

T O X I C S DISPATCH



Toxics Link
for a toxics-free world

A newsletter from Toxics Link

Number 43 | May, 2014

FOR PRIVATE CIRCULATION ONLY

ENGAGING FORMALLY WITH THE INFORMAL SECTOR

“Ye kaam nahi karunge to bhookhe mar jayenge” (If I don’t do this work, then we will die of starvation) – when Ram Shankar told me this during one of my visits to his unit in Mandoli (a small village just outside Delhi), he probably echoed the sentiments of most workers who process E-waste in and around Delhi informally. Risk of poisoning and subsequent health impact versus loss of livelihood and resulting starvation- the choice is very clear for the huge informal workforce, mainly migrant, who depend on this toxic waste for their daily sustenance. For them this waste is a resource, feeding their families who at times also join them in breaking down, heating or openly burning E-waste to recover valuable materials.

Value of E-waste, which is now being hailed as ‘secondary mine’ world over, was recognised by the uneducated waste pickers and dealers long back in India and

in some developing countries across Asia and Africa. But there have been moves to formalise the whole chain, the reason being simple- the health and environmental impact due to unsafe and rudimentary practices used for recycling by this sector.

E-waste (Management and Handling) Rules 2011 came into force in May 2012 in India and is expected to usher a new environment for safe management of E-waste and change the existing practices. With Extended Producer Responsibility at the core of the Rules, producers of electronic and electrical equipments are now responsible for proper collection and recycling of their end-of-life products. The producers or brands are mandated to create new systems for collection of post-consumer waste and ensure safe disposal through appropriate technologies for protecting human health and environment.



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Toxics Dispatch No 43

EDITORIAL

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The new law can have far-reaching implications for the informal sector which is suddenly finding a shortage of materials as the rules do not permit waste flow into the informal settings. In spite of the availability of skilled labour force in the unorganised sector, the regulatory framework and the emerging system for E-waste management in the country, it is not making any special provisions for including this labour force. The serious implication is loss of livelihood for millions of workers who informally recycle or process E-waste. Is this the only way ahead – do we have to choose between environment and livelihood or can they go ‘hand in hand’? The answer probably is simple as well as complex.

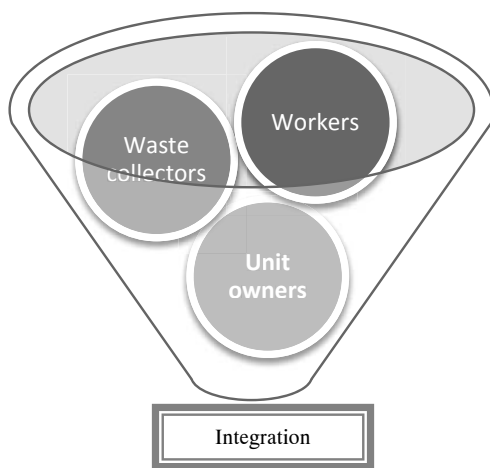
The current scenario of E-waste management indicates that the Producers are finding it difficult to set up systems to reach the end consumers, probably owing to the huge size of the country and the need to make take-back or collection convenient to the consumers, especially individual consumers. The expectations of consumers for a financial incentive for the Electrical & Electronic Equipment (EEE) discard also does not appear very feasible to the Producers, as they think there is not much money in recycling after taking into account the cost of logistics. Formal recyclers’ complain of plants running below capacity, is also indicating absence of good collection system. On both accounts of collection network and economics, the informal sector, which was managing the waste till date, never had a problem. They were never short of material and reached out to every office, household or individual, paying the consumers for the smallest of E-waste. Though the producers or recyclers today are able to reach out to the bulk consumers to some extent, they have failed in setting systems for individuals. So, what was the unorganised sector doing differently and can that be the solution for a way ahead?

The unorganised sector has great potential to organise door-to-door collection keeping the costs low, cannibalise material and reduce waste destined for disposal. It is interesting to understand that the informal sector operates on smaller margins of profit, keeping their overheads low and optimising on volumes, thus making their units economically viable and effective. However, as mentioned earlier, its operation is failing to meet the health and environmental safety standards. One way to change this is the informal sector integration. The formalisation of the informal e-waste recycling sector into a transparent system can address two important bottlenecks in e-waste management- getting more e-waste in the clean channel, keeping logistics costs low and reducing adverse impacts on human health and environment.

Hence, bridging the formal and informal sectors to create a more effective and appropriate E-waste management infrastructure is the need of the hour. The overall goal for such integration should be to build and foster better functioning, more inclusive and socially sustainable management system. Given the heterogeneity of the informal economy, it is difficult to look at just one way of integrating them; there may be several possibilities.

Experiences from across the world on waste management systems and India’s requirements suggest the following possibilities-

- **Kabaddiwalas as collection agents-** The individual waste collectors could be issued identity cards by the producers or



New e-waste management system informal sector players and integration

their collective, collection agencies and recyclers and dismantlers for whom they can act as collection agents. For producers, who are struggling to reach to individual consumers and small business, this would mean expanding their reach and getting back E-waste from the remotest and the smallest of the consumers.

- **Waste collectors as collection agency-** This could be in the form of a cooperative or a profit-making company with many partners. The group would then need to get authorisation from the concerned authorities (State Pollution Control Boards) for collection.

- **NGO + Waste collectors' alliance-** The waste collectors could be linked to a community based organisation or an NGO. There are many advantages of this form of alliance, the biggest being focus on health and environment. Involvement of a community based organisation also ensures more credibility, especially when one is approaching larger companies or offices for waste.
- **Dismantling associations-** The creation of an association or small business that comprises different informal e-waste dismantlers is one possibility towards achieving formalisation of the informal sector stakeholders. In this model, some of the dismantling unit owners or small establishments (depending on geographical proximity or operational similarity) can come together to form alliances and establish the desired structure.
- **Refurbishment business-** Reuse of components and refurbishment, if done in proper way, is environmentally sound as it increases the life of a product and also cuts down the energy required to make a new product. The informal sector has the skills to carry out such operations in large scale.

