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WHO INFORMATION PAPER ON

**PUBLIC HEALTH MANAGEMENT OF  
PERSISTENT ORGANIC POLLUTANTS  
IN RELATION TO THE  
STOCKHOLM CONVENTION**

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### Introduction

1. The fundamental objective of the Stockholm Convention is the protection of human health and the environment. POPs have the potential to impact inequitably on the health of people in developing countries, on women, on future generations, on sensitive ecosystems and life-stages, and on indigenous communities due to contamination of traditional foods. The objective of WHO is the attainment by all peoples of the world of the highest possible level of health without distinction of race, religion, political belief, economic or social condition. Implementation of the Stockholm Convention is rightly a priority for WHO as the prime global public health authority.
2. The need to promote chemical safety and pay special attention to POPs is not a new issue for WHO. The World Health Assembly Resolution WHA50.13 on POPs in 1997, clearly points to the need for technical cooperation for the determination of capacity-building needs, the implementation of programmes for the management of chemical risks, the exchange of reliable comparative data on human exposures resulting from chemical incidents and poisonings. What is emerging now is the need for stronger inter-sectoral cooperation and the need to take full account of the health aspects of chemical safety and for an actively-engaged health sector in national and international approaches to chemicals management (WHA 56.22).
3. WHO is working with countries to identify their priorities for chemicals management and the issues to be addressed to enable successful interventions by the health sector. This includes public-health needs linked to the Stockholm Convention.

### Public-health-related issues

4. The Stockholm Convention provides the internationally-agreed mechanism for achieving the elimination and reduction of POPs. The needs of the health sector at country level to assist implementation of the Stockholm Convention require explicit elaboration so that assistance can be properly directed.
5. Considering the provisions of the Convention, key issues for the health sector include the need to assess public-health priorities, capabilities and impacts in terms of National Implementation Plans (NIPs); assessment and promotion of alternatives to intentional uses of POPs; future identification and targeting of additional POPs; awareness, training and education; biomonitoring and building on existing data to understand pathways, trends, and to contribute to an evaluation of the effectiveness of the Convention.

6. Areas of the Convention where such needs arise are summarized in **Annex 1**, for the consideration of countries when judging their priorities related to public health.

### **Activities of WHO**

7. The activities of WHO related to the reduction and/or elimination of POPs have been reported regularly during the course of the negotiations of the Convention and progress reports will also be prepared on a regular basis for the Conference of the Parties.

8. **Annex 2** provides an overview of some current and recent WHO activities relevant to public-health aspects of the Convention. WHO will build on and extend these activities as necessary when responding to country needs identified in the context of Convention requirements listed in Annex 1.

### **Conclusion**

9. The central place of public health in the objectives of the Convention and the number of issues for consideration by the health sector argue for increased strengthening of the role of the health sector and identification of related key stakeholder groups involved in the management of POPs. Effective intersectoral coordination will be needed at each and every stage of implementation of the Convention.

10. In preparing for full implementation of the Convention, countries should be prepared to exchange information on their experience in addressing the key public-health issues relating to POPs and their priority future needs. WHO stands ready to assist countries with identifying and finding mechanisms to address those health-sector needs.

**Annex 1****Areas of the Stockholm Convention where issues for the health sector arise**

Some of the key public-health issues and needs for health sector involvement may be identified by examining of the requirements of the Convention.

