

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 14, 2014

Screener: Christine Wellington-Moore

Panel member validation by: Jakob Granit; Ricardo Orlando Barra Rios
Consultant(s):

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

FULL SIZE PROJECT GEF TRUST FUND

GEF PROJECT ID: 6952

PROJECT DURATION :

COUNTRIES : Mexico

PROJECT TITLE: Implementation of the Strategic Action Program of the Gulf of Mexico Large Marine Ecosystem

GEF AGENCIES: UNIDO

OTHER EXECUTING PARTNERS:

GEF FOCAL AREA: International Waters

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

This project is based on the preparation of a TDA and further development of a SAP (to be signed by the two governments). The proposed project is about implementation of the SAP that identifies the following 6 key investment areas: 1) improve water quality; 2) avoid depletion and recover depleted living marine resources; 3) conserve coastal and marine ecosystems; 4) mitigate and adapt to climate change; 5) improve science education and outreach; and 6) cross cutting issues. The proposed project components focus on 1, 2 and 3 above. At the same time a key barrier as noted in the PIF is the political complexities and economic differences in the region and the need to overcome these. However, this issue is not targeted in the proposed components that are primarily of a technical character. The justification of the selection of components in the light of the larger set of issues referred to in the TDA and the SAP should be developed during the project preparation period and documented to ensure that limited GEF financial resources achieve the best possible impact and contribute to longer term sustainable development in this LME beyond the lifetime of the project.

Regarding the water quality component the approach is to primarily implement UNIDO's Transfer of Environmental Sound Technologies (TEST) approach to pollution control. This can be a relevant approach but the PIF does not explicitly refer to other government approaches to combat point source pollution.

The Coatzacoalcos river is named as a special hot spot to be addressed in this project, as it contains the second largest chlor-alkali plant in Latin America. More specifically, it is a plant that uses mercury in its production processes (as opposed to diaphragm or membrane processes); but this plant is one of two listed for Mexico under UNEP's Global Mercury Chlor-Alkali Partnership. Apart from the already recognized Industrias Químicas del Istmo chlor-alkali plant, there are several additional mercury sources in the area. There are the Cangrejara and Morelos petrochemicals complexes, and several incinerators of regional hospitals and crematoria. There is an oil and gas refinery (General Lazaro Cardenas refinery) which operates at a capacity of 350,000 barrels/day. There are 2-3 incinerators in the Pajaritos petrochemical complex, one of which mainly burns wastes from vinyl chloride production. Mercury can also come as a threat to human health from fish. Fish sampled in Coatzacoalcos River (common and fat snook, gafftopsail catfish) had mercury levels above the US EPA mean Hg reference dose of 0.22ppm. This corresponds to a recommendation of not being eaten more than once a month. Some samples exceeded by about 1.8 fold the reference. Other studies have inferred air transport of Mercury from the aforementioned petrochemical chemical complexes, carried by prevailing wind currents in the region of Coatzacoalcos and going south and southeast to be deposited by rainfall.

With this background, and acknowledging the complex fate and transport modalities of mercury between its organic and inorganic forms, and the differentiated threat of the mercury species, what is absent from this proposal, Component 2 in particular, is the tracking of biotic mercury in commercial fish species. There is reference made to finding out the causes of collapses, and that most expect warmer surface waters and overfishing are the main culprits. But given that Coatzacoalcos is one of the globe's top 10 mercury hotspots, it would be a boon to partner with the Biodiversity Research Institute (BRI) (see www.briloon.org) and IPEN (www.ipen.org) to help with data sharing, base lining and monitoring of various species to further delimit potential impacts to fish quality, and to human health. The Joint BRI-IPEN 2013 Report "Global Mercury Hotspots: New Evidence Reveals Mercury Contamination Regularly Exceeds Health Advisory Levels in Humans and Fish Worldwide" (see http://ipen.org/hgmonitoring/pdfs/mexico_mercury_report-fish_final-en.pdf) indicates that 73% of human hair samples of people in the Coatzacoalcos region exceeded recommended levels. It would also help that BRI has already developed sample data protocols, which would be a considerable saving of effort and resources, and there could be overall leveraging of efforts in this area. Therefore Component 2 of this project would benefit from considering previous work, and partnering to expand on it in the course of the project, as it may help round out recovery efforts for fisheries, whilst uncovering threats of particular species to human health.

