Project 9	Monitoring and Assessing Pollutants across North America	Responsible Project Manager at the CEC Secretariat	Luke Trip
Planned	2008: C\$284,530	Working Group(s)	Environmental Monitoring and Assessment
Allocation		associated with this work	Standing Committee

## **Objective of Project**

The purpose of this project is to assist the Parties in increasing the comparability, reliability, relevance and availability of data and information on toxic substances in the North American environment. Specifically, it seeks to improve the generation and management of information needed to identify and assess trends and concerns related to contaminants and stressors that affect the environment and human health. It will also help advance the Parties' shared international objectives, including those under the *Strategic Approach to International Chemicals Management* (SAICM) as well as consideration of the August 2007 announcement of the North American Leader's Summit on the Security and Prosperity Partnership (SPP) for regulatory cooperation in the area of chemicals.

The project fosters and encourages cooperation and collective action in planning, conducting and reporting information from baseline surveys, monitoring, modeling and research regarding the status, trends and effects of persistent and toxic substances. The focus of the project is to develop scientifically sound information for decision-makers and to build capacity through regional and international cooperation in efforts to measure, monitor and assess toxic substances across the continent.

## Background

The project originates from the North American Regional Action Plan on Environmental Monitoring and Assessment (EM&A NARAP). The EM&A NARAP was created to assist the Working Group for the Sound Management of Chemicals (SMOC) and its Implementation Task Forces in meeting the environmental monitoring and assessment obligations identified and implied under Council Resolution 95-05 and/or in substance-specific NARAPs developed pursuant to that Resolution. Resolution 95-05 directed the development of North American Regional Action Plans (NARAPs) for certain persistent and toxic substances. This Resolution also established the Sound Management of Chemicals Working Group and several Implementation Task Forces charged with implementing the decisions and commitments set out in the Resolution, on behalf of the Council.

Currently under development is an Information Road Map, which will outline how the SMOC Working Group will achieve its information goals for the next ten years. The Information Road Map will set priorities for work under the Monitoring and Assessing Pollutants across North America project, largely related to the development of a regional and sustainable approach to monitoring and bio-monitoring.

- A major part of the *cooperative strategy* for the sound management of chemicals is an emphasis on the expert input by stakeholders on current or future initiatives. The key stakeholders/organizations who will actively participate in the EM&A work are projected to be mainly those in academia, industry and ENGOs from all three countries. The EM&A Standing Committee will coordinate with other international, regional and national government agencies with relevant expertise.
- Co-chaired by representatives of the three Parties, a Standing Committee oversees and assists in the implementation of work under the EM&A NARAP and related tasks within the project. Over the next few years, the Standing Committee will concentrate not only on the implementation of the EM&A project but will also assist the SMOC Working Group in developing its information priorities to 2020.

For more information please go to the following link:

<http://www.cec.org/programs\_projects/pollutants\_health/project/index.cfm? projectID=25&varlan=english>.

### Rationale

The EM&A project is linked to Information for Decision-making through its mandate for improving monitoring, modeling and research on a North American scale, to assess the progress of the CEC's SMOC initiative, but also to continuously improve the availability of information for decision-making at many levels. Thus, this project supports and contributes to other priorities of the CEC and the Parties, including the incorporation of environmental data into the North American Atlas and the assembly of data for development of viable indicators for state-of-the-environment reporting.

Certain persistent, bioaccumulative, toxic chemicals (PBTs) released to the environment as a result of human activity are transported long distances through air and water and pose unacceptably high risks to the environment, to ecosystems, to human health and to sustainable development. Convenient and dependable access to and dissemination of relevant, reliable and comparable monitoring information, along with sound interpretive assessments based, in part, on that information are crucial to the confirmation and quantification of progress made. Mexico identified as a national priority the development and implementation of a national monitoring initiative. The availability of such information is important for risk analysis, risk assessment, risk management and the communication of risks to targeted groups and the general population.

