

# Stakeholders Perspective of Chemicals (POPs) Management in India

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**Disclaimer:** These are the perspectives of stakeholders that have been collected and summarized. And most importantly, that they do not necessarily reflect our views or perspectives. Neither have the claims made been verified or validated.

## Background

Persistent Organic Pollutants (POPs) are chemicals that persist in the environment for decades and are bio accumulative and highly toxic even if released to the environment in small quantities. The Stockholm Convention on POPs was adopted to eliminate or restrict the production and use of POPs and to safely manage stockpiles of the existing POPs. In order to reduce their impact on human health and the environment, the Stockholm Convention on POPs was adopted in 2004. As of now, thirty one chemicals are listed as POPs after several rounds of reviews and negotiations under the Stockholm Convention. This global agreement has set measures that need to be taken by each country on the production, import, export, disposal, and use of POPs and has put obligations on the parties to the convention to take necessary measures in this regard.

Although the Stockholm Convention currently regulate thirty-one chemicals that are POPs and the list is continuously expanding, India has opted for an arrangement to ratify the convention in its own pace and subsequently submitted its National Implementation Plan (NIP) to phase out the twelve POPs known as the “Dirty Dozen” in 2011. In the NIP, the government developed its strategy to deal with these chemicals, and subsequently, the Ministry of Environment - Forest and Climate Change of India (MoEFCC) promulgated some regulations to act on these chemicals. The inventory and the assessment of these POPs were carried out by multiple agencies and institutions in India. Recently, elimination of the seven “new” POPs is high on the agenda of MoEF&CC, as it has come out with a new notification in 2018<sup>1</sup> to phase out seven new POPs in India. The Government of India has also ratified these POPs on 7 October 2020, and paved way for elimination of such.

The India-Norway cooperation project on capacity building for reducing plastic and chemical pollution in India (INOPOL) aims to provide a robust foundation for India to solve this urgent issue of implementing the Stockholm Convention. Because of its size, large population, rapid urbanization, and vast agricultural and industrial production, India is an important party to successfully implement the Convention globally. The INOPOL project builds on well-established cooperation between India and Norway through collaboration on POPs and other emerging chemicals.

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<sup>1</sup> <https://pib.gov.in/PressReleasePage.aspx?PRID=1662335>

The Regulation of the POPs Rules, which entered into force on March 8, 2019 prohibits the manufacture, trade, use, import, and export of the following seven POPs:

- (i) Chlordane;
- (ii) Hexabromobiphenyl;
- (iii) Hexabromodiphenyl ether and Heptabromodiphenyl ether (commercial octa-BDE);
- (iv) Tetrabromodiphenyl ether and Pentabromodiphenyl ether (commercial penta-BDE);
- (v) Pentachlorobenzene;
- (vi) Hexabromocyclododecane; and
- (vii) Hexachlorobutadiene.

This report aims to collect, analyse and present the stakeholders' perspectives in managing these seven new POPs. It examines the available institutional mechanisms for POPs management and tries to identify the key challenges and gaps in implementing the current rules and regulations in Gujarat.

## Chapter-1 Perspective of Scientists and Academicians on POPs management in India

Research studies on POPs are going on in major research institutes such as the National Environmental Engineering Research Institute (NEERI), CSIR-Indian Institute of Toxicology Research (IITR), SRM Research Institute, CSIR-National Institute for Interdisciplinary Science and Technology (NIIST), etc. These institutes have dedicated POPs labs and have the required monitoring equipment and capability to detect them. **CSIR-NEERI is the nodal center of UNEP on management of POPs to make the subject more understandable by the general public and researchers in the country.**

The major focus of the Stockholm Convention Regional Centre (SCRC) on POPs, hosted by CSIR-NEERI is<sup>2</sup>:

- Creating a research space and relevant projects to deal with practical issues on assessment, analysis, monitoring, treatment and disposal of POPs/ newly added POPs/ proposed POPs
- Creating elaborate database on the health and environmental impact of POPs under tropical conditions through research projects and interactions with relevant groups across the region
- Creating and building up capacity in the region to deal with challenges related to E-waste management and Minamata Convention
- Technical assistance to the regional parties for the capacity building for effective implementation of Basel, Rotterdam, Stockholm (BRS) and Minamata Conventions
- Integrating the research groups in various universities and research institutions in the region for development of relevant projects and creating a reliable data base

The experts from SCRC were part of the stakeholder cohort group for consultation on the gaps and challenges in management of POPs in India, with special emphasis on Gujarat State. In this regard, a series of online and in-person stakeholder consultations were held with eminent scientists and academicians across India to understand the ongoing activities on POPs and their perspectives on safe management of POPs. The online consultation meetings were held with: Dr. Natesan Manickam (Chief Scientist, Environmental Toxicology, CSIR-Indian Institute of Toxicology Research), Dr. Paromita Chakraborty (Associate Professor, Environmental Science and Technology Research Group Leader, SRM Research Institute), Dr. Ramesh Kumar (Senior Scientist, CSIR-NEERI, Nagpur), Dr. Kanchan Kumari (Scientist, CSIR-NEERI) and Dr. K.P. Prathish, Scientist, CSIR-NIIST. All of these scientists have conducted several research studies

on POPs and have many publications on assessment of the environmental fate of POPs and evaluation of toxicological effects of POPs.

