

## THE NEEDS OF LISTING NEW POPS FOR DEVELOPING COUNTRIES

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### Abstract

There are more than 12 new POPs being listed to the Stockholm Convention. Some of the candidate POPs are active chemicals and still used widely especially in developing countries. The technical approach for evaluating the listing new POPs is following Annex D, E, and F of the Stockholm Convention. The technical approach does include scientific and technical details, and also includes economical and social details relating to the controlling of candidate POPs. It is not only the gap of scientific research making the assessment of candidate POPs unbalance between developed and developing countries due to lacking of data in developing countries, but also the gap of availabilities of alternatives for candidate POPs. The involvement of developing countries from scientific bases is essential to help the assessment of new POPs real globally. The needs of listing new POPs for developing countries include: (1) capacity building on assessment of new POPs; (2) conducting research on assessment of new POPs, especially at scientific and technical and alternative aspects; (3) institution strengthening on policy, regulation and management related to new POPs and chemicals; (4) conducting alternative research and development; and (5) promoting technologies on release reduction and waste sound management of new POPs.

### Introduction

Since 2001, the Stockholm Convention on Persistent Organic Pollutants was indorsed by more than 150 countries. According to the article 8 of the convention, several countries nominated 12 candidate POPs for the parties consideration so far. Of which 12 candidate POPs, there are a few chemicals are used widely especially in developing countries, such as PFOS, Endosulfan, HBCD and etc. It is foreseen that more and more active chemicals in the market will be nominated as new POPs in future.

In fact the convention established a scientific approach for assessment of the candidate POPs. The technical approach for evaluating the listing new POPs is following Annex D, E, and F of the Stockholm Convention<sup>1</sup>. The technical approach does include scientific and technical details, and also includes economical and social details relating to the controlling of candidate POPs. However, the available information for evaluating the listing new POPs are mainly from developed countries. It is not only the gap of scientific research making the assessment of candidate POPs unbalance between developed and developing countries due to lacking of data in developing countries, but also the gap of availabilities of alternatives for candidate POPs. The involvement of developing countries from scientific bases is essential to help the assessment of new POPs real globally; and more important, is a base for developing countries to conduct control and phaseout the candidate POPs once they are listed in the Convention. Obviously, the involvement of developing countries will be more and more important for promoting the listing new POPs to protect the environment and human health. Therefore, to indentify the needs of listing new POPs for developing countries is very important.

### Methods

The technical procedure of reviewing of new POPs is designed according to the convention Articles and Annex D, E and F. The information reviewed include<sup>1</sup> (1) information requirements and screening criteria, that include chemical identity, persistence, bio-accumulation, potential for long-range environmental transport and adverse effects. (2) information requirements for the risk profile, that include: sources, such as production data, uses; and releases, such as discharges, losses and emissions; hazard assessment; environmental fate; monitoring data; exposure in local areas and, in particular, as a result of long-range environmental transport, and including information regarding bio-availability; national and international risk evaluations, assessments or profiles and labelling information and hazard classifications, as available; and status of the chemical under international conventions. (3) information on socio-economic considerations, Efficacy and efficiency of possible control measures in meeting risk reduction goals; alternatives (products and processes); positive and/or negative impacts on society of implementing possible control measures; waste and disposal implications (in particular, obsolete stocks of pesticides and clean-up of contaminated sites); access to information and public education; status of control and monitoring capacity; and any national or regional control actions taken, including information on alternatives, and other relevant risk management information.

There are 12 chemicals nominated as new POPs, of which 9 chemicals were approved as POPs listed in Annex A, B, C of the convention by the Conference of Parties in May 2009<sup>2</sup>. The 9 chemicals are Chlordecone, Hexabromobiphenyl, Pentachlorobenzene, Lindane, Alpha hexachlorocyclohexane ( $\alpha$ -HCH), Beta hexachlorocyclohexane ( $\beta$ -HCH), commercial Pentabromodiphenyl ether, commercial Octabromodiphenyl ether, and Perfluorooctane sulfonic acid, its salts and perfluorooctane sulfonyl fluoride (PFOS). For indentifying the contribution of developed countries and developing countries, we reviewed the 9 listing proposals and risk profiles drafted by Persistent Organic Pollutants Review Committee for the 9 approved new POPs. The detail reviewed information are focusing on references sources within the 9 listing proposals, risk profiles and risk management evaluation reports regarding to screening criteria including persistence, bio-accumulation, potential for long-range environmental transport and adverse effects; regarding to the risk profile information on sources, hazard assessment and etc; and regarding to risk management evaluation reports on management and alternative assessments. All those 27 reports are available on the web site of the Secretariat of Stockholm Convention. The reviewed sections of the reports focusing on references are shown in following table.

