

**TOWARDS GLOBAL**



*INTERNATIONAL*

*EXPERTS*

*MEETING*

---

*PERSISTENT*

*ORGANIC*

*POLLUTANTS*

**ACTION**

**VANCOUVER  
CANADA**

**JUNE 4 - 8, 1995**

# MEETING STATEMENT

## **BACKGROUND INFORMATION**

---

At the second Substantive Session of the United Nations Commission on Sustainable Development, held in May 1994, the Canadian government offered to convene a meeting of international experts to explore the dimensions of the POPs problem and to promote opportunities for global action.

In order to develop a broad-based, truly global perspective on POPs, Canada joined with the Republic of the Philippines, through the Philippine Council for Sustainable Development as equal partners to co-sponsor an experts meeting.

A Joint Canada-Philippines Planning Committee was established to organize all aspects of the meeting, including: the establishment of the Meeting Objectives; the production of a comprehensive Meeting Background Report (MBR) (to provide a focus for discussion at the meeting); and the selection of the participants.

The MBR includes comprehensive information on: human and environmental health concerns related to POPs; social, economic and political considerations; existing legal and institutional arrangements for POPs management; elements for consideration in developing a global action plan; profiles on eight demonstration POPs; and several case studies.

Participation was by invitation only and included experts from international agencies, non-governmental organizations, academia, industry and government. The professional qualifications of the participants were diverse and included the natural sciences, social sciences, economics, law, as well as policy development. Participants were representative of the various regions of the world where persistent organic pollutants are of concern.

In total, more than 100 individuals from over 40 countries attended the meeting with a significant representation from developing countries. A complete list of participants can be found in Annex One.

## **MEETING OBJECTIVES**

---

**THE OBJECTIVES OF THE MEETING WERE:**

- 1. TO HIGHLIGHT ANY SIGNIFICANT CONCERNS POSED TO HUMAN HEALTH AND THE ENVIRONMENT BY CERTAIN PERSISTENT ORGANIC POLLUTANTS;**
- 2. TO IDENTIFY AND ANALYZE THE TECHNICAL, INSTITUTIONAL, SOCIAL, ECONOMIC, FINANCIAL AND MANAGEMENT ISSUES INHERENT TO CERTAIN PERSISTENT ORGANIC POLLUTANTS; AND**
- 3. TO IDENTIFY KEY ELEMENTS INVOLVED IN DEVELOPING EFFECTIVE GLOBAL MANAGEMENT STRATEGIES FOR CERTAIN PERSISTENT ORGANIC POLLUTANTS.**

## **DEFINITION OF POPS**

---

**For the purposes of this meeting, POPs are organic compounds that:**

- resist physical, biological and chemical degradation;
- are characterized by low water solubility and high lipid solubility, leading to their bioaccumulation and biomagnification;
- are typically semi-volatile, enabling them to move long distances through the atmosphere before deposition occurs; and
- are substances for which scientific assessments have indicated concerns relating to their hazards or risks to human health or the environment.

## MEETING STATEMENT

---

RECOGNIZING THE COMPLEXITY OF THE SUBJECT MATTER, AND THE NEED TO INCORPORATE MULTI-SECTORAL AND MULTI-DISCIPLINARY APPROACHES TO PROBLEMS AND SOLUTIONS; AND IN CONSIDERATION OF THE AVAILABLE INFORMATION ON THE CHEMICAL AND PHYSICAL CHARACTERISTICS OF POPs, THEIR SOURCES AND EMISSIONS, THEIR PROPENSITY TO UNDERGO LONG-RANGE TRANSPORT, THEIR DISTRIBUTION BETWEEN MEDIA, AND THEIR BIOLOGICAL EFFECTS; AND NOTING THAT A NUMBER OF INTERNATIONAL AGREEMENTS ARE BASED ON WIDELY RECOGNIZED LISTS OF SUBSTANCES WHICH INCLUDE MANY POPs THAT ARE COMMON TO TWO OR MORE OF THESE LISTS (SEE TABLE 2); AND GIVEN THE MEETING DEFINITION OF POPs —

*With Respect To Objective One: TO HIGHLIGHT ANY SIGNIFICANT CONCERNS POSED TO HUMAN HEALTH AND THE ENVIRONMENT BY CERTAIN PERSISTENT ORGANIC POLLUTANTS:*

### 1.1 The participants conclude that:

- Persistent organic pollutants (POPs) have long half-lives in the environment and undergo slow physical, chemical and biological degradation.
- The vapor pressure of POPs over the normal range of environmental temperatures enables them to cycle through ecosystems and travel great distances, on a local to a global scale, with the atmosphere and ocean currents.
- Many POPs are used in, or arise from industry, agriculture and disease vector control. POPs are also created as unintentional by-products.
- Certain POPs are currently viewed as cost-effective in plant protection, disease vector control and a variety of industrial applications.

- POPs are released to the environment deliberately, unintentionally and accidentally. Emissions can be from diffuse sources as well as point sources, and can be associated with manufacturing processes, product use and application, agricultural pest management, disease vector control, waste disposal, leaks and spills, and combustion of fuels and wastes.
- POPs are lipophilic and persistent. Therefore, they can bioaccumulate in the tissues of living organisms, biomagnify through the food chain and reach significant concentrations in upper trophic level species, including humans. Thus, sustained environmental levels of POPs, even when at or near detection limits in the abiotic environment can build to high concentrations in biota and recycle within the ecosystem.
- Once released into the wider environment, POPs cannot be retrieved.
- POPs have been measured in all compartments of the ecosystem (including air, precipitation, surface and ground water, soils, sediments, biota) and the indoor environment. They have been detected throughout the world, even in remote areas such as the Antarctic and the Arctic, where the relatively high levels of a number of organohalogens reported in fish, marine mammals and humans, can be attributed primarily to long-range atmospheric transport.
- Humans can be exposed to POPs through diet, occupation, accidents and the indoor environment.
- Controlled laboratory studies have demonstrated that a wide range of POPs induce endocrine effects, immune system dysfunction, reproductive abnormalities and developmental deficits, including neurobehavioural impairment in a variety of mammalian and non-mammalian species. Some POPs can induce or promote cancers and tumours in a variety of mammalian and non-mammalian species.
- Most POPs are of anthropogenic origin.