This consultation shed light on a few key issues and challenges in regulating new POPs in India. These are summarized below:

### **1. Identification and development of research methodologies for the seven new POPs:**

The major categories of recently banned new POPs are flame retardants and they are Bromodiphenylethers (BDEs). For every chemical, there are different congeners; some are interlinked, and institutes like CSIR-NEERI and SRM are developing analytical skills and reliable methodologies for such congeners that is time taking. The international treaties generally provide information on safer alternatives, disposal, and extension. However, India rarely leverages these possibilities. There is a need to collaborate with the international research institutions with advanced technology to enhance the capacities of the research community in India.

### **2. Data unavailability:**

India lacks India-specific scientific data, that is why India sometimes lacks vital information needed for negotiating an environmental agreement and may accept international commitments without complete insight in / picture of the domestic situation. We need to have details on whether a particular chemical can degrade or persist in the country's environmental situation and climate conditions, to strengthen our ground and voice our concerns on international platforms.

### **3. Challenges in the implementation of the regulations**

The regulatory mechanisms and implementation of the regulation are found to be a major issue in India. The implementation is overall quite ineffective. Regarding the recently banned seven POPs, MoEFCC drafted a rule that took almost one year to come into force. Still, it is paramount to reach the stakeholders involved in manufacturing, importing and exporting, or dealing with these chemicals for effective implementation of the rules. As a developing country, India cannot afford to spend much financial resources on the management of POPs. On the other hand, developed countries have better capacity to do so, partly due to the requirements on industry to pay for management and, as in the EU, burden sharing between member states.

### **4. Challenges faced by the regulatory authorities:**

Along with the Central Pollution Control Board (CPCB), the State Pollution Control Boards (SPCBs) have been bestowed with the responsibilities for monitoring the emission levels and enforcement of the regulations on POPs at various levels. CPCB has communicated to all the SPCBs for implementation of the MoEFCC notification on new POPs. Unfortunately, neither CPCB, nor any SPCBs have attended the Stockholm Convention meetings on POPs. The Trace Organic Laboratory (TOL) of CPCB has the capability of analysis of some of these chemicals, but but not all.

The concerned Ministry is the nodal Ministry to develop analytical laboratories for research studies and scientific data on the concerned chemicals for 3-4 years. However, things are not in a proactive state. For example, whenever some country is proposing a ban on some chemical, we realize we don't have sufficient data, and it's impossible to generate it in such a short period. And most of the time, in the research labs in the country, people are not that aware of such international policies. So expertise is needed, and funds are required to develop India-specific data on all chemicals.

## 5. Awareness level

The level of awareness is deficient among all the concerned stakeholders on POPs in general. Manufacturers and industries have no idea what chemicals they're dealing with, whether it is a POPs or not, appropriate management of such substances, or their negative consequences. As a result, it is crucial to connect with all stakeholders and hold periodic consultation or awareness sessions.



## Chapter-2 Perspective of stakeholders from industries on POPs management in India

To understand the industry perspective on POPs management in India, some industries who are engaged in chemical production (including POPs) as well as end users of chemicals in various process were contacted. The following points were highlighted by the key people from industries pertaining to POPs production and consumption:

### 1. Inadequate participation of industries:

The government often provides draft regulations to the industry through gazette notices, but the industry does not respond to them on time due to several factors (listed below) and because the industry is not proactive when these draft regulations become available for comments. The industry needs to be more active as these regulations directly impact them.

#### i) Time for public/industry consultation:

The period of public comment on policy drafts is typically short. Several industrialists do not follow the official Government gazette due to a lack of orientation, and hence there is a loss of time. The example shared with the team was that "if a deadline to respond is a month, information usually percolates to the stakeholders after a couple of weeks," thereby leaving the industry limited time to understand the issue/subject of discussion. This can lead to minimal responses being sent by industries. It was suggested that at least 90 days should be the time period for the public/industries to respond to the policy drafts.

#### ii) Use of vernacular language for effective communication:

The draft policy should be in a vernacular/regional language as not everyone understands Hindi or English.

#### iii) Sharing of complete information with industries:

It is in the interest of all stakeholders as well as the handling & management of POPs that the dissemination of relevant information on POPs including training programmes are intimated on time by the concerned national and international agencies. When the industry members are called for a meeting with government authorities, the information shared with them is usually limited, and the notice time is relatively short. Therefore, industry members feel that they need more information about the subject that will be discussed as well as an appropriate time to understand and prepare for such meetings effectively.