A cooperative regional approach to monitoring is critical to understanding short- and long-range transport mechanisms of chemicals in air and water and to monitoring emissions from chemicals and products in trade throughout their life cycles. Developing and implementing an integrated North American monitoring network will enable decision-makers to identify areas that are the most affected on a regional scale. In addition, a regional approach to monitoring will help link the effects of environmental policies and chemicals management. Short-term local monitoring initiatives can provide limited focused information, while a long-term approach to monitoring provides more robust information about long-term trends in substance levels and allows for the detection of changes.

## **Activities and Outputs**

Principle outputs from this project include: further development and implementation of an integrated trinational monitoring network; promotion of sustainable environmental monitoring and human bio-monitoring infrastructure in Mexico; and, submission of a funding proposal to an international funding institution (IFI).

Information about current monitoring activities of the substances covered by North American Regional Action Plans (NARAPs), as well as other PBTs monitored within these networks, will be compiled and a report issued.

Multiple trilateral monitoring initiatives will be developed and undertaken. These will include, amongst others, a pilot trilateral monitoring project of PBT levels in biota. In addition, the EM&A Standing Committee will work with NARAP Task Forces to develop and implement projects to monitor dioxins and furans, lindane, and mercury. Data from these projects will support development of maps of baseline levels of persistent toxic substances.

More details are provided in the Implementation Plan.

### Target groups

The Parties, more specifically their health and environmental agencies.

Partners/Stakeholders

Members of task forces or working groups:

For Canada: HC, EC, Fisheries and Oceans Canada (FOC), NRCan

For Mexico: Semarnat, Profepa, Secretaría de Salud (Salud), Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación (Sagarpa)

For the United States: CDC, US EPA

Indigenous governments and their organizations, as well as stakeholders in academia, industry and NGOs.

Associated outputs/products (including timelines for completion)

- A comprehensive report, based on work completed in 2007 (gray literature studies) will present, summarize and analyze information about levels of PBTs in Mexico and identify information gaps, December 2008.
- A synthesis and assessment report regarding the change in status and trends of the current status and distribution of the NARAP chemicals in the major components of the North American ecosystem and the threat they pose to North American environmental and human health. This report will be drafted in the 2007 fiscal year, but will be reviewed by the Parties in 2008; the final report is expected in June

#### 2008 Project Description

### 2008.

- A proposal for a Mexican environmental monitoring and human biomonitoring program (*Programa Nacional de Monitoreo y Evaluación de México*—Proname) will be presented to an international funding institution, May 2008.
- Selection of NA index sites, collection of data from monitoring programs, focusing on data from the United States and Canada in a compatible format with the NA Environmental Atlas, December 2008.
- A synthesis of current monitoring information in the three countries, February 2008.
- A comprehensive report on mercury in fish from the Lake Zapotlán watershed, Mexico, July 2008.
- Quality assurance/quality control (QA/QC) report on blood POPs analysis, December 2008.
- Guidance document for trilateral bio-monitoring exercise, December 2008.
- Workshop on communication strategy on POPs in Mexico, including dioxins/furans, August 2008.
- Workshop on dioxins/furans modeling, June 2008.
- Report on assessment of lindane in Mexican dairy products, December 2008.
- Synthesis of information on mercury fish tissue studies, December 2008.

### **Anticipated Outcomes and Performance Indicators**

#### Direct Outcomes:

First-level effects of the outputs include: improved understanding; increase in environmentally beneficial behavior; capacity building; and international cooperation in efforts to measure, monitor and assess persistent and toxic substances across the continent.

#### Intermediate Outcomes:

A link to this CEC project will be supplied through the Proname initiative. While Mexico has capability to monitor and analyze PBTs, there is an identified need to strengthen its institutional capacity to monitor these chemicals on a sustained, long-term basis. Successful adoption of a national environmental monitoring and assessment infrastructure would provide valuable information for decision makers to make sound environmental decisions, thereby helping Mexico to meet its obligations under the Stockholm Convention. Benefits and changes resulting from this project include increased comparability, reliability, relevance and availability of data and information on toxic substances in the North American environment.