In the integration of the informal sector, government, civil society organisations and industry have a large and vital role to play. Need for training and upgrading their practices to eliminate the health and environment risks will not only benefit this sector but also benefit the society at large. Acceptance of their role and encouragement through supportive policies and incentives can go a long way in bringing this huge network under a clean and transparent umbrella. May be this sector is the missing piece of the clean E-waste management jigsaw puzzle that we are struggling with.

And then no Ram Shankar will have to make that choice!

If you have any suggestions or models for integration of Informal sector, do write in to us with your comments and ideas.

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FEATURE

ENDOCRINE DISRUPTING CHEMICALS: AN EMERGING HEALTH ISSUE

The modern life style is largely dependent on man-made chemicals which have become an integral part of our life. Due to scientific innovation every day new chemicals are entering the market. However some of these chemicals have been found to be highly toxic and can adversely affect the endocrine (hormonal) system of both human and wild life. During the 90s, various research studies have found the impact of chemicals on the development of endocrine gland. These chemicals have been termed as Endocrine Disrupting Chemicals. It was in 1991 at Wisconsin the term 'endocrine disruptor' was coined at Wingspread Conference Centre. However, in 2002 the International Program on Chemical Safety (IPCS) recognized that the issues of EDCs need to be taken seriously.

The endocrine disruptor has been defined as an "exogenous substance or mixture that alters function(s) of the endocrine system and consequently causes adverse health effects in intact organisms or its progeny or populations".

Chemicals acting as Endocrine Disruptor

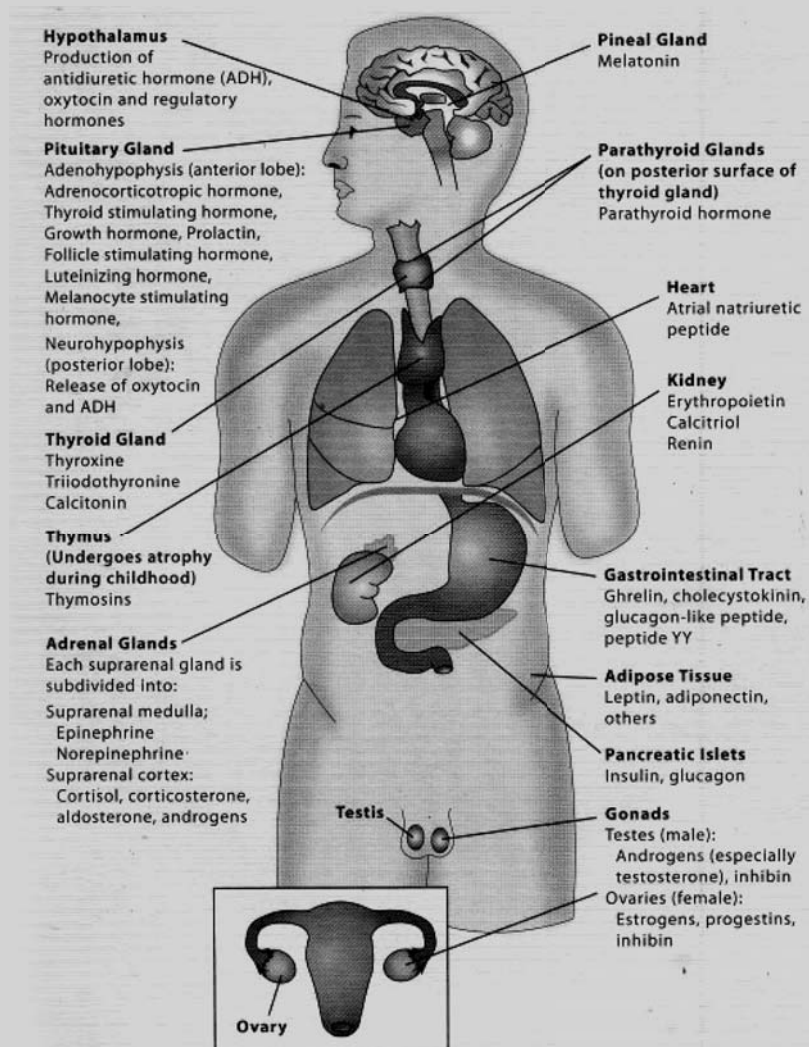
Endocrine systems are essential features of most of the animals. The endocrine system consists of glands that secrete hormones, and receptors that detect and react to the hormones.

Hormones travel throughout the body and act as chemical messengers. Hormones interface with cells that contain matching receptors in or on their surfaces. The hormone binds with the receptor, much like a key would fit into a lock. The endocrine system regulates adjustments through slower internal processes, using hormones as messengers. The endocrine system secretes hormones in response to environmental stimuli and to orchestrate developmental and reproductive changes. The adjustments brought on by the endocrine system are biochemical, changing the cell's internal and external chemistry to

bring about a long term change in the body. These systems work together to maintain the proper functioning of the body through its entire life cycle. Hormones work at very small doses (part per billion ranges). Endocrine disruption can thereby also occur from low-dose exposure to exogenous hormones or hormonally active chemicals that can interfere with receptors for other hormonally mediated processes.

Studies have found that people are exposed to chemicals with estrogenic effects in their everyday life, because endocrine disrupting chemicals are found in low doses

in thousands of products. Generally EDCs are present in many classes of chemicals both manmade and natural including PoPs, pesticides, phytoestrogens, metals, active ingredients in pharmaceuticals, and additives or contaminants in food, personal care products, cosmetics, plastics, textiles and construction material. Some of the common chemicals designated as EDCs are DDT, polychlorinated biphenyls (PCB's), Bisphenol A (BPA), polybrominated biphenyl ethers (PBDE's), and a variety of phthalates.



