

Summary of the Project Description of “Training on risk assessment of chemicals at national level in a global context”

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I Project background

The need for input of scientific knowledge at the national level

Important factors determining human exposure to chemicals are the types of industry, agriculture, diet, and consumer patterns present in a country as well as climate and other environmental conditions including climate and types of soil and vegetation. Because these factors are different in different regions of the world, the chemical hazards and risks are also different in different countries. Whereas the hazard is a property of a chemical independent of the amount used and use pattern, the risk is a function of the actual level of exposure in comparison to effect levels. In many cases and especially in developing countries, there is no systematic assessment of which chemicals and which exposure pathways pose the highest risk to the environment and human health. The types of chemicals, the amounts used and released, the chemicals' environmental fate and their effects are highly diverse and often only poorly characterized or even completely unknown. Relevant types of chemicals for this project are industrial chemicals such as solvents, pesticides, biocides; pharmaceuticals, veterinary drugs or flame retardants, plasticizers as well as unintended by-products such as polychlorinated dibenzodioxins and dibenzofurans (PCDD/PCDF) and polycyclic aromatic hydrocarbons (PAH). Chemically, organic chemicals as well as metals such as mercury, lead, cadmium, and arsenic, are relevant.

This problem – lack of knowledge about important chemical hazards and risks – can be considered a serious obstacle to the overall objectives of SAICM, *i.e.*, “to achieve sound management of chemicals throughout their life-cycle so that, by 2020, chemicals are used and produced in ways that lead to minimization of significant adverse effects on human health and the environment”. Therefore, countries need procedures – and the corresponding knowledge and experience – that enable them to identify, in a consistent and comparable way, chemical hazards and risks that are of the highest priority.

In recent years, methods for screening chemicals for hazardous properties and for assessing risks to the environment and human health have continuously improved. Further experience has been gained in the context of national risk assessment activities. However, many of these methods and procedures are not well-known in developing countries and have not been applied under developing country conditions. Furthermore, application of these methods and interpretation of the results still requires scientific expertise. Therefore, in this project training on these methods and procedures for scientists in selected developing countries and countries with economies in transition is intended. These pilot countries are Armenia, Chile and Ghana. Based on national information from the three countries, major areas of concern will be identified and suitable methods and tools for chemical risk assessment will be selected as training materials (individually for each country). Training on

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these methods and tools for risk assessment will increase the countries' capacity for chemicals assessment. As an additional outcome of the training activities, it is intended to evaluate chemical hazards and risks in each country in a comparative manner and to prioritize chemicals and chemical-related issues. Prioritized issues will form the basis for making recommendations for the reduction of hazards and risks from chemicals. All three countries have ratified the Stockholm Convention on Persistent Organic Pollutants, the Basel Convention on Transboundary Movement of Hazardous Waste, and the Rotterdam Convention on Prior Informed Consent. The project is in line with their national priorities for chemicals management.

For the present project, we propose a science-based approach involving scientists from the participating developing countries/CEITs and scientists and technical experts from international organizations and from the global network of the International Panel on Chemical Pollution, IPCP. In addition to the training on risk assessment methods in the participating countries, application of the various methods and tools under the different environmental, technical and societal conditions of the three countries will provide valuable insights also for the international experts and developers of methods

Collaboration with international organizations will include the following aspects:

- Collaboration with WHO is intended to provide expert knowledge on human health assessment for the project. Information on training materials and methods for human health risk assessment will be sought from WHO, which has offered to assist in this regard. In particular, the ongoing work on a Human Health Risk Assessment Toolkit conducted by WHO (www.who.int/ipcs/methods/harmonization/areas/ra_toolkit/en/index.html), provides an opportunity to include relevant methods and tools in the project that can be applied in combination with the other training materials selected for each country.
- Other collaborations will include FAO with its Coordinated Research Project (CRP) "Integrated analytical approaches to assess indicators of the effectiveness of pesticide management practices at a catchment scale", and OECD with its guidelines on testing and assessing chemicals and ecosystems.
- Finally, existing links through SETAC membership of principal scientists will provide further support.

For mutual benefits, the project will be strengthened by including scientists from other environment-related areas including educational activities worldwide. Complementary to the various links to international organizations and scientists, a second pillar of the project will be close cooperation with the authorities in each country.