#### Final Outcomes:

The information generated through the project will provide the national governments and stakeholders with meaningful insight into the levels and impacts of contaminants in North America, thereby assisting policy-developers to focus on priorities for reducing environmental impacts. It will also lead to greater policy coherence.

#### Performance Indicators:

- Results from QA/QC round-robin procedures (capacity building).
- Harmonization of information collected in the three countries, consecutive to the involvement of different governmental officials through Working Group and Task Force.
- Inclusion of the Proname initiative in Mexico's Stockholm Convention national implementation plan (NIP) report.
- Increased availability of reliable data on toxic substances in North America.

### **Timetable and Project Sustainability**

Promotion of comparable, reliable, relevant and available data and information on toxic substances in the North American environment is an ongoing process. Improving the generation and management of information needed to identify and assess trends and concerns related to contaminants and stressors that affect environmental and human health is also an ongoing process.

Annual stakeholder meetings with the Parties, organized to ensure that an

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active dialogue is maintained between the Parties and the stakeholders. Combined with regular meetings and monthly conference calls by the EM&A Standing Committee and its working groups, catalyzation of new actions can be maintained.

Upon initiation of a specific project, objectives are set to attain sustainability in all aspects of capacity-building projects.

### Communications

The SMOC working group has a well-established relationship with its stakeholders, and seeks to enhance their engagement in current and future activities. The EM&A initiative benefits directly from this relationship. This will be achieved through stakeholder participation at the levels of project implementation; development of outreach materials; organizing public sessions at SMOC meetings; holding joint meetings with other CEC groups; and participating in conferences and workshops organized by others.

The success of this project depends upon developing and maintaining public support and continuing support from the monitoring and scientific communities. Communication through the release and dissemination of results, progress summaries, educational material and contributions to other outreach products, will encourage this support. Public consultation events, sponsored by the Standing Committee and the Sound Management of Chemicals Working Group, as well as reports submitted to the Council and the CEC's Joint Public Advisory Committee, will provide required levels of accountability.

### **Information Management**

As the information may be of a technical nature and require assessment through statistical analysis and trends development, electronic storage and retrieval mechanisms will be required. A great deal of the data is intended to be amenable to mapping and, thus, comparability and compatibility is of paramount importance. Presentation of the data in a North American context is of particular interest so that mapping and GIS referencing can be facilitated. The accessing of outside funding may require sharing of information with agencies such as the World Bank, the Pan American Health Organization (PAHO), the Global Environment Facility (GEF) and other international funding institutions (IFIs), in order to fulfill contractual partnership agreements.

### **Other Information**

This version of the operational plan reflects the consensus decisions of the SMOC Working Group following its national leaders meeting in Brandywine PA, USA, 3–5 October 2007. Of particular note is the realignment of the SMOC program priorities according to the concept areas considered to be the focal area of the program. Four main areas of work have been proposed, as follows:

- 1. Develop and implement a sustainable approach to monitoring, including bio-monitoring.
- 2. Establish a foundation for chemicals management in North America.
- 3. Reduce the risk from chemicals of concern to North America.
- 4. Improve environmental performance of sectors.

Of these four areas, the first, relating to monitoring, applies in particular, but not singularly, to the Environmental Monitoring and Assessment project. The other three can be considered to focus on areas for SMOC project. The SMOC WG also agreed that communications and outreach should be a guiding principle of the program and thus allocated part of the operational plan to this important effort. The operation of the program also needs to be appropriately funded in order for the Parties to meet and discuss the SMOC initiative in a collaborative and transparent manner.