### 1.2 The participants generally agree that current research and information predicts and indicates that:

- Due to predominant global atmospheric circulation patterns and the propensity of POPs for successive revolatilization at different ambient temperatures, accumulation of POPs in the ecosystem preferentially occurs at cooler latitudes, regardless of the location of the original source.
- Stockpiles of unwanted POPs exist in the world and represent significant cause for concern, especially for some where there are no practical plans for disposal.



- Greater incidence of immune system dysfunction, reproductive deficits, developmental abnormalities, neurobehavioural impairment, and cancer and tumour induction or promotion have been recorded in humans as a result of chronic exposure to certain POPs.
- For some POPs, occupational and accidental exposure is of concern for both acute and chronic worker exposure. The risk is greatest in developing countries where the use of POPs in tropical agriculture has resulted in a large number of deaths and injuries. In addition to other exposure routes, worker exposure to POPs during waste management is a significant source of occupational risk in many countries.
- Some POPs interfere with hormone systems through a variety of mechanisms. There are parallels between research on effects observed in laboratory animals and abnormalities in wildlife and humans. There are strong associations between abnormalities in wildlife and elevated environmental levels of certain POPs. Some of the kinds of effects which have been observed in wildlife or induced in laboratory animals have been observed in humans chronically exposed to POPs.
- In recent decades, many wildlife populations have begun to show reproductive abnormalities, immune dysfunction, neurobehavioural impairment, and elevated incidence of cancers and tumours, which are consistent with the effects predicted from controlled laboratory animal exposures to POPs.
- Current concentrations of some POPs in fish and wildlife used as food by humans exceed health guidelines or standards established by national or international agencies.
- The developing fetus and neonate are particularly vulnerable to POPs exposure, with transplacental and lactational transfer of maternal burdens at critical periods of development eliciting effects on offspring at levels which have no effects on the adult.
- The use of POPs for human disease vector control is declining and use rates are far less than in agriculture. Due to relative costs and availability, DDT and gamma-HCH continue to be used in specific cases (i. e. indoor spraying for disease vector control).

### **1.3 The participants generally agree that remaining uncertainties flow from the:**

- Inability to distinguish environmental effects attributable to POPs from effects attributable to other environmental stresses.
- Inability to quantify intercompartmental movement of POPs and revolatilization from various media, combined

with inadequacy in the quality of and access to emissions inventories. These factors limit the refinement and resolution of models that estimate source, transport and deposition relationships for POPs.

- Limited information on effects of low doses and mixtures of POPs on human exposure and impacts to humans, and the extrapolation of animal data to humans.
- Difficulties in quantifying the relative levels of controlled process emissions, unauthorized releases and natural releases.
- Lack of characterization of chemical processes that generate POPs from non-hazardous materials.
- Limited information on the distribution and effects of POPs in many areas (e. g. tropical ecosystems).

### **1.4 It is the judgment of the participants that:**

- There is enough scientific information on the adverse human health and environmental impacts of POPs to warrant coherent action at the national, regional and international level. This will include bans, phase-outs and provisional severe restrictions for certain POPs.
- The evidence of human health and environmental impacts warrants the application of the Precautionary Approach, as described in the Rio Declaration; although in the view of some participants this should be set in the context of overall risk management.
- Effective management strategies and solutions require cooperative action by all stakeholders and must include an appropriate mix of voluntary, market-based and regulatory (command-and-control) mechanisms.

### **With Respect To Objective Two: *TO IDENTIFY AND ANALYZE THE TECHNICAL, INSTITUTIONAL, SOCIAL, ECONOMIC, FINANCIAL AND MANAGEMENT ISSUES INHERENT TO CERTAIN PERSISTENT ORGANIC POLLUTANTS:***

#### **The participants agree to the following:**

### **2.1 Regulatory Arrangements: The laws and their implementation**

- Domestic regulatory arrangements alone are not effective in managing the adverse global impacts of POPs.
- Domestic regulatory arrangements, in many countries, inadequately manage POPs in those countries.
- Financial and technical resource constraints, inadequate training and lack of information limit regulatory effectiveness. Building effective regulatory capabilities

will take time and committed investment in human and financial resources.

- Current international laws and agreements do not provide for effective global POPs management. A number of regional and sub-regional agreements, some of which are legally binding, have made good progress toward POPs management strategies, but are not designed to address the problem on a global scale.
- The 18th session of the UNEP Governing Council has established a process aiming at decisions for possible international action by 1997.

## **2.2 Social, economic, political and management considerations related to POPs**

- While there are benefits (real and perceived) resulting from activities involving the generation, use and release of certain POPs, there are also adverse social and economic implications resulting from their biological effects.
- While many POPs are inexpensive, the application of full-cost accounting principles (including disposal, environmental impacts, possible chronic health effects and non-target effects) often determines that POPs are as costly or even more costly than the alternatives.
- The underlying social, economic and political factors that contribute to the demand for the production and use of POPs should be recognized and addressed.
- No one component of society is exclusively responsible for the problems associated with POPs, nor is any one component of society exclusively responsible for finding solutions.
- The presence of POPs, or the fear of their presence, may lead to significant social and cultural changes among people who live as an integral part of the ecosystem and depend upon its resources for their food, well-being, and sense of identity.
- The presence of POP residues in plant, animal and marine products or the suspicion of the presence of residues has led to the withdrawal of products from the market or a significant loss of sales.
- Since a reduction in environmental burdens of many POPs will demand fundamental and structural changes in industrial and agricultural practices, changes will also be needed in consumer expectations and in financial arrangements for development. There may also be implications for trade and trade practices.
- While market-oriented instruments may generally be more desirable and effective, there should be a greater willingness both domestically and internationally to

adopt command-and-control measures for POPs.

- The policies and operating criteria of development agencies have significant ramifications for POPs management and should therefore be subject to greater scrutiny in that context.

## **2.3 Governmental and non-governmental organizations significantly influence the management of POPs at the local, national, regional and international levels.**

- All must lobby responsibly and participate fully, fairly and cooperatively in identifying problems, and in finding and implementing solutions.
- All should promote awareness of human health and environmental concerns.

### **2.3.1 Some roles of Industry include the need to:**

- comply with legislation
- disseminate information to users
- find alternatives to POPs
- provide safer alternative technologies
- review production processes and reduce the use of POPs wherever possible
- proactively address POPs issues equitably in all countries, including the use of voluntary programs such as responsible care and product stewardship policies on a life-cycle basis. Multinationals must set an example for environmental performance, particularly in developing countries.

