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: 4417
PROJECT DURATION : 4
COUNTRIES : Colombia
PROJECT TITLE: Development of National Capacity for the Environmentally Sound Management and Disposal of PCBs
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 "Increase national capacity to identify, manage and dispose of existing PCBs in Colombia in an environmentally responsible manner in order to meet Stockholm Convention country commitments and minimize the risks to the population and the environment posed by PCB exposure." It seeks to do this, inter alia, through strengthening of legislative frameworks, setting up of capacity to manage and monitor sound management and disposal of PCBs (including enhancing related national capacity, identification and management of contaminated sites, and setting up of guidelines and standards for handling of contaminated equipment and oils, transportation, storage, disposal, occupational health and safety etc), and the setting up of a number of demonstration projects to promote environmentally sound management (ESM), at least two disposal technologies, and decontamination approaches. Export-for-destruction schemes for certain PCB stocks/wastes will also be considered.

Related to the destruction activity, there are already companies with technologies wishing to invest, and so the project aims to establish partnerships with potential investors already identified to evaluate at least two different technologies. The document states that the GEF funding "will be applied as seed capital to enable stakeholders to subsequently proceed with the conversion and disposal of PCBs themselves making use of financially viable PCB disposal technologies and conditions as put in place as part of the project." Though specific sites are not named, it would that both on and off-grid areas will be targeted, with undoubtedly unique contamination risk potential.

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 clear attempt to incorporate the Stockholm/Basel and GEF guidance on technology selection for POPs disposal and the overall development of the ESM system for PCBs in Colombia. This would ensure that a comprehensive set of parameters be used to select technologies for GEF investment (eg 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), as opposed to willing investors being the sole driving force behind technology selection. In assessing risks associated with inadequate PCB management tools, Table B4 of the PIF already indicates the intention to consult with international guidelines, standards and safety practices in other countries, and exchange with other UNDP projects. But a more explicit following of the aforementioned scientific guidelines would be desirable in the course of project development and implementation. This 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 and capacity burdens, and can often be the barrier to implementation of technologies in developing countries and CEITs. Definition of environmentally safe low POPs concentrations would also be clearer and kept consistent with best practices, a critical point given the intention to pursue decontamination at national level.

b) In assessing the sites for gathering up of PCBs, storage sites and decontamination facility sites, there should be consideration of the risks associated with transportation between sites, as well as the site-specific contamination associated with geo-/hydrological features, atmospheric conditions and any changes associated with climate change (eg changes in storm frequency, ground water aquifer levels, rainfall and drought/flood cycles etc) that may differentially impact the security of the sites in the various areas of the country. It assumed that EIAs will be carried out in selection

of sites for storage, destruction and/or decontamination activities, and that climate-resilience will be incorporated into safety guidelines developed for transport, health and safety etc.

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.