Impact of EDCs on Human and Wild Life

Until 2000 there was limited research on the exposure of EDCs on human health. After IPCs in 2002, there was a shift of approach in investigating associations between adult exposure to EDCs and disease outcomes to linking development exposures to disease outcomes later in life. And it was found that exposure to EDCs during the fetal development and puberty plays a significant role leading to increased incidences of reproductive diseases, endocrine-related cancer, behavioral and learning problems including ADHD, infections, asthma and perhaps obesity and diabetes. The EDCs have also been associated with worldwide loss of species or reduced population many amphibians, mammals, birds, reptiles, freshwater and marine fishes and invertebrates.

International Policy Developments on EDCs

At its third session in 2012, the International Conference on Chemicals Management (ICCM) of Strategic Approach to International Chemical Management (SAICM) considered the issue of endocrine disrupting chemicals as a new emerging policy issue and agreed on the text of the Resolution to address the issue. In this resolution, the ICCM called upon the participating organizations of the Inter-Organization Programme for Sound Management of Chemicals (IOMC) to develop a plan of work for cooperative actions on endocrine-disrupting chemicals.

In 2013 a work plan was developed on EDCs and contained actions for the UN Environment Program (UNEP), the World Health Organization (WHO) and the Organization for Economic Co-operation and Development (OECD) in the areas of: providing up-to-date information and scientific expert advice to relevant stakeholders for the purpose of identifying or recommending potential measures that could contribute to reductions in exposures to or the effects of EDCs, in particular among vulnerable populations; raising awareness and facilitating science-based information exchange, dissemination and networking on EDCs; providing international

support for activities to build capacities in countries, in particular developing countries and countries with economies in transition, for generating information and for assessing issues related to EDCs in order to support decision-making, including the prioritization of actions to reduce risks; and facilitating mutual support in research, the development of case studies and advice on translation of research results into control actions.

India and Endocrine Disrupting Chemicals

India is one of the emerging markets of the world and with opening up of the economy many new products are entering the market. However in India the regulatory regimes to deal with the chemicals are weak and there are many products containing potential EDCs which are already being circulated in the market. In 2013 -ICCM-3 (SAICM) the countries unanimously adopted EDCs as an emerging issue and detail plan of action has been developed to tackle the problem of EDCs. India Government is a signatory of Strategic Approach to International Chemicals Management (SAICM) however, the awareness and information on EDCs is very low in the country. There is also no information available in the public domain on the impact of EDCs. The issue of EDCs has been accepted as a global issue and has taken a central stage for policy developments in many countries. Thus, considering the health of the citizens particularly the children who are more prone to EDCs, India needs to come up with a clear action plan in lieu with the global action plan so that issues can be addressed appropriately.

Sources:

1. *State of the Science of Endocrine Disrupting Chemical- 2012*
2. http://www.wecf.eu/download/2012/April/IPENPositiononEDCsasSAICMEmergingIssue_Final.pdf
3. http://www.saicm.org/index.php?option=com_content&view=article&id=458&Itemid=687

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THE SLOW POISON CALLED LEAD!

Could lead (pb), a heavy metal, have caused the fall of some of the early civilizations, particularly the Roman Empire? At least that is the theory proposed by researchers' decades ago.

Reason for this theory!

Well, lead, in various forms was in wide use by many early civilizations. It was used to polish pottery as it gave shine and texture to the utensil. It was used to build plumbing pipes which was widely used in the Roman era. Moreover, the sweet taste of lead made it a good additive for fine Roman wine that was then shipped all over Europe. All of these were agents of lead entering the human body, causing lead poisoning.

In modern times, it was used in gasoline for years to improve the combustion characteristics of gasoline. Later it was found in plastic and PVC toys which children just love to chew upon. In 1904, lead-paint was linked to childhood lead poisoning. Reasons for adding lead to paints –it improves the texture and durability of the product and also adds glaze to the paint.

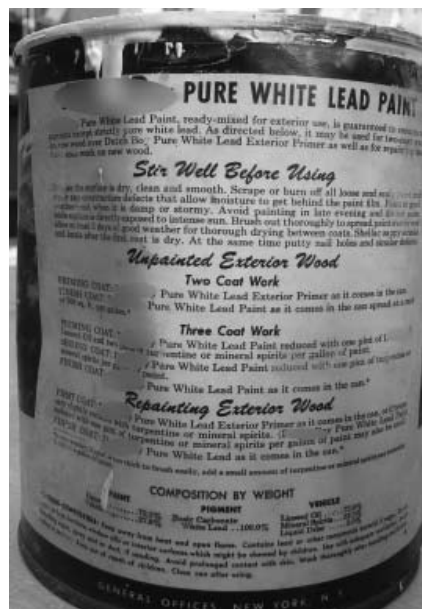
Once the harmful effects of leaded gasoline became widespread, all countries shifted to lead free gasoline.

However, what many are still not aware of is that lead in decorative household paints is the unknown silent killer, having serious adverse impacts on public health especially among children between the age group of 0-6 years. Especially the sweet taste of lead makes it very tempting for children to lick the walls or chew the paint chipping from the wall.

Lead (Pb) is a well-known neurotoxin which damages, destroys or impairs the function of the nervous system. It hinders the neurological development of the child resulting in low IQ, increased irritability and loss of concentration.

As soon as lead-based paints were linked to childhood lead poisoning, several European countries banned the use of interior lead-based paints in 1909. In 1922, the League of Nations banned lead-based paint but the United States declined to adopt this rule. In 1943, a report concluded that children eating lead paint chips could suffer from neurological disorders including

behavior, learning, and intelligence problems. Finally, in 1971, lead-based house paint was phased out in the United States with the passage of the Lead-Based Paint Poisoning Prevention Act.