Table 1 Reviewed sections of the proposals and draft profiles

Sections of the Proposals for listing the nine new POPs	
2 Persistence	Yes
3 Bioaccumulation	Yes
4 Potential for long-range environmental transport	Yes
5 Adverse effects	Yes
Sections of the risk profiles	
All sections of the report	Yes
Sections of the risk management evaluation report	
Section related to management and alternative	Yes

## Results and Discussion

There are total 451 paper listed as references in the 9 listing proposals relating to persistence, bio-accumulation, potential for long-range environmental transport, and adverse effects. The distribution of sources of the 451 references by developed countries and developing countries are shown in Table 1. Though there are three chemicals, Lindane, Alpha hexachlorocyclohexane, Beta hexachlorocyclohexane, proposed by Mexico (developing country), but the only one paper from developing country is used as reference for Hexabromobiphenyl.

Table 2 Source distribution by characters and countries in the listing proposals

Chemicals	References of Source countries	persistence	bio-accumulation	potential for long-range environmental transport	adverse effects
Chlordecone	developed countries	9	23	14	35
	developing countries	0	0	0	0
Hexabromobiphenyl	developed countries	11	9	13	45
	developing countries	0	0	1	0
Pentachlorobenzene	developed countries	7	3	14	4
	developing countries	0	0	0	0
pentabromodiphenyl ether	developed countries	8	27	39	22
	developing countries	0	0	1	0
Octabromodiphenyl ether	developed countries	4	8	6	4
	developing countries	0	0	1	0
$\alpha$ -HCH	developed countries	5	4	4	5
	developing countries	0	0	0	0
$\beta$ -HCH	developed countries	6	5	3	4
	developing countries	0	0	0	0
Lindane	developed countries	4	19	24	5
	developing countries	0	0	0	0
PFOS	developed countries	4	21	15	15
	developing countries	0	0	0	0

There are 723 references papers used in the risk profile reports, of which only 38 (5%) were drafted by authors from developing countries. Furthermore, the 38 papers mainly focusing on  $\alpha$ -HCH and  $\beta$ -HCH.

Table 3 Source distribution by countries in risk profile reports

	developed countries	developing countries	Total
Chlordecone	22	0	22
Hexabromobiphenyl	23	1	24
Pentachlorobenzene	99	0	99
Pentabromodiphenyl ether	150	3	153
Octabromodiphenyl ether	86	2	88
$\alpha$ -HCH	98	14	112
$\beta$ -HCH	73	18	91
Lindane	54	0	54

PFOS	80	0	80
Total	685	38	723

It is obvious that the contribution of research papers by authors from developing countries for reviewing the screening criteria of candidate POPs and risk profiles are negligible. Or on the other hand, the research capacity and research work in developing countries are much lower and needed strengthening and promotion.

The management and alternative assessment for new candidate POPs are included in the risk management evaluation reports. Within the risk management evaluation reports for the 9 new POPs which approved by the Conference of Parties in May 2009, there is no information regarding to the management and alternatives from developing countries mentioned for PFOS, such live chemical. Regarding to the dead chemicals such as Chlordecone, Hexabromobiphenyl, Pentabromodiphenyl ether and others, there are very few management institution mentioned in the risk management evaluation reports, however, the replacement/phaseout of those new POPs mainly were completed in developing countries. Management regarding to Lindan in developing countries, such as China, Mexico South Africa and Thailand are mentioned in the risk management evaluation report.

Based reviewing on the 27 listing proposals, risk profile reports and risk management evaluation reports, we found that the contribution to review new POPs on scientific and technical aspects from developing countries are much behind to developed countries. It is not only the gap of scientific research making the assessment of candidate POPs unbalance between developed and developing countries due to lacking of data in developing countries, but also the gap of availabilities of alternatives for candidate POPs. However, the involvement of developing countries from scientific bases is essential to help the assessment of new POPs real globally, since there are many phaseout activities needed be done by developing countries, especial regarding to those active chemicals. For contributing to review new POPs, the needs of listing new POPs for developing countries include: (1) capacity building on assessment of new POPs; (2) conducting research on assessment of new POPs, especially at scientific and technical and alternative aspects; (3) institution strengthening on policy, regulation and management related to new POPs and chemicals; (4) conducting alternative research and development; and (5) promoting technologies on release reduction and waste sound management of new POPs.

### References

- 1 UNEP, Stockholm Convention on Persistent Organic Pollutants, 2001
- 2 UNEP, Report of the Conference of the Parties of the Stockholm Convention on Persistent Organic Pollutants on the work of its fourth meeting, 2009