II Project responsibility and management

The International Panel on Chemical Pollution (IPCP), based in Zürich, Switzerland, and linked to the Swiss Federal Institute of Technology, Zürich (ETH Zürich) through Dr. Martin Scheringer, will be the executing agency of the proposed project. The IPCP will provide administrative and technical supervision in the implementation of

the project and coordinate with the national institutions in the three countries. In addition, the project is fully backed up by Stockholm University (Dr. Åke Bergman) and ETH Zürich (Group of Dr. K. Hungerbühler/M. Scheringer) for all administrative or technical requirements to allow the project to proceed without any delays.

For the implementation of the project, IPCP will work through its network of scientists around the world and liaise with the Secretariats of the MEAs such as Stockholm Convention, Basel Convention, and Rotterdam Convention and other international institutions including WHO, UNITAR, UNFCCC. IPCP aims to support the process to reach the WSSD 2020 goals for sound management of chemicals worldwide.

In the proposed project, the IPCP will:

- Bring in its experts at the global level to actively provide input for the project.
- Contribute with key scientific expertise related to risk assessment of chemicals.
- Organize and host the two global workshops, namely at the onset and at the end of project.
- Contribute through its own and invited experts, present and active in all continents of the world, and their specific local knowledge to the country work and assess the results and conclusions of this project.
- Enable and guarantee an integration of the results from the project.
- Enable dissemination of the project's results to both the scientific community, international and national authorities and to national governments.

The three individual countries will undertake the following activities:

1. Assign the national project coordinator, identify and contract the principal scientist to lead this project (see Terms of Reference for project personnel in the annex to Form II (Budget Tables) of this application)
2. Identify relevant actors at the national level to collaborate in the project (national project team)
3. Provide the necessary infrastructure to undertake the work at the national level
4. Provide input to the identification and selection of risk assessment methods and tools required to address the chemical risks relevant at the national level
5. Participate in the global kick-off and final synthesis workshops
6. Organize a national training workshop
7. Apply methods and tools for risk assessment selected in the first phase of the project at the national level
8. Provide information on specific national conditions of relevance to the work
9. Write national report including conclusions and recommendations on selected priority issues and co-author the final report
10. Contribute to the writing of the final report summarizing the activities undertaken including experiences from the training on the methods and tools for risk assessment applied in the project.

III Project description

The project activities and major tasks include:

1. Identify the responsible scientists to lead the national project teams with the number of scientists/experts found appropriate in each country;
2. Identify specific chemically related issues of concern for each country;
3. Screen and identify the most important needs for training on risk assessment methods related to the issues identified by each country;
4. Selection of training materials and experienced trainers in the identified fields;
5. Organize a kick-off workshop to outline the training process based on the input from the countries and trainers;
6. Hold national workshops to initialize training activities at the national level and under the developing country conditions;
7. Training and application of methods for risk assessment to the issues of concern at the national level;
8. Present conclusions and recommendations on the issues of concern from each country;
9. Hold synthesis workshop with participation of all participating countries, trainers and other interested parties, including international organizations to share experiences from the project;
10. Prepare final global report and obtain country endorsement.

The following approaches will be taken to fulfill the above:

1. Identify the responsible scientists to lead the national project teams with the number of scientists/experts found appropriate in each country;
 - Appointment of the national principal scientist
 - Identification of scientists and scientific institutions contributing to the project at national level (national scientific network)
 - Sub-contract relevant personnel
2. Identify specific chemically related issues of concern for each country;
 - use country-specific information provided in section II above
 - select specific areas of concern requiring highest level of attention and providing variability in terms of methodological needs
3. Screen and identify the most important needs for training on risk assessment methods related to the issues identified by each country
 - related to areas of concern selected in task 2 above, select suitable methods and tools for hazard, exposure and effect assessment.
 - summarize knowledge on selected methods and tools that is available in the country
 - Identify knowledge gaps and define goals for training
4. Selection of training materials and experienced trainers in the identified fields
 - Identify specific methods, models, databases and documents needed to accomplish the goals for training