As indicated in the initial point, industry needs to be more proactive. Therefore, to do so, capacity building and guidance are essential. (\*For example, subsidies, when available, are not taken up by the industry because of the lack of knowledge on how to do so). Involvement of all stakeholders is key to sound management of POPs.



**iv) Use of multiple channels for communication:**

To ensure that key information (such as draft policies) is disseminated among industries, it can be shared via email to registered industries. Since contact information is given at the time of registration and an indication of the type of industry, targeted information should be shared through multiple channels (email, associations, etc.). Some industries like Society of Indian Automobile Manufacturers (SIAM) receives information related to ratification of POPs either directly from BRS secretariat or MoEFCC, but not all industries receive any update.

**2. Strengthening MSME's to adapt their production based on new rules:**

To meet the new regulations and rules, the industries need time and support to be able to make the required changes. Moreover, small and medium businesses usually lack the capital and additional resources to comply, which makes it more difficult to comply. Hence, MSMEs need to be strengthened through orientation, hand holding, capacity building etc. It is observed that more prominent industries have more access to capacity and capital to make changes than MSMEs.

**3. Perception of the credibility of the industries by authorities and vice versa:**

While the industry stakeholders recognize that a few defaulters exist, aggregating all the other industries as defaulters can be humiliating. The industry believes that this bias is widespread, and fines imposed can reflect this. Smaller industrialists face longer prison sentences and harsher punishments than larger industrialists or those with political clout. Penalties should be determined by the market value of the industry in question. Industrialists, on the other hand, are often the most affected by corruption and a general perception that any job that must be done through a government agency demands some hidden charges.

**4. A co-financing model for betterment of environment:**

Revenue collected by the government from industries needs to be reinvested to improve the environment of the industrial zones where the revenue is generated. Industries generate income, and there is a need to reinvest a portion of the same for the environment of the industrial zones. A co-financing model should be explored that will help garner support to improve the state of the environment in-and-around the industrial zones. It was suggested that upfront subsidies need to end or be avoided. They can take the shape of incentives (such as tax benefits) after complying with the rules and regulations.

**5. Service provider for improving industrial waste management:**

Governments are requested to arrange for the engagement of approved service providers if waste management is not up to standard and payment of the services will be met by the industry.

**6. Accountability:**

The concerned Government agencies may need to take the responsibility to manage the POPs. Those responsible for ensuring enforcement should also be held accountable to the same standards if the duties are not appropriately discharged.

## 7. Alternatives to banned chemicals:

Finding available and affordable alternatives to industrial POPs are a big challenge. The POPs which are used in automotive sector do impact as the alternatives are either not available or too costly.

## 8. General Issues:

i) Need to improve collaboration of industry and academic institutes as lack of capacity is a major constraint. There are inadequacies of trained manpower, technical capacity, knowledge base for handling and management of POPs particularly at the medium and small town/cities. The aforesaid shortcomings pose major challenges in the regime of POPs management in the country.

ii) Patent registration of new non-hazardous alternatives is too long, and the incentive to do so is also low<sup>3</sup>.

lii) Permissions for renewal, change of process, shifting to updated techniques must be granted faster and within a specified time frame.

iv) Several factors limit implementation and adoption:

- It usually is capital intensive, which is a hindrance for most MSMEs;
- Know-how is limited;
- Alternatives are not readily available

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<sup>3</sup> [https://ipindia.gov.in/writereaddata/Portal/Images/pdf/Final\\_FREQUENTLY\\_ASKED\\_QUESTIONS\\_-PATENT.pdf](https://ipindia.gov.in/writereaddata/Portal/Images/pdf/Final_FREQUENTLY_ASKED_QUESTIONS_-PATENT.pdf)

### Chapter-3 Outcome of the Gujarat Consultation report

In the series of interaction with several categories of stakeholders on 25<sup>th</sup> February, 2022 Toxics Link convened a brainstorming meeting in Ahmedabad to understand the issue in the region. The representatives from Gujarat Pollution Control Board, Gujarat Industrial Development Corporation, leading chemical manufacturers, civil societies, and research labs based in Ahmedabad attended the meeting to discuss the views on policies, practices and implementations challenges of rules and Regulations in Gujarat. They are summarized below:

