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: January 23, 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: 4477
PROJECT DURATION : 5
COUNTRIES : Pakistan
PROJECT TITLE: Comprehensive Reduction and Elimination of Persistent Organic Pollutants in Pakistan
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): **Consent**

III. Further guidance from STAP

The project focuses, inter alia, on PCB elimination, POPs pesticide elimination, and management of obsolete stocks and contaminated sites. The project seems to be soundly informed by data and guidance from the country NIP, and there is good consideration of climate change considerations due to the high impact of 2010 flooding in the country in exacerbating POPs/hazardous chemicals contamination and exposure of local communities, water and food sources. As such, rapid assessment of flooding consequences for stockpiles and POPs containing articles will be undertaken, which is highly commendable. It would mean therefore that adaptation measures, site selection and safe transportation protocols will take Climate Change into consideration. In addition, in line with STAP and other guidance, there appears to be good 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 of Pakistan, and recognition that mechanisms and support infrastructure may be absent. The POPs inventory as listed in the country NIP, inter alia includes 82,890 tons of PCB-contaminated transformer oils, an annual emission of almost 30 Kg TEQ, and 6,033 tons of POPs pesticide stockpiles. This project aims to dispose of 1,200 tons of POPs pesticides and to dispose of 300 tons of PCB equipment.

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 Advisory document on POPs Disposal Technology in GEF projects focuses 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 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."

With this background, the main comments follow:

(i) In the description of socioeconomic benefits (including gender) that are envisioned to emanate from the project, more detail is given on the use of the rapid assessment process, and ensuring relief to local communities. Local stakeholder consultation and participation are cited as integral to the project. However, there is no clear mechanism to address gender, especially when one considers that women (and children) are often deeply involved in agriculture, but are also not given a large voice in public discourse. In some areas, it may be problematic for men and women to participate in capacity building/awareness activities together due to cultural sensitivities. Therefore it would seem that there needs to be consideration of the necessity/utility of gender specific targeting of activities.

(ii) The dangers 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 (eg if women do water collection and other gathering of food etc using repurposed containers).

(iii) 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 should be 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 and pesticides. 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). A more explicit following of the aforementioned scientific guidelines would be desirable in the course of project development and implementation, 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 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.

(iv) It is not clear how the disposal will be done. Provision needs to be built into the project to manage the amounts in a way that will be sustainable beyond the duration of the project.

(v) The current POPs stockpile (PCBs and pesticides) in Pakistan seems to be particularly large. Combined with the country's susceptibility towards natural disasters and associated sensitive rural and urban populations, the present threat towards human health and the environment seems to be quite high. STAP strongly supports the intention of the project

map high priority regions and sites, and would like to see this activity expanded to a national level. Such an activity would identify areas and issues for further urgent intervention to reduce the immediate threats and thereby update the current NIP.

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.