### **Implementation Plan**

### **PROJECT 9 – Environmental Monitoring and Assessment**

2008 Tasks	Subtask	Key Outputs	Timing	Expected Outcomes	Beneficiaries (Reach)	Budget (C\$)	Future Activities
1. EM&A Standing Committee Operations	1.1 Addressing North American needs for environmental monitoring and assessment (EM&A)	The EM&A Standing Committee will meet once a month via conference call to review projects undertaken and rank projects for future implementation. One face- to-face session will be held every other year.	Jan–Dec	Assessments of work completed and a continuing dialogue for future North American EM&A activities Will lead to an increased awareness and knowledge; an optimal use of resources and a greater policy coherence	US EPA, CDC, SFEI, Semarnat, <i>Instituto</i> <i>Nacional de</i> <i>Ecología</i> (INE), Cenica, HC, EC	\$55,000	Monthly conference call meetings
2. Outreach and engagement	2.1 Workshop to improve outreach and engagement among various stakeholders and national officials respecting toxic substances and focusing on Mexico's international commitments and SMOC linkages	Capacity building workshop on improving outreach and engagement between specific sectors: stakeholders and national officials	May–August	Improved outreach and engagement for delivering information to the public and keeping industry and the public appraised of North American Chemicals management initiatives	US EPA, Semarnat, Salud, Sagarpa, EC, HC, indigenous governments and their organizations, the Secretariat, general public and all stakeholders	\$20,000 (may be conducted simultane ously with a similar effort in the SMOC project # 12	A workshop annually or biennially as determined by changes in North American and international chemicals management strategies
	2.2 Addressing toxics and contaminants from an indigenous and local community context	The SMOC WG, EM&A SC and the PRTR officials will work collaboratively to address toxics and contaminants concerns of indigenous and local communities. The next		The project will enhance the environmental management capacity of indigenous people of North America and further promote indigenous and local people's involvement in the	Indigenous governments and their organizations, US EPA, EC, HC, Semarnat, Salud		Continuation of outreach and communications with affected communities.

2008 Tasks	Subtask	Key Outputs	Timing	Expected Outcomes	Beneficiaries (Reach)	Budget (C\$)	Future Activities
		SMOC WG public meeting will consider locating in the vicinity of interested indigenous communities		CEC program.			
3. Foundation Development	3.1 Pilot project: guidance document for trilateral bio- monitoring exercises	Document to provide guidance on round-robin QA/QC; analytical data management and other quality assurance issues, including facilitation of customs clearance.	Jan–Dec	Increased knowledge; optimal use and resources and improved validity and reliability of data are expected.	US EPA, CDC, Semarnat, INE, Cenica, EC, HC	\$20,000	Continued exercises in improving reporting and comparability of data.
		Quality Assurance Summary Background paper: Guidance document for trilateral bio-monitoring exercises	Secretariat rev Stakeholder/E Party review- Party review- Publication: D				
	3.2 Pilot project: <i>QA/QC exercise for</i> <i>blood POPs analysis</i> (with a focus on Mexico)	Capacity building project among various laboratories and reference standard validation facilities, primarily in Mexico	Jan–Dec	Validation of laboratory capacities through improved comparability and reliability of data.	US EPA, CDC, Semarnat, INE, EC, HC	\$25,000	Continued improvement in laboratory capacity and result reporting.
4 Reduce Risk of Chemicals	4.1 Pilot project: Assessing mercury exposure risk in the Lake Zapotlán watershed, Mexico Seed money to initiate a pilot	A report will be provided at the end of the project	Jan–Dec	This project will provide information to all three North American countries about the levels of mercury in various media, resulting in new data for Mexico that is comparable to data from	US EPA, CDC, Semarnat, INE, Cenica, EC, HC	\$10,000	The CEC will continue to seek to benefit from external but pertinent projects being resourced by others, such as