### **2.3.2 Some roles of Consumers include the need to:**

- demand product information
- inform themselves
- participate in local environmental and health issues in the community.

### **2.3.3 Some roles of User Groups include the need to:**

- make informed use and purchasing decisions
- use alternatives
- practice safe handling, including transportation, use and storage.

*Note: In countries where the educational and social capabilities of users would not allow them to assume responsibility for safe use and handling of hazardous substances, only the least hazardous chemicals may be allowed for general use.*



**2.3.4 Some roles of Public Advocacy Groups include the need to:**

- give profile to the issues
- apply political pressure
- monitor consequences
- stimulate, and participate and cooperate in processes relating to the management and reduction of POPs
- disseminate information
- promote the use of alternatives.

**2.3.5 Some roles of the Scientific Community include the need to:**

- inform all groups fairly and fully
- participate in policy discussions, including those of an interdisciplinary nature
- actively conduct research on alternatives.

**2.3.6 Some roles of Governments include the need to:**

- promote the development and use of alternatives in the context of pollution prevention
- contribute to the creation of international agreements for actions on POPs
- establish policies and programs for the safe management of chemicals, including national and regional policies and programs addressing POPs
- set environmental standards and emission targets, including the necessary infrastructures and mechanisms for their effective implementation and enforcement
- develop and update POPs inventories
- monitor levels and effects
- enforce their laws on POPs
- control the transfer of technology concerning the production and use of POPs.

**2.3.7 Some roles of International Institutions include the need to:**

- promote and facilitate coordinated cooperation and action on POPs
- provide funding for research and promotion of alternatives and create an information clearing house
- develop an information database for disseminating POPs information worldwide
- harmonize international guidelines and standards
- provide safeguards, in terms of facilities, for the distribution and disposal of POPs
- coordinate national and regional activities in the development of a globally accepted management strategy for POPs

- promote research and, where possible, its funding for studies related to alternatives to POPs.

**With Respect To Objective Three: *TO IDENTIFY KEY ELEMENTS INVOLVED IN DEVELOPING EFFECTIVE GLOBAL MANAGEMENT STRATEGIES FOR CERTAIN PERSISTENT ORGANIC POLLUTANTS:***

**3.0 The participants agree to the following:**

The participants identified criteria to determine and evaluate practical candidate strategies and mechanisms for effective global action. The strategies and mechanisms should be:

- achievable with available resources
- equitable
- science-based (to include traditional knowledge)
- adaptive
- pragmatic
- relevant to local conditions
- innovative
- widely applicable
- able to be coordinated
- institutionally sustainable
- able to be monitored
- enforceable
- transparent

It must be recognized as an over-arching principle that solving the problem of POPs in the global environment requires action. In the view of some, this requires ceasing production of these substances except for certain public health uses. Others propose pursuing virtual elimination from the environment through the application of a range of management options.

It is important to ensure the opportunity for public participation at all levels of decision-making.

The scope of proposed strategies and actions must be sufficiently comprehensive to encompass, at a minimum, those substances that meet internationally agreed criteria defining persistent organic substances. This includes persistent organic substances now known to exist as well as those which might, in future, occur as products of commerce, as process contaminants or by-products, or as degradation products. An additional urgent and important need, to be addressed initially through a parallel and

compatible process, is to jointly identify those existing POPs that are known or suspected, on the basis of scientific evidence, to pose a significant risk to ecosystems, biodiversity or human health and, consistent with the UNCED Precautionary Principle, to agree expeditiously on the nature of the actions required to reduce the known and suspected risks posed by these specific POPs.

It must be recognized that where it is not possible to completely quantify risk due to the lack of suitable toxicological or other end points, risk management decisions should be based on qualitative understanding of the risk. There is a need to identify and develop suitable toxicological and other end points against which risks can actually be gauged.

Final responsibility for regulatory decisions on POPs must remain with sovereign states, recognizing that the phasing-out of POPs has some resource implications that must be addressed. Resources will be required for such initiatives as the development of alternatives, strengthening infrastructures, extension services, research and information exchange, with support and cooperation from regional and international donors. In support of such initiatives, national governments must focus on the objectives to phase-out POPs and reallocate existing internal priorities and resources to demonstrate their commitment.

### **3.1 Domestic Strategies and Mechanisms**

#### **3.1.1 Goal**

- To achieve effective and comprehensive management of POPs at the national level which is suited to national conditions and needs, and which complies with international standards and agreements in a sustained manner.

#### **3.1.2 Means**

- In each country expediently develop a long term national policy on toxic chemicals that is integrated, comprehensive and flexible. The policies should guide the strengthening of existing and developing regulatory infrastructures. The policies should be founded upon international and national databases and inventories. Their analysis will aid in the identification of priorities for action and the monitoring of performance.
- Encourage nations to develop and strengthen registration and re-registration processes which will specifically: address persistence, bioaccumulation, long range transport and adverse environmental and health effects;

embrace the Precautionary Principle and Pollution Prevention; and prevent the introduction of POPs.

- Establish a re-evaluation mechanism for the existing registrations of POPs. Reassess, using an integrated approach, the generation, use and disposal of POPs in the light of cradle-to-grave risk assessment and available alternatives.
- Establish provisions for implementing a range of management options which would include bans, phase-outs, provisional severe restrictions, release reductions, strict enforcement mechanisms and other such options.
- Reinforce the development, assessment and promotion of alternatives and provide for incentives for their use, and disincentives for the production of POPs (e. g. taxes).

