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: September 18, 2011 Screener: Christine Wellington

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

I. PIF Information *(Copied from the PIF)*
FULL SIZE PROJECT GEF TRUST FUND
GEF PROJECT ID: 4485
PROJECT DURATION : 4
COUNTRIES : Costa Rica
PROJECT TITLE: Integrated PCB Management in Costa Rica
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

This proposal cites that its activities will support the GEF-5 Chemicals Framework, namely "to promote the sound management of chemicals throughout their life-cycle in ways that lead to the minimizations of significant adverse effects on human health and the global environment." The core PIF objective is to "Minimize risks of exposure from PCBs to people and the environment in Costa Rica". It seeks to do this, inter alia, through strengthening of legislative frameworks, improved enforcement, and improved management practices including the setting up of centralized interim storage for PCBs ahead of destruction, decontamination and recycling of PCB equipment and components, and setting up of an export-for-destruction scheme for more concentrated PCB stocks/wastes.

Related to the destruction activity, the project is to develop and adopt norms and regulations for transport, storage, maintenance, labeling, testing destruction etc of PCB-containing oil and equipment in Costa Rica, with development of attendant safety standards. Though specific sites are not named, the it would appear there is good coordination in locating about 85% of the PCBs in the country (since these are sites managed by the central electrical generation utility, ICE), and some level of laboratory capacity to monitor for PCBs, though it is in the process of being improved. However, there is extra effort needed to identify and characterise the non-ICE sectors to identify and characterise the PCBs, site vulnerabilities to contamination, etc. No indication is given on environmental monitoring. A risk of dealing with large amounts of PCBs is leakage and spillage. Costa Rica, judged from the little data available, seems to have fairly low levels of PCBs in biota and marine sediments. This data can be used as a project baseline in M&E.

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.

At this time, the STAP is in the process of finalising a guidance document (for November Council 2011) on POPs Disposal Technology in GEF projects, with a focus on what exactly constitutes environmentally sound disposal of POPs, and what disposal technologies can achieve it. 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 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 findings of the soon-to-be-published STAP document state, inter alia, 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."

Taking into consideration all of the above, the recommendation, therefore, is that in preparing the project document, there be:-

a) A reassessment of the risks thus far identified in Table B4 (Risk Table). All of the risks focus on financial, social acceptance and socioeconomic types of risks thus far, although one would assume the PPG will identify more such ahead of project brief development. Admittedly, as the intermediate storage/transfer decontamination site selection process is being carried out, the document has been clear that an EIA will be done, and it is assumed that climate-resilience elements can be more explicitly worked in, along with the Stockholm, Basel, and GEF guidance as required.

b) Specific consideration of the Basel guidelines along with other GEF and Stockholm guidance (including the STAP Advisory document that will soon be available) in all steps of creating an environmentally sound management system for PCB disposal. This should ensure that there is clear attention made to the identification and associated capacity needs of the pre-destruction steps (eg. characterization of the PCB congeners to be handled, prioritization, capture and transport, containment and pre-treatment). In addition, the selection of the destruction technology should not only be guided by environmental performance (destruction efficiency/destruction and removal efficiency), cost-effectiveness and market availability, but also consideration of the ability to manage the disposal of by-products and residuals of destruction processes. This is particularly key to this proposal since there is a specific plan to do in-country decontamination and recycling, and there so fate of residues, and proper definition of low POPs concentrations will be critical.

c) A reworking of the PPG such that the Environmental M&E Specialist (or some other specialist as deemed necessary) take on board specific activities in his TOR to help ensure there are appropriate indicators for use in the EIA to determine (inter alia) the location and capacity/management requirements for the intermediate storage site(s) and transfer decontamination station(s). There should also be a clear window where the Stockholm/Basel and/or GEF technical guidance can be incorporated into the project's development to ensure that a resilient Environmental Management System is put in place. This would ensure that the full set of parameters for selection of sustainable disposal/destruction is taken into consideration.

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.