2008 Tasks	Subtask	Key Outputs	Timing	Expected Outcomes	Beneficiaries (Reach)	Budget (C\$)	Future Activities
	trilateral monitoring program to monitor levels of PBTs in biota			the US and Canada, thereby improving the understanding of levels of PBTS across the region and greatly increased information for decision- making in Mexico.			academia, through addition of seed funding.
	<ul> <li>4.2 Dioxins and furans: <i>air monitoring project</i></li> <li>Continuation of dioxins and furans air monitoring and analysis, pending securing outside funding.</li> </ul>	Continued CEC assistance with the new 7 station D/F network in Mexico and initiation of linkages to similar US and Canadian data	Jan–Dec	Data generated from these 7 monitoring stations and from similar networks in Canada and the United States will be assembled in a format compatible with the North American Environmental Atlas and/or for use in standard Geographic Information System platforms.	US EPA, CDC, Semarnat, INE, Cenica, EC, HC	\$15,000	Sustainable integration of D/F monitoring into Mexico's priorities
	4.3 Dioxins and furans: emissions modeling workshop	Conduct a workshop with the North American experts on long-range transport modeling together with SMOC Approximately 30 people will attend and 15-18 of them will be supported by the CEC.	March	This workshop will enhance Mexican capacity in long range transport modeling	US EPA, CDC, Semarnat, Cenica, EC, HC	\$10,000 Plus \$15K from the SMOC, project, task 4.4.3	Modeled emissions from Mexico, Canada and United States to form part of the North American mapping report
	4.4 Mercury project The SMOC Mercury Task Force will work with the EM&A SC to implement trilateral monitoring	Several fish tissue studies will be consolidated and data assessed for gaps in knowledge of mercury in fish. A report focusing on the Mexican situation is expected	Jan–Dec	Increased awareness and knowledge; improved understanding of an environmental challenge; optimal use of resources and greater policy coherence are expected	US EPA, CDC, Semarnat, INE, Cenica, EC, HC	\$10,000	A comprehensive report, to be revised every 3 years

2008 Tasks	Subtask	Key Outputs	Timing	Expected Outcomes	Beneficiaries (Reach)	Budget (C\$)	Future Activities
	and assessment projects related to mercury.	Quality Assurance Summary <i>Report:</i> Report on mercury levels in fish	Stakeholder/E Party review-	iew: August 2008 xpert review: August 2008 Drafting: September 2008 Quality assurance: October 2008	8		
	<ul> <li>4.5 Lindane monitoring project: dairy products</li> <li>Seed money provided by CEC to catalyze contributions from other agencies and interests.</li> </ul>	A pilot project on lindane levels in dairy products, identified by the Lindane TF and EM&A SC will be implemented. Dairy products targeted as an indicator of children's environmental health	Jan–Dec	Increased awareness and knowledge; improved understanding of priorities for lindane elimination	INE, Semarnat, Cofepris, UNEP, WHO	\$20,000 See also SMOC project, task 4.3.2	Information to be developed for use by Mexico in its submission for Lindane inclusion in the Stockholm Convention
5. Regional Monitoring Development and implementation of an integrated North American contaminants monitoring network to produce comparable and compatible data	5.1 Promotion of sustainable monitoring and assessment infrastructure in Mexico	Drawing on the Grey literature study, "Proname scoping study," identification of monitoring and analysis infrastructure in Mexico, and Assessment of NARAP Implementation report.	Jan–Dec	The activities within this task will collectively contribute to the development of a NA regional monitoring network. With an emphasis on baseline information in Mexico.	US EPA, CDC, Semarnat, INE, Cenica, EC, HC.	\$30,000 [total of 5.1 to 5.4	A comprehensive report, to be revised every five years, will present, summarize and analyze information about levels of PBTS and identify information gaps.
		Quality Assurance Summary <i>Report</i> : Report on sustainable monitoring and assessment infrastructure	Stakeholder/E Party review-	iew: March 2008 xpert review: March 2008 Drafting: April 2008 Quality assurance: May 2008			