#### **3.1.3 Essentials**

- Develop the appropriate human resource, technical and scientific infrastructure, and technical and legal means for enforcement.
- Enact laws that ensure human rights and ecological security to protect and assist victims of POPs.
- The only POPs that should presently be considered as having a role in human disease vector control are DDT and HCH. Where significant levels of vector resistance to these compounds occur, the use of these POPs should be eliminated.
- Ban the use of POPs in agriculture to minimize disease vector resistance, reduce global environmental contamination and reduce human health hazards.
- Restrict the use of DDT and HCH to selected public health applications until alternatives exist. The use of DDT and HCH for disease vector control requires strong enforcement mechanisms at the field level to prevent their illegal use in the agriculture sector.
- As cost-effective and safe alternatives become available, countries should within a risk assessment context, reassess the continued use of DDT and HCH, which ideally will lead to the elimination of their use. In certain countries, DDT and HCH are no longer used for disease vector control.
- Countries should make better use of information available from international agencies (e. g. WHO, IPCS, IRPTC) on adverse health and environmental effects.
- NGOs should lobby for legislative change, and support effective enforcement and dissemination of information.
- Make provision for worker, consumer and community right-to-know concerning chemicals and wastes. It should be the duty of the supplier/manufacturer to provide information on, and to communicate the chemical identity and the health and environmental hazards arising from



the use, storage and disposal of POPs. This duty includes information on the production of by-products and emissions.

## **3.2 International Strategies and Mechanisms**

### **3.2.1 Goals**

- Virtual elimination from the environment of POPs that meet scientifically-based persistence, bioaccumulation and toxicity criteria that are agreed to internationally. This is without prejudice to actions individual countries may take.
- Eliminate risks posed by trade and transport of POPs.

### **3.2.2 Means**

- Implement a range of management options that includes bans, phase-outs, provisional severe restrictions, release reductions and others. Choose management options through, inter alia, risk assessment, risk management procedures, careful application of informed scientific judgment, and with due regard to the Precautionary Principle (as described in Agenda 21).
- Use existing international and regional agreements and agencies to establish regional environmental quality standards and control programs, and to cooperate on the management of POPs.
- Monitor POPs to assess the achievement of regional environmental quality standards.
- Use existing international initiatives relevant to information exchange and movement in international trade to encourage national governments to make appropriate decisions on the management of POPs. The PIC procedure administered by FAO and UNEP provides a mechanism to facilitate the exchange of information on POPs among participating countries. It promotes a shared responsibility between importing and exporting countries concerning the movement of POPs in national and international trade.
- There is a need for an international convention on POPs. In addition, there should be support for proposed international and regional agreements (e. g. the UNEP 1995 decision on POPs; and under the auspices of UN ECE LRTAP) to effectively eliminate the production of POPs. Note that certain POPs of concern to human health and the environment are not included among the substances presently being considered for early action under these initiatives.
- Existing lists of POPs developed in international fora such as the UNEP 1995 decision on POPs, and others, as relevant, should be used as resource documents in

establishing a list of POPs. National lists where POPs assessments have been completed should also be used.

### **3.2.3 Essentials**

- The completion of risk assessments must not be allowed to become a delaying tactic; rely on the application of the UNCED Precautionary Principle to prevent endless delays.
- Substance selection is a science-based activity and would likely require a consensus process involving experts from a range of nations similar to that used for the Montreal Protocol.
- Require effective labelling of POPs chemicals and products in international trade to provide accurate chemical names and consistent hazard communication so that all cradle-to-grave information is available to all handlers, users and affected communities.
- Once substance selection has been done, use life-cycle analysis to determine and select risk management measures which could range from education to bans and phase-outs.
- Obtaining agreement on risk management measures requires analysis of technical, social and economic factors and may require a separate group of experts to discuss and decide on this critical issue. Regulatory decisions, however, will still remain the prerogative of national authorities.
- The UNEP recommendation for mandatory PIC arrangements is strongly supported to help eliminate illegal trade in POPs.
- Noting the recent decision of the UNEP General Council on the international control of POPs, the IOMC should be asked to begin immediately to develop general strategies for the management of POPs which can be implemented domestically in order to limit their release to the environment. The Executive Body of the LRTAP Convention is encouraged to initiate negotiations towards a protocol on POPs. It is noted that the initial substances being considered under this process do not include all POPs of concern to human health and the environment.
- Multinationals should be held liable, in the country where their international headquarters are located, for illegal/unethical practices in other countries.
- Government, industry and all involved parties should have the obligation to inform users of all technical information regarding POPs and to implement the FAO International Code of Conduct in the Distribution and Use of Pesticides.
- Networking among all major stakeholders should be



strengthened to ensure up-to-date information exchange among national, regional and international parties using all available means, including Internet.

- To prevent misuses and unnecessary environmental releases, stocks of POPs should be securely stored. Decisions to use or dispose of expired formulations should be based on chemical and physical analyses. Where national facilities to carry out these analyses is lacking, assistance should be sought and provided in the context of product stewardship.
- Using existing regional multilateral arrangements, such as APEC, ASEAN, OAS and others, enhance scientific, technological, regulatory and enforcement capacities through the transfer of knowledge and technology.

### **3.3 Trade and Finance Strategies and Mechanisms**

#### **3.3.1 Goals**

- To ensure that international trade and finance arrangements are consistent with national and international POP management strategies.
- To recognize that environment and health are more important than trade in POPs.

#### **3.3.2 Means**

- International agencies, local agencies and banking associations which encourage the use of pesticides should:
  - coordinate their activities and conduct environmental audits on sponsored activities;
  - exclude certain POPs, except for certain public health uses, and encourage and support research and development and the use of alternatives;
  - develop codes of practice for pest management; and,
  - require environmental impact assessment under international guidelines.
- International and national banking practices should promote safe alternatives and the reduction/elimination of POPs. Conversion of foreign international debt to support control practices for POPs should be promoted.
- Taxation and incentives should encourage the use of safe alternatives and the reduction/elimination of POPs.
- Use of Codex Alimentarius Maximum Residue Limits for food is a potential mechanism to discourage countries from using POPs in agriculture.

#### **3.3.3 Essentials**

- POP management strategies should be accounted in conversion of loans provided by development banks.
- Eliminate export of POPs and POP-producing

technologies. However, policies of international agencies and trade regulations, should for the time being, allow for the continued production and use of DDT and HCH for human disease vector control where necessary.