- **Intentionally-produced POPS.** The Convention requires the prohibition or elimination of the intentional production and use of 12 POPs, understood to be the most dangerous. The most notable work to date for the health-sector has been the establishment of special provisions and arrangements that allow the production and use of DDT for controlling mosquitoes and other disease vectors in the domestic environment. Implementing the Convention requires the development of national DDT action plans and consideration of alternatives to DDT for vector control. Assessment of alternatives to future POPS must weigh and take into account not only their potential human and environmental health risks but also their effectiveness in disease control, where applicable.
- **Transition to safer alternatives.** The 12 POPs which will be eliminated have a wealth of information surrounding their health and environmental effects. Many alternatives will have less information available on them and so will require careful public-health decision making in the face of uncertain risks.
- **Future POPs.** The future identification and targeting of additional POPs for action will require a process of ongoing assessment and international decision making using scientifically-sound and transparent principles and methodologies. Learning from the experience and utilizing the best scientific knowledge about the health effects of POPs will be a vital part of the process to address the human health effects of low levels of exposure.
- **Stockpiles of products and articles containing POPs.** The Convention calls for the identification and disposal of stockpiles of POPs which will no longer be used and the improved management of waste streams to separate solid, toxic and biomedical waste for environmentally sound management/disposal. Stockpiles of pesticides containing POPs in the African region have raised public-health issues, in particular the lack of awareness of potential health effects and the need for preparedness and response mechanisms should releases occur.
- **Unintentionally-produced POPs.** The Convention requires the minimisation and elimination of POPS which have no commercial use but which are produced as by-products of combustion or industrial production. The pathways for human exposure to many of these by-products are not clearly understood. Sensitive methods of detection are also needed to target mitigating actions.
- **National Implementation Plans (Article 7).** The development of National Implementation Plans (NIP) under Article 7 of the Convention will provide a focus for implementation of the Convention in countries. It is understood that

individual NIPs are intended to meet the needs of each Party but comprising a common set of elements including: an assessment of a country profile; an assessment of the priority POPs issues in the country concerned, including information on current monitoring releases and environmental and human health impacts; awareness and education among target groups; identification of impacted populations or environments; estimated scale and magnitude of threats to public health and environmental quality; and social implications for workers and local communities.

- **Effectiveness evaluation (Article 16).** Commencing four years after the entry into force of the Convention and periodically thereafter, an evaluation of the effectiveness of the Convention will be undertaken. There is a need for comparable monitoring data on the presence of POPs as well as their regional and global environmental transport. The presence of POPs in human milk is an important food safety issue as well as one with broader public health concerns. Building on monitoring programmes underway in a number of regions, as well as using existing biomonitoring data, will be important for monitoring the effectiveness of the Convention and for integrating data on environment and health impacts.
- **Public information, awareness and education (Article 10).** Article 10 includes a number of measures for improving awareness about POPs, including that on the part of policy and decision makers and the public. Special reference is made to the need for public participation and educational programmes for women, children and the least educated on the health and environmental effects of POPs and their alternatives.
- **Research, development and monitoring (Article 11).** Under Article 11, attention is called to the need for appropriate research, development, monitoring and cooperation including on the presence, levels and trends in humans and the environment, human health effects, and socio-economic and cultural impacts.

**Annex 2****Overview of WHO activities on Persistent Organic Pollutants**

The purpose of this annex is to provide an overview of some current activities. Further information can be found on the WHO internet site (<http://www.who.int>).

At the seventh session of the Intergovernmental Negotiating Committee of the Stockholm Convention on Persistent Organic Pollutants, WHO reported on policies and programmes dealing with POPs-related activities in general, and specifically on:

- **Implementation of the WHO action plan for the reduction of reliance on DDT in disease vector control (UNEP/POPS/INC.7/INF/25).**
- **The development and implementation of alternative methods and approaches to the use of pesticides for disease vector control (UNEP/POPS/INC.7/INF/25).**

Other activities relevant to the implementation of the Convention are undertaken by WHO and also jointly under the auspices of the International Programme on Chemical Safety (IPCS) (WHO, ILO and UNEP). These include:

- **Sustainable reduction of reliance on DDT in disease vector control.**  
Technical support to Parties is being coordinated through the WHO Roll Back Malaria Programme. Parties are being supported to assess needs for vector control and to develop national action plans, as part of the overall NIPs on POPs. A number of regional and country projects are being implemented in collaboration with UNEP and the Global Environmental Facility. The projects are aimed at: (i) demonstrating the applicability and cost-effectiveness of alternatives to DDT in specific eco-epidemiological settings; (ii) strengthening national capacity to plan, implement and evaluate integrated vector management; (iii) strengthening country capacity for pesticide management and to promote judicious use; and (iv) establishing regionally-coordinated mechanisms for dissemination and sharing of country experiences.
- **Supporting the evaluation processes of the Conference of Parties (COP).**  
In accordance with Annex B, Part II, Paragraphs 4 & 6 of the Convention, and in response to specific request by the 6<sup>th</sup> and 7<sup>th</sup> Sessions of the INC (Decisions INC-6/2 and IN-7/2), country-reporting mechanisms on the production and use of DDT have been developed in close collaboration with the Convention Secretariat. The reporting procedures are to be considered by COP 1 for adoption. Further to Decision INC-7/2, the draft procedures have been used by Parties for the first three-yearly reporting. In addition, an Advisory Report has been jointly developed with the Convention Secretariat to assist the evaluation of COP on the continued need for DDT use in disease vector control.
- **Chemicals assessments**, including completion of Concise International Chemical Assessment Documents (CICADs) on chemicals of priority concern (and on alternatives and future POPs), and the Joint FAO/WHO programmes