Coordination of national governance would also benefit the project, though there does already seem to be consideration of several important national bodies, at various levels of government and/or private sector. Careful cobbling together and complementarity of roles of each in the project will be critical. This project's support to the broader water resources management programs implemented by CONAGUA should be referred. Ideally these activities fit strategically into CONAGUA's IWRM frameworks.

Regarding the coastal components there is no mention of the role of reefs or estuaries in this PIF, though attention is paid to rehabilitation of fisheries. Reefs play important breeding and source areas for larger species such a grouper. UNIDO might commiserate with past/ongoing GEF projects such as the Ridges to Reefs programme (GEF ID 5404) or the "Reducing Pesticide Run-Off to the Caribbean Sea" (GEF ID 1248) project (though STAP is sure there can be other examples found across the GEF portfolio) to serve as additional sources of info and lessons learned. The issue of ecosystem management seems to have been skipped in favour of concentration on fisheries, which are likely impacted by degraded habitat as much as overfishing. Cleaning up the water and better management of fishing practices alone will not necessarily translate to rehabilitated fisheries.

The approach also seems insufficient given the project objective, which reads: "Improve water quality, rehabilitate the coastal and marine ecosystems, and avoid depletion of marine resources of the Gulf of Mexico Large Marine Ecosystem". But the second project outcome pays attention only to rebuilding fishery stocks without mentioning any other biodiversity concerns, as one would expect from a project seeking to rehabilitate coastal and marine ecosystems. Finally there is no planning in place for resilience to climate. How is planning for climate change adaptation accommodating, or are rehabilitation targets being baselined on a past status quo? How will the fisheries industry be adapting?

For these reasons the STAPs suggests careful problem and stakeholder analysis to inform the log frame, actions and risks associated with the current project objectives of this project to ensure the projects support to the broader issues identified in the SAP but also ongoing national programs related to water resources management, coastal zone and marine management.

Citations:

Chemical and petrochemical industry site: Coatzacoalcos region in Mexico. "Mercury levels in fish in the Coatzacoalcos River" IPEN Mercury-Free Campaign Report. Prepared by Ecología y Desarrollo Sostenible en Coatzacoalcos, A.C. and Centro de Análisis y Acciones en Tóxicos y sus Alternativas "CAATA" (Mexico), Arnika Association (Czech Republic) and the IPEN Heavy Metals Working Group Coatzacoalcos "Mexico City" 3 April 2013.

Baez Bájiz, A.P., R. Nulman, I. Rosas and L. Gálvez (1976). "Aquatic organism contamination by mercury residues in the Coatzacoalcos River Estuary, Mexico." International Atomic Energy Agency, Viena:73- 99.

STAP advisory	Brief explanation of advisory response and action proposed
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<i>response</i>	
1. Consent	<p>STAP acknowledges that on scientific or technical grounds the concept has merit. However, STAP may state its views on the concept emphasizing any issues where the project could be improved.</p> <p>Follow up: The GEF Agency is invited to approach STAP for advice during the development of the project prior to submission of the final document for CEO endorsement.</p>
2. Minor revision required.	<p>STAP has identified specific scientific or technical challenges, omissions or opportunities that should be addressed by the project proponents during project development.</p> <p>Follow up: One or more options are open to STAP and the GEF Agency: (i) GEF Agency should discuss the issues with STAP to clarify them and possible solutions. (ii) In its request for CEO endorsement, the GEF Agency will report on actions taken in response to STAP's recommended actions.</p>
3. Major revision required	<p>STAP has identified significant scientific or technical challenges or omissions in the PIF and recommends significant improvements to project design.</p> <p>Follow-up: (i) The Agency should request that the project undergo a STAP review prior to CEO endorsement, at a point in time when the particular scientific or technical issue is sufficiently developed to be reviewed, or as agreed between the Agency and STAP. (ii) In its request for CEO endorsement, the Agency will report on actions taken in response to STAP concerns.</p>