- Encourage countries to sign and ratify relevant conventions (e. g. the Basel Convention in the case of waste management; and the 1972 London Convention).
- Seek consideration by GATT/WTO of provisions to allow prohibition of products whose production involves POPs.
- Decisions in respect to trade and investment practices related to POPs should take into account human and ecological security concerns.
- International financial assistance should focus financing on capacity building for the development of alternatives to POPs, risk assessment, monitoring and waste disposal management of POPs.
- POPs issues should be included in the Global Environment Facility (GEF) as a window for funding. Among the priority issues are: development of POPs alternatives; risk assessment and monitoring of POPs and alternatives; and the implementation of human rights and ecological security as affected by POPs.
- POPs management should be promoted by IFCS as a theme for discussion by the UN Commission on Sustainable Development.
- A portion of development assistance of countries that are sources of POPs should be allocated to address the negative impacts of POPs on health and the environment.
- In order to promote the use of POPs alternatives and to reduce global contamination, developed nations should compensate the developing nations for the additional cost associated with the use of alternatives, conditional upon the commitment by the developing nation to cease the use and production of POPs.
- In order to minimize the quantities of DDT, HCH and other pesticides used in public health, the use of integrated vector control options should be promoted (e. g. personal protection measures, environmental management, biological control, natural products, indigenous practices, better housing, health education). In addition, governments and donor agencies should incorporate health safeguards and environmental impact assessments into project development to avoid creating increased vector exposure.

### **3.4 Social Strategies and Mechanisms**

#### **3.4.1 Goals**

- To attain mutual awareness, recognition and understanding of POP issues, problems and constraints locally, regionally and globally by all sectors across all levels of society.
- To influence political will to implement effective POPs management.
- To establish social empowerment through the use of knowledge as a strategy for dealing with POPs, particularly for agricultural uses.

#### **3.4.2 Means**

- Progress in regional and international cooperation in the management of POPs is dependent on political will at the national level.
- Political support should be mobilized among users and stakeholders, whether organized or not, to apply pressure on local, national and international political leaders, governments and the private sector, to support measures to phase-out the production, distribution and use of POPs.
- Fora such as the IFCS and the Regional Commissions of the UN should be used as mechanisms to increase awareness of national decision-makers of the importance of global and regional strategies for addressing POPs.
- Provide extension services and economic incentives, such as subsidies and crop insurance, to encourage farmers to use alternatives to POPs.
- The underlying social, economic and political factors that contribute to the demand for the production and use of POPs should be recognized and addressed.
- Accountability should be defined according to what is socially just for the problems associated with POPs.
- Differences between developed and developing countries should be recognized in assuming responsibilities and tasks related to solutions to POPs problems.
- Formal and informal education campaigns should involve all sectors, including government, NGOs, schools, media and particularly end users such as farmers. Because of the vital importance of this element, the implementation of these information campaigns should be immediate.
- Linkages, networking and other mechanisms should be promoted for the exchange of information and the transfer of knowledge and technology on POPs among nations.

#### **3.4.3 Essentials**

- National, regional and international management institutions must assist in the education of the general

public and the medical community on the potential effects of exposure and exposure avoidance. This effort must use, among others, existing grassroots institutions such as agricultural, peoples' and indigenous organizations.

- Development of alternatives should draw upon traditional and indigenous knowledge.
- Additional resources should be provided by the international community for capacity building in developing country institutions.

### **3.5 Economic Strategies and Mechanisms**

#### **3.5.1 Goals**

- To ensure accounting of all costs of POPs production, use and impacts.
- To support the transition to alternatives to POPs.

#### **3.5.2 Means**

- Comprehensive assessment of short and long term costs and benefits should be used when reviewing activities and consequences concerning the generation, use, disposal and release of POPs.
- International resources (e. g. World Bank, regional development banks, other financial institutions) should be specially earmarked to support the research and development and venture capital required to establish the commercial viability of farm systems that do not rely on chemicals generally, and POPs specifically.

#### **3.5.3 Essentials**

- Decision-makers in all sectors must have access to, and utilize full-cost accounting for POPs and their alternatives, including externalities such as human health, environmental and cultural effects.
- In phasing out POPs, governments must lead in implementing specific transition strategies, including the establishment of time tables (except for certain POPs in public health). For producer economies the strategies must include worker retraining, tax considerations and job opportunities. For user economies the strategies must include retraining for alternatives, maintaining food supply and disease vector control.

### **3.6 Technical and Scientific Strategies and Mechanisms**

#### **3.6.1 Goals**

- To provide the scientific rationale that demonstrates the need and basis for taking action, and that provides support for the effective enforcement of rules and regulations relating to POPs.



- To undertake research and development into acceptable alternatives to POPs (including alternative pest control agents) and the technology of their application, use, disposal and remediation.
- To encourage international cooperation to evaluate long term sub-lethal and chronic effects of POPs.

### 3.6.2 Means

- Develop a set of criteria (e. g. persistence, bioaccumulation, toxicity) that can and will be used to identify POP candidates for action.
- Apply the criteria to existing risk assessment (e. g. from IPCS) to create the starting list of candidates which will include industrial chemicals, pesticides, and contaminants in pesticides/industrial chemicals from processes and waste disposal.
- Recognize that in creating the starting list of candidates, the process to identify and select future candidates will have been created. This allows a path to be built for future actions on POPs based on acquired experience of the past decades. This does not constrain action only on the starting list of candidates; it does, however, commit to initiating action on the ones that are identified.

### 3.6.3 Essentials

- Approach international and national agencies to explore the establishment of new mechanisms and to encourage greater use of existing mechanisms to disseminate information on POPs alternatives, integrated pest management (IPM), non-chemical strategies, best management practices (BMP), as well as regulatory and non-regulatory actions.
- Promote research into appropriate non-POP technologies and training in their use at the farm level. This could include regional demonstrations of efficacy and use.
- Establish national inventories and assessments of POPs which should be shared on a regional and international basis.
- Use existing international organizations, such as UNIDO, to help develop and/or manufacture safer alternatives to POPs. Use existing international organizations, such as FAO, to provide technical support. Use existing regional organizations, particularly newer organizations such as RENPAP, to support joint research, development, education and training.
- Comprehensive assessment procedures for short and long term costs and benefits should be developed for determining the cost-benefits of POPs and their alternatives.

- Use international organizations to support research and development activities, and environmental monitoring of POPs for exposure assessment, particularly in countries where data is lacking.
- Use international organizations to strengthen the national expertise and the technical capacity to evaluate the data on POPs.
- Establish and support an international clearing house on information pertaining to POPs and their alternatives. This clearing house should disseminate information free of charge or for a nominal fee.

