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: May 04, 2012 Screener: Christine Wellington-Moore

Panel member validation by: Hindrik Bouwman
Consultant(s):

I. PIF Information *(Copied from the PIF)*
FULL SIZE PROJECT GEF TRUST FUND
GEF PROJECT ID: 4741
PROJECT DURATION : 3.5
COUNTRIES : Ecuador
PROJECT TITLE: Integrated and Environmentally Sound PCBs Management in Ecuador
GEF AGENCIES: UNDP
OTHER EXECUTING PARTNERS:
GEF FOCAL AREA: POPs

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 revision required**

III. Further guidance from STAP

The project seeks to focus on the promotion of "the sound management of PCBs contaminated oil, equipment, sites and wastes in Ecuador according to the Basel and Stockholm Conventions". Project components focus on: strengthening of institutional capacity for sound and environmentally friendly management of PCBs; improvement of environmentally sound management practices for PCBs; and environmentally sound storage and disposal of PCBs waste. It is acknowledged that there is limited capacity and infrastructure to deal with PCBs at the moment, including a lack of appropriate temporary storage facilities and fully certified disposal facility in the country. The project intends to do an analysis of options available to safely dispose of PCB-related oils, hardware and wastes, including that originating from the Galapagos islands. There is a fair stakeholder analysis and intention to liaise with and build on similar past PCB projects in the region. Some risk analysis is done, though it does appear incomplete in the opinion of the STAP. See comments below for further STAP advice.

STAP's comments:

Apart from their high log KOW values which permit strong adsorption to nonpolar surfaces (eg organic carbon) and lipophilic matrices in food chains (both aquatic and terrestrial, PCBs are marked by a number of chemical and physical characteristics, not the least of which are:- a) the myriad of congeners in existence, with attendant different levels of chlorination, b) the difference in behaviours and break down products of these congeners when released to the environment, c) the difference in their degree to be metabolised and non-uniform break down products within organisms, d) their readiness to volatise when spread over soil and water surfaces, e) their short atmospheric residence times (in the order of months), allowing them to vaporize and be re-deposited, cycling back between land and waters surfaces and air. Given these characteristics alone, it is hardly surprising that site-specific uniqueness has played a role in the recorded behaviour of PCBs in contamination cases around the globe. When one further considers that Climate Change is impacting, inter alia, on atmospheric temperature, rainfall regime, storm frequency and attendant drought/flood cycles, it is clear that in considering the potential impacts of PCB releases, it is equally important to look at the physical-chemical characteristics of the congener along with the natural geological and hydrological features of the area of contamination, and the fluctuating atmospheric conditions (temperature, rain, wind, vulnerability to storms etc) of the site.

The STAP guidance document "Selection of Persistent Organic Pollutant Disposal Technology for the Global Environment Facility: A STAP advisory document (2011), with a focus on environmentally sound disposal of POPs. This follows initial contributions from the GEF (through the STAP) in 2003/2004 in relation to available non-combustion technologies for POPs disposal; and apart from this, the Basel Convention, acting in concert with the

Stockholm Convention, has issued and periodically updates technical guidelines on POPs management. This guidance includes disposal requirements and listings of technologies that may be applicable to GEF projects. To date, these guidelines have been generally adopted by the Stockholm Convention as the standard reference. There have also been comprehensive reviews of technologies which are periodically published, and on-line libraries of technology data sheets are maintained by the Basel Convention and supporting organizations. The Fifth Conference of the Parties (COP-5) to the Stockholm Convention invited the Basel Convention to continue this work, specifically with respect to establishing the levels of destruction and irreversible transformation of chemicals to ensure POPs characteristics are not exhibited; considering methods that constitute environmentally sound disposal; defining low POP-content in wastes; and updating general technical guidelines as well as preparing or updating specific technical guidelines for environmentally sound waste management (SC-5/9). Likewise, in its decision SC-5/20, COP-5 further encourages the GEF and parties in a position to do so to facilitate the transfer of appropriate technologies to developing countries and countries with economies in transition (CEITs).