- Mr. Devang Thakkar, Environmental Engineer, Gujarat Pollution Control Board, discussed about the guidelines on POPs and other chemicals. Mr Thakkar said that the global actions on hazardous chemicals help establish sustainable growth. Good coordination is the need to help each other set a mechanism to create a forum to understand the issue and consolidate each stakeholder's view. He had shared his experience when Endosulfan and Polychlorinated Biphenyls (PCBs) got banned in the country. GPCB had met with the concerned departments as well as the industries, and had offered common incinerators, and made efforts in capacity building.
- Mr. Thakkar also shared his experience while implementing the Restriction of Hazardous Substances (RoHS) Directive in late 2005. It has paved the way for 'Zero discharge of hazardous chemicals' in Gujarat and led to a shift in mindset toward safer chemicals. He informed that GPCB has a lab facility for testing Dioxins and Furans and helping industries set up regular annual testing of their incinerators to follow the norms related to Dioxins & Furans. He further informed that **GPCB is planning to meet all concerned industries & developing a roadmap to tackle the ban on new POPs.**
- GPCB has suitable common incinerators regularly monitored for all parameters and industries to follow correctly. In addition, GPCB is encouraging co-processing, which has reduced the burden on incinerators.

#### Challenges faced by industries in Gujarat:

- **Mr. Prakash M. Patel**, General Manager of Meghmani industry, informed that they mostly come to know about ban of a chemical or any notifications through the newspaper. **Mr. Mahesh Pandya** from Paryavaran Mitra added that in the newspapers, the government doesn't release notifications. Still, it is just news that the readers miss, especially the concerned industries. **Mr. H.B. Prabhakar**, a representative from Gujarat Industrial Development Corporation, informed that industries generally get to know about the ban, especially on the global platform, when their products get rejected from the EU market.

- When chemicals get banned, industries send products to treatment, storage, and disposal facility (TSDF) for disposal, while raw materials are used to manufacture other products. They even have their R&D facility where they work to use raw materials for modification. **Mr. Prakash Vaghela**, E.Coli Waste Management Pvt Ltd., stated that government should inform concerned associations so that industries get updated as it is easy to utilize raw materials from day one. Still, once the products are manufactured, like flame retardants, and plastic items, they cannot be disposed-off, or the government must provide time to sell off those products, and in the future, such products should not be allowed.
  
- The concerned departments and personnel handling banned chemicals are generally not aware of the properties of chemicals or the basic know-how of handling. Typically, industries are getting a license or clearance for five years. In the case of some chemicals getting banned during that period, they don't get information and continue their production until further extension, usually when they come to know about such global or national bans, it is very late as they would have invested a lot of resources.

## Chapter-4 Observations and recommendations:

The report highlights the the need for collective efforts by all stakeholders on the appropriate management of chemicals and recommends some measures while formulating environmental policies and regulations;

- Development of roadmap whenever ratifying new chemicals; although the government is investing so much in establishing advanced incinerators, TSDFs are not suitable for disposal of all types of chemicals.
- GPCB should approach all the manufacturers for the inventorization of banned chemicals. The upcoming Chemical Safety and Management Rules may provide some logistical support in that regard.
- Personals from local bodies are not aware of the recent developments and suggested that the government should discuss with the concerned stakeholders before ratifying such treaties.
- Improvement in identification, registration, prioritization, management, and adequate disposal of stockpiles
- Effective and periodic dissemination of new rules and regulations to the affected stakeholders, using appropriate channels of communication
- Regular monitoring of POPs is required in various environmental matrices and bio-monitoring of the same to develop state and country-specific scientific data.
- Studies should be encouraged on the degradation of persistent chemicals according to the environmental condition and ecological situation of India.
- There is data unavailability for recycling of POPs and potential leakage to the environment, it is imperative for researchers to generate scientific data to fill the gap
- Based on the scientific data, the guidelines on what can be recycled, under what conditions and what cannot has to be prepared
- The Industries have to take the responsibility to identify and provide alternatives.
- The POPs Monitoring and evaluation guidelines need to be penned down by the scientists.
- Gap analysis of the existing Indian regulation about SC concerning content under the hazardous rule is different.
- Proper guidelines should be framed.
- NIP should be updated to know the status of POPs at the national level. This should be for both old and new POPs
- Monitoring of POPs and the cost involved should be adequately provided.
- Training should be imparted to officials of CPCB and SPCBs dealing with POPs and strengthening laboratories of CPCB/ SPCBs where these chemicals are stored/used/manufactured
- SPCBs officials should be imparted training to implement or identify the banned POPs while issuing Consent to operate (CTO) to the industry, i.e., under the consent mechanism.

- Enhanced participation of industries and industrial associations. Industries are not getting any guidance or help, although they want to be updated and accepted globally.
- Chemical Industries are frontline stakeholders but they only get response when the SPCBs and other authorities question the industries
- Industries have important role to play but lack of awareness and wrong priorities affects the sustainable chemical use
- Increase outreach and awareness generation for all stakeholders, especially the general public and consumers.
- Development of Information, Education and Communications (IEC) activities along with research and analysis facilities should be undertaken at the central level.
- Both national and international agencies must take up the coordinated actions for capacity building for stakeholders with education, training, and multimedia campaign by disseminating information and hand-holding.