However, in India, the use of leaded household paints is still prevalent and widespread. Big paint companies, which have a market share of 65%, have voluntarily shifted from lead to lead free formulations of decorative paints. The problem is with the small and medium enterprises (SMEs) which hold 35% of market share.

As for policies or standards on lead in paints in India, Bureau of Indian Standards, the National Standards Body, had formulated standard for lead in paints in 1950 which were fixed at 1000 ppm (parts per million). Years of campaigning by non-government organizations led to the revision of the standards to 90 ppm. However, they still remain voluntary.

The question remains that when the medical fraternity is in complete agreement with the severe health effects of lead in paints, then why is it still being manufactured? Why is the industry still manufacturing and supplying this deadly product in the market? A product which has healthy alternatives available. Why is the government still hesitant to make these standards mandatory?

For how long can we allow them to gamble with the lives of our children!

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WASTE WATER TREATMENT IN HOSPITALS

Hospitals discharge considerable amounts of chemical and microbial agents through their waste waters. A variety of chemicals present in hospital waste water constitutes a varied set of challenges for the health care sector and the environment in general. Hospital effluents constitute antibiotics, X-ray contrast agents, disinfectants and pharmaceuticals. Many of these chemical compounds resist normal waste water treatment. Besides recalcitrant and potent chemicals, hospitals discharge plenty of potentially pathogenic antibiotic resistant bacteria and viruses.

The waste water coming from operation theaters, labs, microbiology department, oncology department etc. should be treated separately before mixing it with other domestic and non hazardous effluents from the hospital.

In the last few years, increasing attention has been paid to the presence of emerging pollutants in surface and groundwater such as surfactants and pharmaceuticals as their sales are continuously increasing. A lot of research has been done across the globe ascertaining the hazardous nature of hospital effluents. In this context, it is imperative that improvement of the hospital effluent waste management receive increasing attention in our part of the globe as well.

Standards for Liquid Waste:

The effluent generated from the hospital should conform to the following limits as per the Bio Medical Waste (Management & Handling) Rules, 1998



Parameters (permissible limits)-

PH	-63-9.0
Suspended solids	-100 mg/l
Oil and grease	-10 mg/l
BOD	-30 mg/l
COD	-250 mg/l

Bio-assay test 90% survival of fish after 96 hours in 100% effluent.

(These limits are applicable to those, hospitals which are either connected with sewers without terminal sewage treatment plant or not connected to public sewers. For discharge into public sewers with terminal facilities, the general standards as notified under the Environment Protection Act (EPA), 1986 shall be applicable.

Although most of the hospitals in Delhi have a system in place for the treatment of effluents generating from their facilities in the form of Sewage Treatment Plants, very few of them operate it in optimum conditions. It was revealed through a series of RTI's filed to government hospitals in Delhi that most of them do not make use of the Sewage Treatment Plants which were installed at huge costs leading to a waste of public money along with putting the population at risk of various infections.

If you go beyond the state of Delhi, which receives a lot of attention from multiple regulatory agencies, the situation is even bleaker. Most of the concerned authorities are in a state of denial regarding this issue.

There is an urgent need for research and discussions among the concerned stakeholders in these aspects because the lack of it would mean that we are waiting for a health disaster to respond to this issue. It will be a good investment from the point of view of public health and the environmental sensitivity to be pro-active on the issue.

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UPDATES

ENLIGHTENING ONE CAN ENLIGHTEN MILLIONS!

Today the environment suffers under the growing demands of production and human consumption. As population increases and resources are depleting, there are debates around sustainability of this whole process. Greater environment sensitivity and stewardship is required to counter this and change the unsustainable trend.

One of the biggest challenge is how to educate the public, create an understanding of the environmental issues and stress on the imperative need for change. Educating the youth or student community can be a way forward. It is easier to create sustainable habits and thoughts among youth since they are at a formative age and are looking at ideas and principle which will become the backbone of their life. Environmental education of children can be powerful and effective for fostering change in attitude and practice essential for real improvement.

E-waste is a critical issue facing India today. With rapid technological advancement and growing obsolescence rate, the country is saddled with huge generation of this new stream of waste. The key concern is poor management of this toxic yet resourceful waste; resulting in health as well as environmental problems. Low awareness has been seen as one of the major reasons behind lack of public participation in sound E-waste management.

In an endeavor to sensitize the public on the issue of environmental conservation a joint programme between Nokia and Toxics Link was launched called the NOKIA "Planet Ke Rakhwale", School Awareness Campaign. Children were the focus of the campaign because they are believed to be "agents of change" with the power to influence parents and promote awareness among neighbors.

The school programme covered 12 states across India and workshops have been conducted in 1,900 schools to sensitize the children on e-waste and benefits of recycling in the year 2011-2013. The



programme covered 2,37,875 students and 9,170 teachers. The school programme also helped us in creating capacity at ground level. Around 100 people were trained to be facilitators and gained knowledge on the issue as well as organizing such campaigns.

The campaign has been successful in terms of initiating an immediate thought-process on the benefits of recycling and increasing general awareness on environmental challenges. The campaign also offers

an opportunity to the students to dispose their E-waste in appropriately as temporary E-waste collection bins are installed in the schools.

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THE SILENT KILLERS- DIOXINS AND FURANS

Dioxins and Furans, a group of one of the deadliest Persistent Organic Compounds known to cause endocrine disruption and diseases like cancer, happens to be the most difficult chemical to mitigate. The Stockholm Convention on Persistent Organic Pollutants, an international environmental treaty (signed in 2001 and effective May 2004), which aims to eliminate or restrict the production and use of POPs, categorizes dioxins and furans as a part of the first twelve Persistent Organic Pollutants (POPs), 'the Dirty Dozen'.