## MAKING IT HAPPEN — THE NEXT STEPS

---

- Participants of the Vancouver POPs meeting should help disseminate the Meeting Statement and related POPs materials back to their own governments, organizations and agencies for action.
- All international institutions involved in POPs-related issues should assume leading roles in promoting the implementation of these recommendations.
- As a matter of priority a suitable international agency (e. g. UNEP) is requested to provide definitions, criteria and a comprehensive list of POPs by December, 1997.

As appropriate, individuals, organizations, governments and particularly the participants should:

- Support the initiative proposed at the 18th session of the UNEP Governing Council for action on POPs.
- Extend and consolidate regional agreements. For example, press the UN ECE Executive Body to the LRTAP Convention to move forward on a POP protocol.
- Extend UN ECE regional scientific capacity to a global scale.
- Encourage GATT/WTO to create an environmental commission following the example of NAFTA.
- Bring the results of this meeting to the attention of political leaders through national, regional and international political meetings (e. g. ASEAN).
- Develop a package of proposals to regional development banks to incorporate practices which encourage reduction or avoidance of the use of POPs.
- Develop a program for information and technology exchange within various regional human health and environmental organizations (e. g. ASEAN, PAHO).

- Sponsor regional conferences of pesticide regulators (e. g. RENPAP and similar organizations in Africa and elsewhere), and of human health officials to discuss the elimination of POPs and their substitution with practical alternatives.
- Encourage the full consideration of the information included in this Meeting Statement in on-going international activities related to the management of POPs. This should include the Washington, November 1995 meeting on Marine Pollution Resulting from Land Based Activities, the activities on POPs initiated at the 18th session of the UNEP Governing Council, the 1996 and 1997 sessions of UNCSD, the November 1995 meeting of the Executive Body to the UN ECE LRTAP Convention, the intergovernmental negotiating committee being established to prepare an international legally binding instrument for the application of the PIC procedure, the 1996 meeting of the IFCS, and ongoing sessions of the Barcelona Convention.

The co-chairs of the Joint Canada-Philippines Planning Committee should:

- Consider commissioning individual(s) to prepare a summary report of this Meeting Statement.
- Propose a follow up meeting to examine the global social and economic impacts of POPs and their alternatives, and to assess the progress in implementing the actions identified in this section.
- Promote this document as a reference for regional and international agencies, banks and financial institutions in designing agricultural, industrial and waste disposal loans.
- Promote the messages of this meeting nationally, regionally and internationally.
- Develop an action plan, including a communications strategy, to promote the messages of this meeting to the general public and to appropriate interest groups.
- Within one year, produce a newsletter/communiqué of the results of their activities to international organizations and to all participants.

**Note:** This document represents the consensus of the participants at the *International Experts Meeting on Persistent Organic Pollutants: Towards Global Action*, held June 4 - 8, 1995 in Vancouver, Canada. Any opinions expressed in this document do not necessarily represent the views of the Governments of Canada or The Republic of the Philippines.

## TABLE 1: ACRONYMS

APEC	Asia Pacific Economic Cooperation
ASEAN	Association of South-East Asian Nations
BMP(s)	Best Management Practice(s)
FAO	Food and Agriculture Organization of the United Nations
GAMMA HCH	Lindane
GATT	General Agreement on Tariffs and Trade
GEF	Global Environment Facility
IFCS	Intergovernmental Forum on Chemical Safety
IOMC	Inter-Organizational Programme for Sound Management of Chemicals
IPCS	International Program on Chemical Safety
IPM	Integrated Pest Management
IRPTC	International Register of Potentially Toxic Chemicals
LRTAP	Long-range Transboundary Air Pollution
NAFTA	North American Free Trade Agreement
NGO	Non-governmental Organizations
OAS	Organization of American States
OECD	Organization for Economic Cooperation and Development
PAHO	Pan American Health Organization
PIC	Prior Informed Consent
POP(s)	Persistent Organic Pollutant(s)
RENPAP	Regional Network on Pesticides for Asia and the Pacific
UNCED	United Nations Conference on Environment and Development
UNCSD	United Nation Commission on Sustainable Development
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organization
WHO	World Health Organization
WTO	World Trade Organization



## TABLE 2: EXAMPLES OF SUBSTANCES IDENTIFIED BY SEVERAL FORA AS CANDIDATES FOR ACTION

The following Table includes substances identified for action under two international fora and by one non-governmental organization. A number of listed substances fall within the definition of POPs contained in this Meeting Statement. The substances which are common to two or more of these lists are identified in **bold/underline**. Undoubtedly there are other lists which could be useful to countries and international institutions developing management strategies for POPs.

### 3RD NORTH SEA CONFERENCE — PRIORITY HAZARDOUS SUBSTANCES

Source: 3rd International Conference on the Protection of the North Sea

Drins (Aldrin, Dieldrin, Endrin, Isodrin)

Hexachlorocyclohexane (HCH)\*

DDT

Pentachlorophenol\*

Hexachlorobenzene\*

Hexachlorobutadiene

Carbon tetrachloride\*

Chloroform

Trifluralin

Endosulfan

Simazine

Atrazine

Tributyltin compounds

Triphenyltin compounds

\* Those substances for which it is also expected to achieve a 50% reduction in atmospheric emissions.

Azinphos-ethyl

Azinphos-methyl

Fenitrothion

Fenthion

Malathion

Parathion

Parathion-methyl

Dichlorvos

Trichloroethylene\*

Tetrachloroethylene\*

Trichlorobenzene

1,2-Dichloroethane

1,1,1-trichloroethane\*

Dioxins\*

— PCBs were omitted from this list by the North Sea Conference for administrative reasons.

— Metals have been deleted from this list.

### 3RD NORTH SEA CONFERENCE — LIMITS ON USE OF PESTICIDES

Source: 3rd International Conference on the Protection of the North Sea

The use of the following substances as pesticides must be strictly omitted or banned:

Aldrin

Atrazine

Carbon tetrachloride

Chlordane

Chloropierin

1,2-Dibromoethane

Dieldrin

Endrin

Fluoracetic acid and its derivatives

Heptachlor

Hexachlorocyclohexane (alpha and beta isomers)

Nitrofen

Pentachlorophenol (PCP)

Polychlorinated terpenes

Quintozene

The following substances would have been included in the left hand list but they are not currently in use as pesticides.