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- Identify scientists and technical experts in international organizations and academic institutions experienced in the methods, models etc. selected (“trainers”)
5. Organize a kick-off workshop to outline the training process based on the input from national scientists of the countries and trainers
 - prepare workshop (IPCP) to be held at ETH Zürich for principal scientists from the three countries and trainers
 - provide background information on all components of the training material, demonstrate examples for application of the components of the training material
 - outline workplans for training activities in all three countries
 6. Hold national workshops to initialize training activities at the national level and under the developing country conditions
 - Organize national training workshops (approx. 10 participants per country) to familiarize national scientists with the workplan of the training activities, establish contact of national scientists to trainers
 - Assign tasks on identified issues/local situations to individual scientists/institutions
 - Establish workplan and timetable for delivery
 7. Conduct training and apply of methods and tools for risk assessment to the issues of concern at the national level
 - In each country, apply training materials to cases selected in task 2 and with respect to the needs identified in task 3;
 - Discuss results with trainers, analyze and interpret results, discuss uncertainties
 8. Present conclusions and recommendations on the issues of concern from each country
 - Summarize experiences from training activities, identify remaining needs
 - Summarize results from cases investigated in each country (hazard, exposure and effect assessments, remaining uncertainties)
 - Prepare feedback to trainers
 9. Hold synthesis workshop with participation of all countries, trainers and other interested parties, including international organizations to share experiences from the project;
 - Organization of synthesis workshop at an IPCP institution (scheduled for Stockholm University) to evaluate results from training
 - Discuss results among countries and with trainers and agree on content of final report (results, recommendations)
 - Make results available for international institutions working in similar directions.
 10. Prepare final global report and obtain country endorsement.
 - Principal national scientists together with IPCP to author final report
 - Obtain feedback from trainers on final report
 - Obtain endorsement of final report from governments

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- Submit final report to SAICM Secretariat

Expected outcomes and outputs

The following results are expected to be achieved in the project

1. Improved understanding and knowledge of chemical-related risks in the participating countries
2. National scientists trained and capable of applying risk assessment methods and tools to identify priority chemicals at national or local levels;
3. Establishment of a network of experts and scientists capable of applying internationally accepted and up-to-date methods and tools for identification, evaluation and prioritization of chemicals and chemical-related issues;
4. List of priority chemicals and chemical uses as a starting point for application of measures for reduction of emissions and exposure;
5. At country level, improved cooperation between academia and government sectors in the area of priority chemicals;
6. At international level, recognition of experiences from developing countries and CEITs;
7. Active participation of developing countries and CEITs in the prioritization of chemical-related issues and active contributors to MEAs, *i.e.*, proposing new chemicals for Stockholm or Rotterdam Conventions.
8. Information on chemical-related hazards and risks delivered to target beneficiaries such as national authorities responsible for chemicals management, scientists in the case study countries, and the population handling chemicals and/or experiencing the highest exposure to chemicals.
9. National authorities capable of applying results for capacity building, further development of action plans, provision of guidance and education to other institutions and the general public.
10. Improved knowledge available for international organizations operating with issues related to the implementation of the SAICM goal “to achieve sound management of chemicals throughout their life-cycle so that, by 2020, chemicals are used and produced in ways that lead to minimization of significant adverse effects on human health and the environment”.

IV Project work plan

Duration: 18 months. The project will be implemented from early 2010 until second half of 2011. The time plan is shown below.

Activity	Month																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Identification of responsible scientists (countries; IPCP)	■	■																
2. Identify issues of concern at country level (countries; IPCP)		■	■															
3. Identify needs for training (IPCP; countries)		■	■	■														
4. Selection of training materials (IPCP; countries)			■	■														
5. Kick-off workshop for training (IPCP, Zürich)					■													
6. National workshop to start activities at national level (national principal scientists)						■	■	■	■	■	■	■	■	■	■	■	■	■
7. Training and application of methods and tools for risk assessment (national scientists; trainers)						■	■	■	■	■	■	■	■	■	■	■	■	■
8. Conclusions and recommendations from countries (countries; IPCP)																■	■	■
9. Synthesis workshop (IPCP, Stockholm)																	■	■
10. Preparation and endorsement of final report (IPCP; national principal scientists; trainers; countries)																■	■	■