The biggest challenge to mitigation is their nature of production and their highly persistent character. Dioxins are produced unintentionally in various industrial processes such as waste incinerations, ferrous and nonferrous metal production, heat and power generation, production of mineral products, transportation etc. Uncontrolled combustions like forest fires/open burning of wastes/accidental fires etc also contribute to dioxins release. All these sources of dioxins / furans are present in India and as per estimates (National Implementation Plan of India, 2011), 8656.55 gTEQ of Dioxin/Furan is released annually. Western & Central region are the major contributor to annual release of dioxins. The emission standard for dioxins set by CPCB in 2003 is 0.1 ng TEQ/Nm³ which is similar to the European Union standards.

India ratified the Stockholm Convention in 2006 and the convention came into force from April 2006. Hence as a signatory to this international treaty and considering the wellbeing of environment and people, India needs to make efforts towards reduction and elimination of dioxins and furans. While broad estimations have been done for



these molecules, there is a need to devise a comprehensive strategy for their mitigation that would involve all stakeholders.

Apart from devising suitable policies and ways for implantation, building capacity and providing best available technical solutions for mitigation, one of the major tasks is to create awareness regarding the dangers of dioxins and furans that surrounds all of us in our vicinity. The NIP 2011 also stresses on building awareness across stakeholders and citizen groups for better understanding on the issues that would help to find ways for an ecologically sound management of dioxin and furans in the near future. As yet, the issue has not drawn adequate public attention. Capacity and awareness level is also poor.

In the above backdrop and keeping in view India's commitment towards global treaties, Toxics Link in association with ALMANAC Mumbai organized

a stakeholder's meet in Mumbai. The meeting was attended by Municipal Committees Members, waste technology companies representatives, Industries, civil society and the media. The objective was to promote effective monitoring & management system and to develop strategy & road map for future actions.

Some of the key suggestions which came forth from the discussion were:-

- Waste segregation practices should be promoted at household level.
- Municipality should create awareness program and should follow waste segregation practices.
- Open burning of wastes should be discouraged.

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SOLID WASTE MANAGEMENT – AN INDIAN MAYHEM

India is taking leaping strides in the era of globalized capitalism with frenetic urbanization, modernization, economic growth, and an upsurge in living standards. The Indian cities today are hued in a unique blend of history, modernity, industrialism and incredible cultural diversity.

Behind the gloss and glare of the Indian cities lies a sour truth ignored by many. On the flip side of this progress lies the burgeoning waste – the streaming mountains of debris and stench of trash and refuse, with innumerable vultures and eagles swirling around, ready to dart down on the stinking

pile. It goes unstated that greater prosperity, capitalism, consumerism, population growth and the steadfast urban & industrial developments have served as an impetus for the increasing waste generation across the cities in India. According to a research paper by Nature (October 2013), South

Asia and “mainly India” — will be the fastest growing region for waste generation in the coming 12 years.

Despite the staggering and ubiquitous waste scarring the gleaming cities, waste management systems in India is lurching in infancy. Until late 1990s the country lacked any national legislation on urban waste management, it was only in 2000 that the country formulated the Municipal Solid Waste Management Rule. These rules were enacted as one of the legislation under the Environment Protection Act (EPA) 1986.

Although the rules outline the responsibility of different authorities and provides guidelines for dealing with different aspects of management, treatment and disposal of waste, it has shoddily failed to serve the very purpose. Paradoxically, even after 13 years of the rules coming into force little has been accomplished on ground. Recently, the MSW rules 2000 were amended with a draft version of these amendments in the public domain for comments and objections. Regrettably enough, neither the Rule nor the amendments made, are in tune with the preamble of EPA and appears to be rather regressive.

To add to the dismay the amendments heavily encourage the private players; it stresses on Waste to Energy technologies without any specification standards. Despite the growing impedance from environmentalist, academicians and the civil society on the severe environmental health implication the waste to energy technology has been endorsed in the Rules. Also there is no mention of household hazardous waste like medical waste, batteries and informal recycling.

Solid Waste Management in India is understood as door-to-door collection to the dumpsite to transportation either to waste treatment plants or landfill site. Most of the standards prescribed in the rules are in relation to waste treatment facilities and landfill sites. Managing solid waste effectively can reduce their adverse impact on environment and human health. However, the issues of environmental health and social justice are vehemently glossed over and pushed to the walls.



Along with the formal system in the chain of waste management, there also exists an informal system which is primarily the waste pickers. In a city like Delhi the informal waste picking is responsible for collecting 15- 20% of the waste, which however is not recognized by the system, adding to the grim reality of the sagging waste management system. Although they form an integral part of the prevailing waste management system they are facing a sense of annihilation from the system which neither gives social power nor social security.

Further, management of Municipal Solid waste has been long perceived as the responsibility of the Municipality alone, with other actors playing a marginal role. Efficient management of solid waste is a pertinent issue and requires serious and long term efforts, it is in this light that Toxics Link organized a stakeholder's workshop on “Sustainability Framework for Municipal Solid Waste Management: A Case of Delhi” . The workshop was a part of a project titled “Pathways to Environmental Health: Moving between Formality and Informality” jointly undertaken by STEPS Centre (University of Sussex), Centre for Studies in Science Policy (Jawaharlal Nehru University) and Toxics Link.

The workshop sought to address solid waste management through the perspective of sustainability and address environmental and health concerns emerging from improper dumping of the waste. The need of the hour is to understand and address waste management from the perspective of environmental health which implies minimizing environmental risks and increasing social justice. Further, the municipality needs to be made more accountable by creating stringent monitoring mechanisms. The fact that waste pickers form the backbone of the recycling sector by collecting a major chunk of the waste generated makes it imperative to evolve an institutional mechanism for integrating waste pickers with the formal system of waste management.

