

# 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: March 14, 2016  
Screener: Christine Wellington-Moore  
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Consultant(s):

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

FULL SIZE PROJECT	GEF TRUST FUND
GEF PROJECT ID:	9234
PROJECT DURATION:	2.5
COUNTRIES:	Cameroon
PROJECT TITLE:	Integrated Sustainable Urban Development (SUDP) and Environmentally Sound Management of Municipal Solid Waste Project in Cameroon
GEF AGENCIES:	AfDB
OTHER EXECUTING PARTNERS:	Ministry of Environment, Protection of Nature and Sustainable Development (MINEPDED)
GEF FOCAL AREA:	Multi Focal Area

### 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):  
**Major issues to be considered during project design**

### III. Further guidance from STAP

The proposed project seeks to address root causes of environmental degradation in urban areas of Cameroon at the system level to decrease pollution and GHG emissions through the introduction of integrated and environmentally sound urban management practices. The PIF notes the need for appropriate institutional and policy coordination and expresses an intent to collect data to support elements of the urban development planning. However, there are some significant adjustments that should be made to the current conceptualization and future project design in the course of the PPG that would lay the foundation for a sustainable urban development plan that can be responsive to the rapid growth of Cameroon's urban areas and maximize attainment of the desired GEB's.

Solid waste treatment and disposal is problematic in many countries. This solution for Cameroon revolves around improved recycling and landfill treatment of municipal solid wastes (MSW). The climate change mitigation component is around 10% of the total being sought in this multi-focal project.

The proposal as it currently stands is confusing, as it essentially covers two separate issues without clear internal logic for how these two important issues are connected:

- how to better manage solid wastes; and
- how to improve urban infrastructure and transport activities. Urban sustainability is also stated to include the need for adaptation due to the risk of flooding.

A total of 2.5 Mt CO<sub>2</sub>-eq is claimed to be avoided by the MSW component of the project. However, even well designed landfills produce methane over several years as the organic fractions decompose. It is not clear why there seems to be no intention to install a landfill gas system at each site, to collect the gas and utilise it for heat and electricity purposes as is a well-proven technology. On page 23 it states "The collection of biogas will be considered as a technical option; the price and benefits will be compared". To do this

adequately one has to assume that there will be a future price on carbon. However, given the large number of successful land fill gas plants generating electricity and /or heat in many countries, it is surprising this was not included as a key part of the proposal. This option should be revisited at this stage of the approval process.

The potential CO2 emission reductions from the low-C transport component of the proposal are not provided.

The aim to produce compost from the organic fraction of the MSW is commendable as it can offset the demand for chemical fertilisers (page 12). But no cognizance of the reduced emissions that result from less chemical fertilizer manufacture is evident, nor is there any description of how the organic and inorganic waste fractions will be separated.

Overall, there is a need to do a deeper exploration of ways to generate revenue for waste management, which the PIF admits is a key issue. There needs to be a more extensive consideration of waste valuation, as only composting is considered to act as competition to chemical fertilizers. Anaerobic digestion usually fails for MSW as a large fraction is non-organic “ unless separated. Admittedly, composting can be impacted by lack of waste separation, though to a lesser degree. But separation could also open the door to exploring options such as biodigesters to generate methane, which in turn can be used to generate electricity. If proper separation can be done, the efficiency of anaerobic processes overall can be enhanced, including more options for value added activities from effective waste management. This could be a way to provide local renewable sources of energy, lower emissions from burning of biomass, and halt the filling of landfills with slow rotting biomass. STAP is currently researching innovative use of waste vegetative biomass to as a replacement feedstock in the production of materials where plastic is normally used (expected late 2016). STAP looks forward to sharing the results of this work with the proponents, however overall there should be exploration of options that avoid adding to emissions and toxic releases.

There is no mention of Cameroon's Nationally Determined Contribution under the section on national priorities (page 24). The proposal could be updated to assess whether waste treatment, landfills, transport and sustainable urban designs are being considered as part of the country's mitigation plans under the Paris Climate Agreement, December 2015.