on food additives and contaminants and veterinary drug and pesticide residues. IPCS undertook the original evaluation<sup>1</sup> of the 12 chemicals covered by the Stockholm Convention at the request of UNEP Governing Council Decision 18/32 in May 1995. New CICADs on polychlorinated biphenyls (PCBs) and heptachlor have recently been completed and a reassessment of DDT is planned, in view of its continued usage in specified circumstances. In 2002, IPCS published a "Global Assessment of the State-of-the-Science of Endocrine Disrupting Chemicals (EDCs)", which along with subsequent IPCS-sponsored international workshops identified several urgent, high-priority research needs concerning effects of EDCs (most of which are POPs).

- **The WHO Pesticides Evaluation Scheme (WHOPES)** assesses safety and efficacy of pesticides other than DDT for the control of vector-borne diseases. WHOPES has evaluated alternatives to DDT, including organophosphates, carbamates and pyrethroids, in different settings, including use as larvicides and for impregnation of bed nets. Evaluation of residual and space spraying is planned.
- **Monitoring of POPs in biological media.** WHO has undertaken global surveys of dioxins, dibenzofurans and dioxin-like PCBs in human milk (1987-2002). A UNEP/WHO protocol for the collection, handling, analysis and assessment of POPs in human milk has been developed. Since 1976, through the WHO GEMS/Food Programme, evaluation and monitoring of data on levels of a number of POPs in human milk, indicator foods and in total diet studies to assess dietary exposure to these chemicals have been performed. The review of heptachlor referred to above includes an extensive survey of reported concentrations of heptachlor in plasma, breast milk and adipose tissue. IPCS evaluations of available data on POPs in biological media and of the scope of the problem indicate a significant paucity of data on levels of POPs in children and indigenous populations. Improved biomarkers of exposure, susceptibility and effect are needed. Pilot molecular-epidemiology collaborative studies to fill these data gaps have been initiated in three Latin American and Caribbean countries. Expansion to other countries is planned.
- Work on **improving risk assessment methodologies** includes a newly-established review process for mammalian toxic-equivalency factors (TEF), to improve risk assessment of complex mixtures of dioxins and dioxin-like compounds. A project on rapid assays for dioxin-like compounds has recently been finalized, and a collaborative European project on risk assessment of non-dioxin-like PCBs initiated. A collaborative project on harmonization of assessment of modes of action of carcinogens is underway and another project on human relevance of carcinogenicity findings in experimental animals has commenced recently (given uncertain modes of action of POPs as carcinogens).

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<sup>1</sup> IPCS (1995). A review of selected persistent organic pollutants: DDT, Aldrin, Dieldrin, Endrin, Chlordane, Hexachlorobenzene, Mirex, Toxaphene, Polychlorinated biphenyls, Dioxins and Furans, PCS/95.39.

- **Public information, awareness and education.** WHO has prepared a training manual with information for health care providers to increase awareness of POPs and the importance of the role of health-care providers in detection, surveillance and prevention of POPs exposure, especially in children under a children's health and environment initiative. In 2004, WHO convened a training workshop for health professionals from Mercosur countries on childhood exposures to POPs. Future CICADs, including one on DDT, will contain a specific section on vulnerable groups, including children. Detailed information for the general public is provided in 15 languages through IPCS International Chemical Safety Cards on ten of the 12 POPs (mirex and furans excepted).
- **Collection and aggregation of human effects and exposure data.** Work on harmonized methodologies and tools includes those for collection and aggregation of precisely-defined comparable human toxicology data on a multilingual, multinational basis to determine human health effects of chemicals exposures at a population level. WHO is in addition strengthening the public-health role of poisons centres, through building of networks and development of internationally peer-reviewed guidelines concerning the recognition, prevention and clinical management of chemicals exposures, including those related to POPs.