources that could provide economic gains through electricity generation and help avoid CO₂ emissions by avoiding electricity generation from fossil fuels. Secondly, the flaring of methane is an important source of black carbon emissions, a highly potent climate forcing agent which also doubles as an air pollutant and a primary cause of premature deaths globally. See, for example, Gvakharia et al., 2017: <http://pubs.acs.org/doi/abs/10.1021/acs.est.6b05183>; Allen et al., 2016: <http://www.sciencedirect.com/science/article/pii/S2211339816300569>; Weyant et al., 2016: <http://pubs.acs.org/doi/abs/10.1021/acs.est.5b04712>; and UNEP/WMO 2011: <https://wedocs.unep.org/rest/bitstreams/12809/retrieve>. There has been a considerable push globally to move the oil and gas industry away from methane flaring including through initiatives led by the World Bank: <http://www.worldbank.org/en/programs/zero-routine-flaring-by-2030>. Gas flaring should not be promoted in the waste management sector. STAP wish to point out that the design of a sustainable landfill is incomplete without adequate provision for reuse of the landfill gas and treatment of the landfill leachates. This should be noted when developing this project further.

13. Concerning the challenge of e-waste management, the project intends to set up an e-waste recycling facility as a solution, which is a good management solution. However, this intervention will address the downstream aspects of the problem; that is, solutions that focus on the management of already generated e-waste (end-of-pipe solutions). However, for sustainability, it is also important to target the upstream aspects; that is, to address the issue of indiscriminate importation of electrical and electronic products into the countries. Without this, the problem will persist. It is advised that activities that can help ensure that only useful electrical and electronic products are imported into the countries are included in the project. Example of such activities may include: introducing policies and legislation on the importation of used electrical/electronic products and second-hand vehicles, developing guidance on criteria and standards for accepting used electrical/electronic products and vehicles into the countries, and the training of customs officers on effective monitoring of imported goods.

14. Additionally, some experiences and guidelines exist in developed and developing countries on managing e-waste; and it is recommended that some of these experiences should be explored while developing this project further. Examples include India: <http://www.moef.nic.in/divisions/hsmd/guidelines-e-waste.pdf>; BRS: https://www.unido.org/fileadmin/user_media/Services/Environmental_Management/Stockholm_Convention/Guidance_Docs/UNEP-POPS-GUID-NIP-2012-BATBEPBDEs.En.pdf; EMPA (Swiss materials and Technology Institute): <https://www.empa.ch/web/s604/e-waste>; <https://sustainable-recycling.org/tag/e-waste/>.

15. Component 3 indicates that six unique "national green windows" to support capacity building will be installed. However, no detail was provided on what is meant by "green window." The project proponent is requested to provide clarification on what green window means, what it is expected to achieve, and how it will deliver the expected results? Also, clarification is needed on the type of support that will be provided to micro-finance and banking institutions under Outcome 3.2. Is it financial, technical, or capacity building support?

16. More information is also needed on what is meant by "recycling unit (energy or matter)" under Outcome 4.2.

17. Overall, STAP believes that this is an ambitious project that will require significant coordination and stakeholder involvement. The project is needed to kick-start the sound management of waste in the targeted countries. However, for it to achieve the set objectives, it has to be developed and implemented, with more rigor, taking into consideration the latest scientific knowledge and technical solutions.

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
1. Concur	In cases where STAP is satisfied with the scientific and technical quality of the proposal, a simple “Concur” response will be provided; the STAP may flag specific issues that should be pursued rigorously as the proposal is developed into a full project document. At any time during the development of the project, the proponent is invited to approach STAP to consult on the design prior to submission for CEO endorsement.
2. Minor issues to be considered during project design	<p>STAP has identified specific scientific /technical suggestions or opportunities that should be discussed with the project proponent as early as possible during development of the project brief. The proponent may wish to:</p> <p>(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised. (ii) Set a review point at an early stage during project development, and possibly agreeing to terms of reference for an independent expert to be appointed to conduct this review.</p> <p>The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.</p>
3. Major issues to be considered during project design	<p>STAP proposes significant improvements or has concerns on the grounds of specified major scientific/technical methodological issues, barriers, or omissions in the project concept. If STAP provides this advisory response, a full explanation would also be provided. The proponent is strongly encouraged to:</p> <p>(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised; (ii) Set a review point at an early stage during project development including an independent expert as required.</p> <p>The GEF Secretariat may, based on this screening outcome, delay the proposal and refer the proposal back to the proponents with STAP’s concerns.</p> <p>The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.</p>