Acrylonitrile

Aramite

Captafol

Chlordecone (Kepone)

Chlorodimeform

Chloroform

Crimidine

Isobenzan

Isodrin

Kelevan

Morfamquat

Toxaphene

2,4,5-T

### THE PAN DIRTY DOZEN

Source: Demise of the Dirty Dozen - Pesticide Action Network (PAN) International, 5/93

Aldicarb "Temik"

Campechlor "toxaphene"

Chlordane

Heptachlor

Chlordimeform

DBCP

DDT

Aldrin

Dieldrin

Endrin

Ethylene dibromide (EDB)

Hexachlorocyclohexane (HCH/BHC)

Lindane

Paraquat

Parathion

Methyl-parathion

Pentachlorophenol (PCP)

2,4,5 T

# THE EUROPEAN COMMISSION PRIORITY CANDIDATE LIST (THE LIST OF 129)

Source: Directive 76/464/EEC - "Council Directive of 4 May 1976 on Pollution Caused by Certain Substances Discharged into the Aquatic Environment of the Community" also referred to as "Dangerous Substances Directive."

2-Amino-4-chlorophenol	1,2-Dichloropropane
Anthracene	1,3-Dichloropropan-2-ol
Azinphos-ethyl	1,3-Dichloropropene
<u>Azinphos-methyl</u>	2,3-Dichloropropene
Benzidine	Dichlorprop
Benzyl chloride	<u>Dichlorvos</u>
Benzylidene chloride	Diethylamine
Biphenyl	Dimethoate
Chloral hydrate	Dimethylamine
Chloroacetic acid	Disulfoton
2-Chloroaniline	<u>Endosulfan</u>
3-Chloroaniline	Epichlorohydrin
4-Chloroaniline	Ethylbenzene 1,2-Dichloropropane
1-Chloro-2,4-dinitrobenzene	1,3-Dichloropropan-2-ol
2-Chloroethanol	Fenitrothion
4-Chloro-3-methylphenol	<u>Fenthion</u>
1-Chloronaphthalene	Hexachloroethane
Chloronaphthalenes (technical Mixtures)	Isopropylbenzene
4-Chloro-2-nitroaniline	Linuron
1-Chloro-2-nitrobenzene	<u>Malathion</u>
1-Chloro-3-nitrobenzene	2-Methyl-4-chlorophenoxyacetic acid
1-Chloro-4-nitrobenzene	2-Methyl-4-chlorophenoxypropanoic acid
4-Chloro-2-nitrotoluene	Methamidophos
Chloronitrotoluenes (other than 4-chloro-2-nitrotoluene)	Mevinphos
2-Chlorophenol	Monolinuron
3-Chlorophenol	Naphthalene
4-Chlorophenol	Omethoate
Chloroprene	Oxydemeton-methyl
3-Chloropropene	PAH (with special reference to 3,4-benzopyrene and 3,4-benzofluoranthene)
2-Chlorotoluene	Parathion (including parathion-methyl)
4-Chlorotoluene	PCBs (including PCTs)
2-Chloro- <i>p</i> -toluidine	Phoxim
Chlorotoluidines (other than 2-Chloro- <i>p</i> -toluidine)	Pyazon
Coumaphos	<u>Simazine</u>
Cyanuric chloride	<u>2,4,5-T (including salts and esters)</u>
2,4-D (including salts and esters)	Tetrabutyltin
Demeton (including demeton-O; -S; -S-methyl; -S-methylsulphone)	1,2,4,5-Tetrachlorobenzene
<u>1,2-Dibromoethane</u>	1,1,2,2-Tetrachlorethane
Dibutyltin dichloride	Toluene
Dibutyltin oxide	Triazophos
Dibutyltin salts (other than dibutyltin chloride and dibutyltin oxide)	Tributyl phosphate
Dichloroanilines	<u>Tributyltin oxide</u>
1,2-Dichlorobenzene	Trichlorfon
1,3-Dichlorobenzene	<u>1,1,1-Trichloroethane</u>
1,4-Dichlorobenzene	1,1,2-Trichloroethane
Dichlorobenzidines	Trichlorophenols
Dichlorodisopropyl ether	1,1,2-Trichlorotrifluoroethane
1,1-Dichloroethane	<u>Trifluralin</u>
1,1-Dichloroethylene	Triphenyltin acetate
1,2-Dichloroethylene	Triphenyltin chloride
Dichloroethane	<u>Triphenyltin hydroxide</u>
Dichloromethane	Vinyl chloride
Dichloronitrobenzenes	Xylenes (technical mixture of isomers)
2,4-Dichlorophenol	<u>Atrazine</u>
	Bentazone