The STAP guidance document also points out that:

"…. the destruction or irreversible transformation of POPs in an environmentally sound manner is not limited by the availability of appropriate technologyâ€"there are a number of such technologies. Rather, it is limited by the practical ability to assemble and apply them--particularly in developing countries and CEIT's - in a manner that is environmentally effective, timely, and cost effective….. Destruction cannot be addressed in isolation. The application of POPs disposal technology should be viewed as one part of an overall POPs management process or system. This system includes steps taken in advance of the actual disposal or destruction to identify, capture, secure, and prepare POPs stockpiles and wastes for disposal. It also includes post-destruction steps to manage emissions, by-products and residuals. The management process depends upon high-quality information regarding POPs stockpiles and waste, and the effectiveness of the institutional and regulatory framework under which POPs management is undertaken."

With this background, the main comments follow:

(i) The risk analysis does not consider risks associated with lack of technical capacity associated with Sound Management of PCBs. There is a plan to develop a training manual on Sound Management of PCBs, but there is no apparent intent to develop a training strategy to show how manual contents will be eventually operationalized to support PCB management. The PIF seems to lack recognition that the development of a sustainable POPs disposal system should include collection, packaging, transportation, and disposal of targeted POPs and POPs containing equipment, with active involvement of government, communities, and relevant stakeholders in the targeted areas. STAP suggests that a careful consideration of each element would identify mechanisms and support infrastructure that may be absent, resulting in a better stakeholder and risk analysis.

(ii) The risk analysis does not look at climate-related or earthquake related risks that should influence transportation protocols (particularly when long distance transportation is expected from the Galapagos), criteria for site selection for the mid to long-term storage of PCB wastes, and the stable conditions necessary for storage facilities. Ecuador is a tectonically active area, and has nine different climates (one dry, three tropical (wet, monsoon and savanna), three meso-thermic (wet, semi-wet and dry) and the "paramo" (alpine tundra), the ninth climate being that of the Galapagos Islands), and so it is important that this be taken into consideration depending on the location of the PCBs in the country. There is also the El Nino/La Nina impacts on precipitation, the coastal rainy season, the topographic challenges (e.g. the Andes) etc. Disaster management plans for stockpiles and POPs containing articles might be considered, at least for significant or higher risk stocks at a minimum.

(iii) The potential of informal, repurposed use of POPs containing containers should be included in any targeted awareness in communities. There may be a large gender component to this (e.g. if women do water collection and other gathering of food using repurposed containers). It is unknown if this is indeed an issue in Ecuador as it is in many other countries, but it should be formally assessed and subsequently ruled out.

(iv) It is hoped that attention will also be paid to the handling of residuals from disposal processes. In developing the project document, and determining disposal options, there does seem to be intention to incorporate the Stockholm/Basel guidance, but this could be enhanced through use of the GEF guidance on technology selection for POPs disposal and the overall development of the ESM system for PCBs and pesticides. This would ensure that a comprehensive set of parameters be used to select technologies for GEF investment (e.g. environmental performance, ability to manage residuals and transformation products of the destruction and decontamination processes, full assessment of pre-treatment steps required and attendant associated risks, and required resources and capacities to manage them). Consideration, and where neded, implementation of the aforementioned management guidelines would be desirable, and would also ensure that the true costs of a technology are brought to light since pre-destruction steps (eg. characterization of the PCB congeners to be handled, prioritization, capture and transport, containment and pre-

treatment) can carry their own significant resource demands and capacity burdens. This can often be a significant barrier to implementation of technologies in developing countries and CEIT.

STAP advisory response	*Brief explanation of advisory response and action proposed*
1. Consent	STAP acknowledges that on scientific/technical grounds the concept has merit. However, STAP may state its views on the concept emphasising any issues that could be improved and the proponent is invited to approach STAP for advice at any time during the development of the project brief prior to submission for CEO endorsement.
2. Minor revision required.	STAP has identified specific scientific/technical suggestions or opportunities that should be discussed with the proponent as early as possible during development of the project brief. One or more options that remain open to STAP include: (i) Opening a dialogue between STAP and the proponent to clarify issues (ii) Setting a review point during early stage project development and agreeing 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.
3. Major revision required	STAP proposes significant improvements or has concerns on the grounds of specified major scientific/technical omissions in the concept. If STAP provides this advisory response, a full explanation would also be provided. Normally, a STAP approved review will be mandatory prior to submission of the project brief for CEO endorsement. 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.