The PIF does not draw out any intention to include measures to decrease the Health Care Waste generated at source, which would also act to reduce uPOPs. STAP wishes to suggest areas/references to improve the project development process, which includes examining previous non-GEF experiences in this field (as well as outside of the African context) given the limited experience of the GEF in this area of work:

(a) The resource materials from the 2008- 2014 UNDP/WHO Health Care Waste project should be of utility. The website for this project provides a resource overview page (currently with no active links), as well as an extensive list of downloadable training modules (<http://www.gefmedwaste.org/trainings-overview>). As this was a UNDP initiative it should be possible for the project team to get what is needed.

(b) The WHO Chapter on health care waste minimisation and management ([http://www.who.int/water\\_sanitation\\_health/medicalwaste/058to060.pdf](http://www.who.int/water_sanitation_health/medicalwaste/058to060.pdf) ). There is practical advice to minimise waste such as reducing the use of injections and hence generation of PVC waste through use of pills.

(c) Case studies such as "Best Practices in Health Care Waste Management: Examples from four Philippine Hospitals" ([http://www.noharm.org/lib/downloads/waste/Best\\_Practices\\_Waste\\_Mgmt\\_Philippines.pdf](http://www.noharm.org/lib/downloads/waste/Best_Practices_Waste_Mgmt_Philippines.pdf))

(d) The USEPA website gives links to "Hospital Prevention (P-2) strategies" (California Department of Health Services), and a "Guide to Mercury Assessment and Elimination in Health Care Facilities" (<http://www.epa.gov/region9/waste/p2/hospart.html>) which gives a breakdown of equipment of concern, methods of planning and implementation of HCW strategies and plans, and could be a good practical guide of past experience, complete with cost-benefit analyses. The page also includes a section on Pollution Prevention for Health care Professionals, which could help inform any training packages put together for doctor and nursing staff.

Additional issues

(i) Another thing not explicitly stated in the project is the reduction of the municipal type of waste generated by hospitals, which can make up about 80% of the total waste. It is also not clear exactly what waste

disposal options the project is willing to consider, other than leaving it up to PPP arrangements. An integrated plan has to consider implications of technology choices for emissions (eg incineration is a source of uPOPs and other toxic emissions; non-combustion disposal requires special technologies and training, handling of residues has to be considered etc). The project needs to seriously consider what is needed and should take more control of delimiting technologies and expected performance.

(i) The overall treatment of the waste element of the project is disjointed rather than integrated. It follows the design of a standalone waste project, and where the emissions elements recognize the need for geospatial inventory work, it is unclear why this approach is not applied to the waste area where it could also be beneficial. Considering the admission of ubiquitous dumping and burning of waste, mapping of such would assist planning and managing the implementation of new approaches. For integrated urban planning, particularly in a place that is experiencing such explosive population growth, establishment of a centralized process for collection of geospatial/georeferenced data is important, so that the integrated plan is evidence-based and can be updated as the urban centre grows. Basing any planning on static data sets simply makes no sense in an environment of rapid urban growth. Therefore, Components 1 and 2 should include activities to ensure institutional mapping of key data producers, and establishment of an agreed central manager of data that will be sustained post project. Development of appropriate indicators should be considered, as it helps ensure that required data is systematically captured. This should be for both waste management and emission-related elements. As AfDB is part of the GEF Cities IAP project, the STAP would suggest sharing the learning from this area and conveying it into this project for Cameroon in terms of laying the foundation for urban planning development.

(iii) The risk table cites that poor coordination and alignment in both the vertical and horizontal levels of governance will be of low risk. However, in tackling integrated urban planning, and coordinating data efforts to create continuous, updated evidence for responsive planning, it is doubtful that the required coordination will be easily achieved, as it is a struggle even in developed countries. Therefore, the STAP would caution underestimation of the level of effort required for success in this area.

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
<b>1. Concur</b>	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.
<b>2. Minor issues to be considered during project design</b>	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:  (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.  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.
<b>3. Major issues to be considered during project design</b>	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:  (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.  The GEF Secretariat may, based on this screening outcome, delay the proposal and refer the proposal back to the proponents with STAP’s concerns.  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.
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