Also, the absence of appropriate facilities and infrastructure required for safe disposal and recycling of waste needs to be addressed. The workshop provided a platform to pave ways to help and alleviate the growing waste crisis which requires a comprehensive and holistic approach.

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MERCURY- AN UNSTOPPABLE MENACE

Mercury is one of the most toxic heavy metals on plaguing our planet Earth. It is recognized as a substance producing significant neurological and other effects, with concerns about its effect on unborn children and infants. Governing council of UNEP took this issue in 2003 and invited their executive director to do global assessment of mercury. After it was found that mercury has significant effects on human health and environment, the council took the decision of making a legally binding treaty to address the problem of mercury pollution in the environment in 2009. Finally, the treaty was signed on 10 October 2013 at a Conference of Plenipotentiaries (Diplomatic Conference) in Kumamoto, Japan.

Since its adoption, 94 countries have already signed the treaty and India might also sign it soon. It will come into effect after a gap of 90 days post its ratification by 50 countries. The convention will have a far reaching impact on the regulations of mercury in the cross cutting ministries of the country and the role of regulators will be of critical importance and hence it is important to understand and examine all aspects of the convention and its resultant impact on environmental governance.

In this context, Toxics Link in association with the Central Pollution Control Board organized a regulators meet at India Habitat Center, Delhi. The objective of

this meet was to get a better understanding of the convention and the role of some of the concerned institutions in shaping the future actions and responsibilities. The meeting was also based on the research outcome of a mercury management road map study, by Toxics Link. The need to bring in all the stakeholders and their involvement and responsibilities were also discussed in great detail. The meeting was meant for introducing the Minamata Convention and various sector specific requirements which has been highlighted in the treaty text.

The regulators from thirteen state pollution control boards from across the country (Jammu & Kashmir, Goa, Madhya Pradesh, Himachal Pradesh, Tripura, Odisha, Gujarat, Haryana, Karnataka, Uttarakhand, Bihar, Punjab and Delhi) and members of the Central Pollution Control Board attended the meeting. The key speakers from the Ministry of Environment & Forest (MoEF), Govt. of India (Director & Additional Director); Toxics Link and Ministry of Health & Family Welfare (MoHFW) talked about the various Articles of the Convention. All the



State Pollution Control Boards shared their experiences and challenges which they may face after the convention is signed by India.

The key issues discussed were the various articles of the Minamata Convention and the possible action plan. This workshop also proved to be useful in testing the roadmap document for key actions and recommendations. Most regulators attending the workshop were in agreement with the suggested steps as articulated in the document. Toxics Link has also initiated talks with the other state machineries to take forward the initiatives of making the country mercury free.

Mohit Bhatiya

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INTERVIEW



"We cannot rely on government led enforcement. The possible answer is citizen led enforcement" - Ritwick Dutta

Ritwick Dutta is an environmental advocate with the Supreme Court of India and holds a graduate degree in Sociology, an LLB from the University of Delhi and a diploma in Environmental Law from The Centre of Environmental Law, WWF-India. He set up the Legal Initiative for Forest and Environment (LIFE) in 2005 to fight for environmental democracy. He is also a member of the Environmental Law Alliance Worldwide (ELAW), a select global network of environmental lawyers. He has fought destructive projects (often approved using falsified Environment Impact Analysis reports) and has also campaigned for increased public consultations in Protected Areas, particularly where dam and mining projects are concerned.

Mr. Dutta in interview with Prashanti Tiwari (Toxics Link) talks about how Mining Industry today is posing an unprecedented environmental challenge.

Q. 1. Rampant mining is an impending challenge in India. How does illegal mining and dreading activity impact our environment?

Mr. Dutta: The issue is about both legal and illegal mining. The manner in which mining projects are approved both by the Ministry of Environment and Forest as well as the various State Impact Assessment Authorities, it is clear that even if mining is legal the same is being done without proper studies. Mining should be the last use of any land, unfortunately, the way it is projected by the mining companies as well as

the government, an impression is created that it is the best possible use of land. The environmental impact of mining is clear to most, however what is important to realize is that mining has impact on governance and the rule of law. The Report of the Lokayukta of Karnataka, the Justice M.B Shah committee has clearly exposed the nexus which exists among the mining companies, bureaucrats and politicians.

Q. 2. Do you think that the government has failed to inculcate the aspects of human rights and ecological safeguards in the ambit of the Mining Industry?

Mr. Dutta: The Government has only focused on the positive sides of mining without any concern for either ecological or human rights issues. The environmental and human rights issues get covered under the tag of 'corporate social responsibility' which to say the least is a farce.

Q. 3. Illegality, fraudulence and corruption largely dominates the mining sector today. What has spurred the pervasive mining across the country?

Mr. Dutta: High profits, no accountability, poor enforcement mechanism, right from the state forest and mining departments to MoEF and the Indian Bureau of Mines are responsible for the growth of the mining industry. The profit margins are very high. In case of Karnataka it was revealed that whereas the mining companies exported iron ore at about 6000 Rupees per ton, the State earned a royalty of Rs 6 per ton. The people and the state got really nothing in return and yet it has been projected that mining is development.

Q. 4. How can the fudging of data and Environmental Impact Assessment Reports be addressed?

Mr. Dutta: It is possible by being vigilant and people taking the EIA consultants to court and initiating criminal proceedings. Any EIA consultant found concealing factual data should be immediately delisted.

Q. 5. Many tribes are reeling under the threat of Mining Sector. How is mining affecting their survival?

Mr. Dutta: The negative impact of mining is well known. In addition to direct displacement, the whole livelihood sources are compromised. The Human Development Index clearly shows that the mining areas in India are the most backward in terms of all social indicators.

