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INTERGOVERNMENTAL NEGOTIATING COMMITTEE FOR AN
INTERNATIONAL LEGALLY BINDING INSTRUMENT
FOR IMPLEMENTING INTERNATIONAL ACTION ON
CERTAIN PERSISTENT ORGANIC POLLUTANTS

Third meeting

Geneva, 6-11 September 1999

Item 2 (c) of the provisional agenda*

REPORT BY THE SECRETARIAT ON INTER-SESSIONAL WORK REQUESTED
BY THE COMMITTEE

Assessing dioxin and furan emissions in Thailand

Note by the secretariat

1. The note by the secretariat on possible capacity-building activities and their associated costs (UNEP/POPS/INC.3/INF/8) includes discussion of the development of an inventory of persistent organic pollutants (POPs). The report contained in the annex to the present note provides more detailed information on the actual costs of preparing an inventory of dioxins and furans in Thailand.

2. The secretariat has the honour to transmit to the Intergovernmental Negotiating Committee the attached information provided jointly by the Governments of Thailand and Germany. This information is circulated as submitted jointly by those Governments and has not been formally edited.

* UNEP/POPS/INC.3/1.

Annex

Assessing Dioxin and Furan Emissions in Thailand

Background

The developments of Science and Technology lead to more and more widespread uses of chemicals in agriculture, industry, household and other sectors. As other United Nations member countries, Thailand has recognized the problem of chemical hazards as a high priority, particularly the importance of the chemical management under the Chapter 19, Agenda 21. Special attention has been taken on the decisions 18/12 and 19/13 A of the UNEP Governing Council on the establishment of legally binding instrument for the Application of the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (or the Rotterdam Convention) as well as the decisions 18/32 and 19/13C of the UNEP Governing Council on the establishment of legally binding instrument for implementing international action on POPs. Following the Second Session of the Intergovernmental Forum on Chemical Safety (IFCS), Ottawa in 1997 Thailand has actively taken actions to reduce or eliminate impacts on human health and the environment related to productions and uses of Persistent Organic Pollutants (POPs) chemicals especially those 12 specified POPs as aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, toxaphene, PCBs, dioxins and furans.

As part of the efforts to address the problems of Persistent Organic Pollutants (POPs) in the country the Royal Thai Government decided to establish a national inventory of sources of dioxin and furan emissions and a monitoring program for polychlorinated dibenzodioxins and dibenzofurans (PCDD/PCDF) in Thailand.

Methods

Starting point of the project is the experience of Germany based on intensive dioxin/furan measurement programs. In addition, information from other countries, which undertook dioxin emission estimates will be incorporated. All these data are combined to a comprehensive "check-list" of dioxin and furan emission sources and used for the establishment of emission factors for each source. Multiplication of the specific emission factor and the corresponding rate of activity will give the annual emissions per source. The addition of all releases from identified sources allows to establish a national dioxin and furan emission inventory for a given year.

In a second step, measurements of dioxin emissions from selected sources will be performed hereby applying standards for dioxin measurements as established in the European Union (and in Germany). Sources that are either typical for Thailand, e.g. crematoriums, or where it is assumed that German/European emissions factor may not be appropriate for the situation in Thailand, e.g. hospital waste incinerator, secondary lead plant, will be chosen to add country-specific information to the inventory.

Project Description

In order to facilitate this project, Thailand has set up a steering committee. The members represent several relevant agencies including the Pollution Control Department (PCD), Department of Industrial Works (DIW), Department of Agriculture (DOA), Department of Health (DOH), Department of Science Service (DSS), Bangkok Metropolitan Administration (BMA), the Industrial Estate Authority of Thailand (IEAT) and the Federation of Thai Industries (FTI).

Assisted by a German consultant, experts from PCD in close cooperation with DIW identify the relevant sources of dioxins and furans in their country using the checklist and their statistical data or estimates on industrial activities. With the above mentioned procedure, the annual dioxin and furan releases into air will be calculated. The result will allow to establish a relative ranking of the sources based on emissions per year. These theoretical findings will be validated by selected representative measurements of emission concentrations in Thailand.

The inventory will be the basis for risk reduction measures in Thailand. It will allow to identify the major activities contributing to the pollution by dioxins/furans and will give an indication which activities can be managed with the least resources and the highest efficiency.

Activities

Assistance activities include:

- Set-up of an inventory with the assistance of an expert from Germany;
- Training of staff members to identify potential sources of dioxin and furan emissions;
- Holding an awareness raising and planning workshop in Bangkok with stakeholders involved;
- Validating the theoretical findings of the inventory by selected representative measurements of emission concentrations in accordance to international standards with the assistance of the chemicals industry providing sampling and analytical capacity;
- Advice to establish a monitoring program according to the identified needs;
- Expert support in the development and planning of a strategy to reduce identified sources of dioxin and furan emission.

Regional and International Linkage

The Thailand-German Dioxin Project is embedded into the international activities for a legally binding instrument on POPs presently negotiated under UNEP's mandate. As an immediate response to country demands to help establishing POPs inventories,

UNEP Chemicals has published a report on dioxin and furan inventories, which gives a snapshot on 18 inventories known so far ¹.

In order to assist countries to estimate emissions of dioxins and furans, UNEP Chemicals is preparing guidance documents for identification and quantification of releases of these compounds. A toolkit will be available early next year. Within its capacity building activities, UNEP Chemicals will organize 4-6 regional training and management workshops on dioxins and furans (some of these jointly with PCB issues) in 2000. The toolkit for source identification and quantification will be made available to all countries together with a compendium to reduce releases of dioxins and furans. The experiences and results obtained from the Thailand-German Dioxin Project will serve as invaluable input for these activities and as a model for further inventories to be established in developing countries. Such consolidated and harmonized methods will lead to comparable results from different countries and facilitate the establishment of a global inventory.

Activities in Progress

The following table gives an overview about activities undertaken so far and activities agreed upon:

Activity	Location	Date	Investment
Establishment of checklist (1 expert, 2 weeks)	Thailand	December 1998	80 h
Site visits (7 plants) (2 experts, 6 days)	Thailand	April 1999	96 h
Workshop on dioxins and furans (awareness raising and priority setting) (3 experts, 2 days)	Thailand	May 1999	48 h
Report writing, sampling campaign planning, sampling protocol writing, etc. (5 days)	Germany	Summer 1999	40 h
Sampling campaign (5 plants) (1 expert 35 days + 1 expert 15 days)	Thailand	Fall 1999	400 h
Establishment of the dioxin inventory (2 experts, 2 weeks)	Germany	Fall 1999	160 h
Total Time			824 h
Analysis of 51 samples	Europe	Fall 1999	40,000 US\$
Travel experts (5 times, 1 sampling personnel) + equipment			25,000 US\$
Total Money			65,000 US\$
Data collection (activities, identification of potential sources according to checklist), infrastructure for sampling campaign	Thailand	December 1998 - November 1999	12 months

¹ Dioxin and Furan Inventories – National and Regional Emissions of PCDD/PCDF. UNEP Chemicals, Geneva, May 1999

The establishment of the checklist, the awareness raising workshop, the site visits and sampling campaign planning is financially supported by the German Technical Cooperation (GTZ). Sampling and analysis of samples is provided by Euro Chlor (Federation representing the European Chlor/Alkali Industry) and UNEP Chemicals.

20 August 1999