2008 Tasks	Subtask	Key Outputs	Timing	Expected Outcomes	Beneficiaries	Budget (C\$)	Future Activities
		in Mexico	Publication: J	Publication: July 2008			
	5.2 Grey Literature Synthesis report	A comprehensive report will summarize existing information about PBTS in Mexico.	January	Information currently residing in institutions, academic libraries and state archives will be assessed for information on Mexican PBTs	Mexico, CEC, stakeholders		This work forms part of the information required for the Proname exercise.
		Quality Assurance Summary <i>Report</i> : Grey Literature Synthesis report	Grey Literature Stakeholder/Expert review: March 2008				
	5.3 Proposal for a Mexican environmental monitoring and human bio- monitoring program	Refinement of a proposal for a Mexican environmental monitoring and human bio-monitoring program, to be presented to an international funding institution.	Jan–Dec	This proposal will be based on outcomes of the 2007 science experts' workshop and the 2007 policy leaders' workshop, including Mexicans, Americans and Canadians with monitoring and policy expertise.	US EPA, CDC, Semarnat, INE, Cenica, EC, HC.	1	Proposal to be submitted in 2008 and if accepted, work will continue to implement such monitoring program
	5.4 Promotion of a Mexican national monitoring and assessment program to IFIs	Promotion of Mexico's national monitoring and assessment program for funding by IFIs.	Jan–Dec	Funding to support environmental improvements that will be encountered on a long-term basis through collection of verified scientific information.	US EPA, CDC, Semarnat, INE, Cenica, EC, HC		IFI proposal to be submitted in 2008 and if accepted, work will continue to implement such a monitoring program

2008 Tasks	Subtask	Key Outputs	Timing	Expected Outcomes	Beneficiaries (Reach)	Budget (C\$)	Future Activities
	5.5 Analysis of data comparability	Collection and harmonization of data from NA index sites and monitoring programs, focusing on data from the United States and Canada Data will be collected and provided for a common "knowledge base related to PBTS contaminants" for the NA region, in a format compatible with the NA Environmental Atlas and/or use in standard Geographic Information System platforms.	Jan–Dec	Increased awareness and knowledge; environmental improvements; optimal use of resources and greater policy coherence are expected.	US EPA, CDC, Semarnat, INE, Cenica, EC, HC	\$30,000	Continued work on this project as a resource to the Environmental Atlas and SOE report of the CEC
	5.6 Biological monitoring meeting This activity was previously planned for 2007 and will occur in January 2008. It is a key component of the Proname initiative and constitutes one of the critical aspects for the proposal to international funding agencies that is currently being developed and that will allow Mexico to support the Proname initiative.	Meeting to help Mexico set priorities for investigation and action and to provide information on status and trends to be collected, synthesized and effectively delivered supporting timely, informed policies and actions.	January	Background document to support the development of Proname initiative Recommendations for North American index and satellite sites background document [Quality Assurance Summaries for these outputs are included in the SMOC project description, task 5.2.]	US EPA, CDC, Semarnat, INE, Cenica, EC, HC	\$7,530	

Objective – To assist the Parties in increasing the comparability, reliability, availability of data and assess trends and concerns related to contaminants
and stressors affecting environmental and human health in the North American environment.

2008 Tasks	Subtask	Key Outputs	Timing	Expected Outcomes	Beneficiaries (Reach)	Budget (C\$)	Future Activities	
	5.7 Proname workshop This activity was previously planned for 2007 and will occur in February 2008. It is a key component of the Proname initiative and constitutes one of the critical aspects for the proposal to international funding agencies that is currently being developed and that will allow Mexico to support the Proname initiative.	Following on the 2007 science experts workshop, North American monitoring and assessment experts will meet with Mexican policy leaders to secure support for and commitment to long-term environmental monitoring and human bio-monitoring and assessment infrastructure in Mexico; 40-50 people are expected to attend the meeting, with 10-20 receiving some financial support.	February	The workshop will result in secure commitments from Mexican leaders from multiple departments for long-term support for a national monitoring program. These outputs will be included in a proposal for a Mexican environmental monitoring and human bio- monitoring program presented to an international funding institution.	US EPA, CDC, Semarnat, INE, Cenica, EC, HC	\$32,000		
Total 2008: \$284,530								
Performance Measu	rement Indicators:			Key Partners:				
Results will be contin	Results will be continually monitored through the EM&A Standing committee.			SMOC Working Group and its Task Forces				
<ul> <li>Results from QA/QC, round-robin procedures will be indicators of direct outcomes for capacity building of analytical procedures.</li> </ul>			EM&A Standing committee					
<ul> <li>Harmonization of information collected in the three countries will be indicators of intermediate outcomes.</li> </ul>								
<ul> <li>Increased availabi indicator of interm</li> </ul>		n toxic substances in NA	will be an					