Q. 6. Do you think that ecology is suffering at the altar of economy – as far as mining is concerned?

Mr. Dutta: There can be no two opinions on this. Most of the mining is taking place in Forest land and the impacts are just not limited to the mining areas but goes far beyond it. Ground water is depleting, rivers are poisoned, and agricultural fields are laden with dust. The mining industry has been too powerful and has managed to hoodwink the people at large about the 'benefits' of mining. The mining sector in order to create a larger support base is today supporting political parties as the recent example of Seas Goa and Vedanta support for both the Congress and the BJP. Unfortunately, even leading environmental NGO's are taking support in the form of advertisement from the mining companies.

Q. 7. The mining sector is integral to economic growth and development. How can one strike a balance between ecology and development?

Mr. Dutta: I don't agree that the mining sector is integral to economic growth. If it was so Jharkhand, Orissa and Chhattisgarh should have ranked high in social indicators. Mining has only bred poverty, naxalism and ecological disaster in most parts of India. Even North East India has not been spared and one sees rampant mining in Meghalaya and Assam.

Q. 8. Recently, there has been an unprecedented rise in costal mining, causing significant environmental damage. What are their detrimental effects on our ecology? What according to you are the possible measures to mitigate it?

Mr. Dutta: Sandy shores forms a very limited part of India's coast line. Coastal stretches which are sensitive should be

identified as no mining zones. Sand mining has impacted fish breeding, turtle nesting and also the livelihood of fisher folks.

Q. 9. Mining laws in India have to a large extent collapsed. How can the issue of shoddy enforcement and lack of compliance be addressed?

Mr. Dutta: We cannot rely on government led enforcement. No government which comes to power will be interested in increasing enforcement. The possible answer is citizen led enforcement. Today the National Green Tribunal is an important institution where concerned people can come to seek enforcement of the environmental laws. The enforcement of the regulation with respect to sand mining is largely overseen by the NGT today.

Q. 10. Since you have been intrinsically linked and have been involved with cases related to mining. What according to you has been the direction of NGT on the issue of mining? Have the decisions helped in addressing the issue?

Mr. Dutta: The NGT has taken up the issue in a pro active manner. Despite the Supreme Court direction on regulation of sand mining nothing substantial has been done. This is mainly because it is difficult to approach the Supreme Court on a regular basis to seek enforcement of its directions. The NGT has hearing the issue on a monthly basis and has granted liberty to any person to approach the NGT in case of instance of illegal sand mining. On the positive side for the first time, EIA Reports are being prepared and appraised by the State Impact Assessment Authorities. So far as the directions of the NGT is concerned, it basically reiterates the Supreme Court order that no sand mining is permissible unless the EIA is prepared and environmental clearance is obtained. Specifically, the NGT has directed that the District Magistrates/ Deputy Commissioners and the Senior Police officers will be personally held liable in case it is found that illegal mining is taking place.



About CFL:

CFLs much touted as energy saving lights have been lightening our homes and workplaces for more than a century. The fact that these energy saving lights have the potential to reduce 40 % energy demands has spurred their growth in our country.

There is however, a hidden danger sealed inside these little bulbs. These bulbs have toxic innards which poses threat to our health and environment.

What Lies Behind The Glow?

On the flipside the glowing fixtures in your home can create considerable toxic footprints alongside.

Mercury, a neurotoxin element forms an integral part of CFLs. High level of mercury content in CFLs enhances the chances of mercury contamination and toxicity, thus posing significant danger to human health and environment. Indian CFLs are higher in their mercury content compared to some of the developed countries.

Why Should You Care?

These bulbs do not release mercury while they are in use and remain intact within the tube. However, if the sealed glass tube is broken, mercury and mercury vapor leaches in our surrounding environment. This may pose potential health risk. We generally dump our used and discarded CFLs with the general waste which in-turn is tossed into dumpsters and landfill, thinning out mercury in the environment. With CFLs becoming more popular among the Indian households it becomes imperative for us to dispose our discarded bulbs safely and not with the general garbage.

So, handle your broken and spent CFLs carefully and dispose them responsibly!

Did You Know?

The heavy metal is particularly dangerous to pregnant women and children and is known to impact vital organs such as liver and cause developmental and neurological problems. Some of its compounds are capable of crossing the placental barrier causing irreparable damage to the unborn / newborn babies.

Prashanti Tiwari
E: prashanti@toxicslink.org

RESOURCES

Factsheets

Toxics Link published a factsheet on dioxins, a Persistent Organic Pollutant which are released unintentionally in various industrial processes such as waste incinerations, ferrous and nonferrous metal production, heat and power generation, production of mineral products, transportation etc.

The factsheet elucidates the sources of dioxins particularly in food; regulations of Dioxins in food; the Indian scenario and the preventive measures that can be taken to evade the possible health afflictions. It points that there are no standards on dioxins

content in food items in India. It also cites various incidences of Dioxin contamination in food around the globe.

HCB another persistent organic pollutant is released unintentionally during the manufacture of certain industrial chemicals, combustion of coal, waste incineration and certain metal processes. A factsheet published by Toxics Link on HCB briefs on the unintentional release, health and environmental impact of HCB and countries' position on HCBs across the globe. The factsheet also explains India's Position on Hexachlorobenzene where it is used as pesticide and as an industrial chemical.

Toxics Link published a factsheet on PCBs, which are classified as Persistent Organic Pollutant (PoP) under the Stockholm Convention. Despite the toxic properties of PCBs they are used widely in many industrial and commercial applications including electrical equipments, heat transfer, and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; in pigments, dyes, and carbonless copy paper etc. The factsheet throws light on the adverse effects of PCBs on environment and human health; its exposure pathway in human; the Indian scenario on the use of PCBs and available technologies for its management.