## ANNEX ONE — PARTICIPANTS

Ms. Hendayani Teguh Adishesha	Environmental Impact Management Agency	Indonesia
Dr. Lilia Albert	Centro de Ecologia y Desarrollo	Mexico
Mr. Charles Avendaño	Intl. Development Research Centre	Canada
Mr. Ron Baird	Canadian Intl. Development Agency	Canada
Dr. Umar Khan Baloch	Pakistan Agricultural Research Council	Pakistan
Mr. Garth Bangay	Environment Canada	Canada
Dr. Olga Barrat	Barrat and Associates Inc.	Canada
Dr. Carlito Barril	University of the Philippines at Los Baños	Philippines
Ms. Elisabeth Barsk-Rundquist	UN Commission on Sustainable Development	USA
Dr. George Becking	World Health Organization /Intl. Program on Chemical Safety	
	Intl. Labour Organization /Pan American Health Organization	USA
Dr. Vibeke Bernson	Intergovernmental Forum on Chemical Safety	Sweden
Dr. Håkan Björndal	Swedish Environmental Protection Agency	Sweden
Dr. Bosco Chen Bloodworth	Institute of Science and Forensic Medicine	Singapore
Dr. Ellen Brennan	UN Population Division	USA
Dr. James Brydon	Consultant	Canada
Mr. John Buccini	Organization for Economic Cooperation and Development	Canada
Dr. Stephen Chandiwana	Blair Research Institute, Ministry of Health and Child Welfare	Zimbabwe
Mr. Keith Chanon	USA Environmental Protection Agency	USA
Dr. Des Connell	Griffith University	Australia
Dr. Shirley Conover	Lester B. Pearson Inst. for Intl. Develop., Dalhousie University	Canada
Mr. Francisco Cornejo	Fertilizer and Pesticide Authority, Department of Agriculture	The Philippines
Ms. Ila Cornish Hogan	Health Canada	Canada
Dr. Nelia Cortés-Maramba	University of the Philippines, Manila	The Philippines
Mr. Edgar Dante	UN Economic and Social Commission for Asia and Pacific	Thailand
Ms. Ella Deocadiz	Department of Natural Resources	The Philippines
Dr. Erich Dorn	GIFAP, AgrEvo GmbH	Germany
Mr. David Egilson	Environmental and Food Agency	Iceland
Dr. Gary Foley	USA Environmental Protection Agency	USA
Dr. Gilles Forget	Intl. Development Research Centre	Canada
Dr. Claude Fortin	Environment Canada	Canada
Dr. Erasmo Franklin	James Brodie & Co. Ltd.	Belize
Dr. James Franklin	Regulatory & Technical Affairs of EuroChlor	Belgium
Dr. Roberta Gerpacio	Intl. Rice Research Institute	The Philippines
Dr. John Giesy	Michigan State University	USA
Dr. Andrew Gilman	Health Canada	Canada
Mr. Ramon Guardans	Instituto de Medio Ambiente / CIEMAT	Spain
Mr. Francois Guimont	Environment Canada	Canada
Mr. Peter Guy	University of the Philippines at Los Baños	The Philippines
Mr. Andrew Hamilton	North American Comm. for Environmental Cooperation Secretariat	Canada
Ms. Siu-Ling Han	Department of Indian Affairs and Northern Development	Canada
Ms. Sojna Henneman	Environment Canada	Canada
Dr. Pushpa Herath	World Health Organization	Switzerland
Mr. Dennis Herod	Environment Canada	Canada
Mr. Timothy Hodges	Foreign Affairs and Intl. Trade Canada	Canada
Dr. Jack Holland	Environment Protection Agency	Australia
Mr. Nicholas Holme	Commercial Farmers Union	Zimbabwe
Dr. Allan Hruska	CARE Nicaragua	Nicaragua
Dr. Henry Huntington	Inuit Circumpolar Conference	USA
Dr. Malcolm Iles	Natural Resources Institute	United Kingdom
Dr. Hisato Iwata	Ehime University	Japan

Dr. Paul Johnston	Greenpeace Exeter Research Laboratory	United Kingdom
Mr. Maximo Kalaw	Haribon Foundation for the Conservation of Natural Resources	The Philippines
Mr. Amardeep Khosla	Industry Canada	Canada
Dr. Ashok Khosla	Development Alternatives	India
Dr. Yang-Won Kim	Ministry of Agriculture, Forestry & Fisheries	South Korea
Mr. Yong-Hwa Kim	UN Industrial Development Organization	Austria
Ms. Elaine Koren	Foreign Affairs and Intl. Trade Canada	Canada
Ms. Maria Lourdes Lagarde	National Economic and Development Authority	The Philippines
Dr. Karl-Heinz Leist	GIFAP, Hoechst Schering AgrEvo GmbH	Germany
Dr. Harvey Lerer	Environment Canada	Canada
Mr. Gordon Lloyd	Canadian Chemical Producers' Association	Canada
Dr. Rune Lönngren	Intergovernmental Forum on Chemical Safety	Sweden
Atty. Ma. Paz. Luna	Haribon Foundation for the Conservation of Natural Resources	The Philippines
Mr. David Lunn	Ministry of Agriculture and Fisheries	New Zealand
Mr. Ronald Macfarlane	Pesticide Action Network	Malaysia
Dr. Gamini K. Manuweera	Intl. Institute for Environment and Development	Sri Lanka
Ms. Stephanie Meakin	Environment Canada	Canada
Dr. Woyciech Mill	Institute for Ecology of Industrial Areas	Poland
Ms. Carole Mills	Dene Nation	Canada
Dr. Victor Mletwa	University of Swaziland	Swaziland
Dr. John Murlis	Her Majesty's British Inspectorate of Pollution	United Kingdom
Mr. Bill Murray	Food and Agricultural Organization of the UN	Italy
Mr. Jay Nagendran	Alberta Environmental Protection	Canada
Dr. Alfredo Oliveira-Filho	Federal University of Rio de Janeiro	Brazil
Ms. Aida Ordas	Fertilizer and Pesticide Authority, Department of Agriculture	The Philippines
Dr. Jozef Pacyna	Norwegian Institute for Air Research	Norway
Mr. Ramon Paje	Department of Environment and Natural Resources	The Philippines
Mr. Mark Palmer	Canadian Council of Ministries of the Environment	Canada
Mr. Morrie Paul	Agriculture Canada	Canada
Mr. Warwick Pearse	Worksafe Australia	Australia
Mr. Peter Peterson	UN Envir. Prog./Intl. Register of Potentially Toxic Chemicals	Switzerland
Dr. Prabhu Pingali	Intl. Rice Research Institute	The Philippines
Dr. Romeo Quijano	University of the Philippines, Manila	The Philippines
Mr. Victor Ramos	Presidential Assistant for Energy and Environment	The Philippines
Mr. Larry Rampy	Dow Chemical Company	USA
Dr. Sixto Roxas	Foundation for Community Org. and Management Technology	The Philippines
Ms. Barbara Rutherford	World Wide Fund for Nature Intl.	Switzerland
Mr. Richard Sigman	Organization for Economic Cooperation and Development	France
Dr. Palarp Sinhaseni	Chulalongkorn University	Thailand
Ms. Anne Snider	Arctic Environmental Protection Strategy	Canada
Dr. David Stone	Long-range Transboundary Air Pollution/ Convention for the	
	UN Economic Commission for Europe	Canada
Dr. William Strachan	National Water Research Institute	Canada
Mr. Geoffrey Thornburn	International Joint Commission	Canada
Mr. Hans Verhoëf	Wageningen Agricultural University	The Netherlands
Mr. Hajo Versteeg	Consultant	Canada
Dr. Hermann Waibel	University of Hannover	Germany
Dr. Alan Watson	McGill University	Canada
Mr. Brian Watts	Consultant, Pesticide Regulatory Affairs	New Zealand
Dr. Leslie Whitby	Department of Indian and Northern Development	Canada
Dr. Legesse Wolde-Yohannes	Endod Foundation, Addis Ababa University	Ethiopia
Mr. Michael Wong	Environment Canada	Canada