FACTSHEET JANUARY 2013 / MARCH 2014

"DIOXINS" IN YOUR PLATE

FIGURE 1 - Chemical Structure of Dioxins, Furans & PCB

Dioxins and related compounds are chlorinated and brominated aromatic hydrocarbons consisting of two benzene rings connected by two oxygen atoms. They are produced during the incineration of chlorinated and brominated organic materials. Dioxins are highly toxic and persistent in the environment. They are found in food, particularly in fatty foods, and in the environment. They are also found in the air and water. They are highly toxic and persistent in the environment. They are found in food, particularly in fatty foods, and in the environment. They are also found in the air and water.

DIOXINS & HUMAN HEALTH

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Other effects on human may include:

- Developmental abnormalities in the central nervous system
- Reproductive disorders
- Immunotoxicity
- Endocrine disruption

FACTSHEET JANUARY 2013 / MARCH 2014

HEXACHLOROBENZENE (HCB) A PERSISTENT ORGANIC POLLUTANT

Introductory Facts

Hexachlorobenzene (HCB) is a chlorinated aromatic hydrocarbon compound. The chemical structure of HCB is shown in Figure 1. It is a white, crystalline solid with a melting point of 106°C. It is highly toxic and persistent in the environment. It is found in food, particularly in fatty foods, and in the environment. It is also found in the air and water.

FIGURE 1 - Sources of HCB

HCB is produced during the manufacture of certain industrial chemicals, combustion of coal, waste incineration and certain metal processes. It is also found in food, particularly in fatty foods, and in the environment. It is also found in the air and water.

HEALTH AND ENVIRONMENTAL IMPACT OF HCB

HCB is highly toxic and persistent in the environment. It is found in food, particularly in fatty foods, and in the environment. It is also found in the air and water. It is highly toxic and persistent in the environment. It is found in food, particularly in fatty foods, and in the environment. It is also found in the air and water.

FACTSHEET JANUARY 2013 / MARCH 2014

POLYCHLORINATED BIPHENYLS (PCBs) A PERSISTENT ORGANIC POLLUTANT

Introduction

Polychlorinated biphenyls (PCBs) are synthetic organic chemicals belonging to a broad class of chlorinated aromatic hydrocarbons. They are produced during the manufacture of certain industrial chemicals, combustion of coal, waste incineration and certain metal processes. They are highly toxic and persistent in the environment. They are found in food, particularly in fatty foods, and in the environment. They are also found in the air and water.

FIGURE 1 - Chemical Structure of PCBs

PCBs are produced during the manufacture of certain industrial chemicals, combustion of coal, waste incineration and certain metal processes. They are highly toxic and persistent in the environment. They are found in food, particularly in fatty foods, and in the environment. They are also found in the air and water.

PCBs AS PERSISTENT ORGANIC POLLUTANTS IN STOCKHOLM CONVENTION

PCBs are listed as Persistent Organic Pollutants (POPs) under the Stockholm Convention. They are highly toxic and persistent in the environment. They are found in food, particularly in fatty foods, and in the environment. They are also found in the air and water.

"Dioxins" in Your Plate

Hexachlorobenzene (HCB) - A Persistent Organic Pollutant

Polychlorinated Biphenyls (PCBs) - A Persistent Organic Pollutant:



CHOOSE YOUR GAME

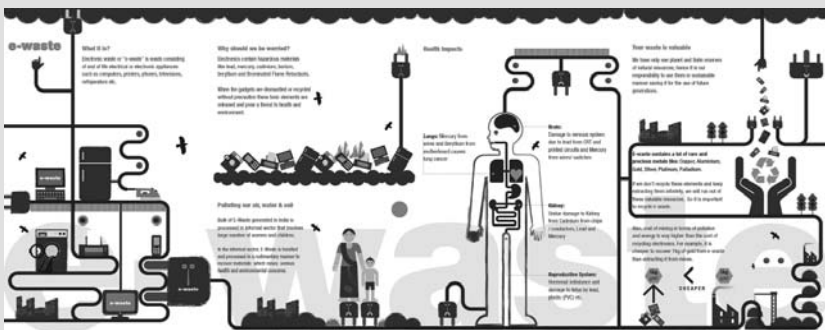
Game on E waste

Toxics Link has come up with an interactive platform of jigsaw puzzles (a game on Electronic waste) which helps us to understand where our obsolete and discarded electronic gadget goes after use and the environmental and health hazards posed by E-Waste. E waste is a critical issue we are facing today. With the growth in technology and easy availability of electronics, our dependence on these products has grown manifold. But the changing consumption pattern and 'made for dump' technology has shortened the life of these gadgets, resulting in escalating quantities of e-waste and thus adding to our toxic footprints.



Bio Medical Waste (Brochure)

Toxics Link published a brochure on Bio- medical waste which talks about the 10 commandments of Bio-Medical Waste Management. It provides a step by step manual to set up an appropriate waste management in hospitals like waste treatment handling & disposal; waste management policy; segregation, collection, and storage of waste; training hospital staff. It also throws light on the economics of waste management.



E – Waste (Booklet)

Toxics Link published a booklet on Electronic Waste based on the three Rs- Reduce, Reuse and Recycle. The booklet through some interesting info graphical illustrations depict what comprises e waste and why it is a matter of enormous concern. It also briefly illustrates about how one can recycle E waste and become a green citizen.

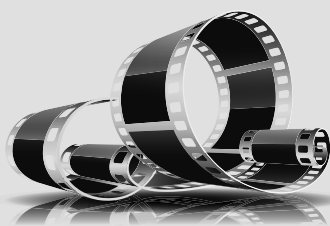


Lead in Paints (Brochure)

Toxics Link published a brochure on Lead in Paints which briefs on the various sources of Lead in our homes particularly in the paints we use. It also talks about the possible pathways of exposure and its adverse impact on our body, particularly the children.

Films

Poison In My Shopping Cart: Toxics Link produced a film titled “Poison In My Shopping Cart” ,which talks about Household Chemicals and its impact on Human beings and the environment. Every house today is a home to potentially dangerous chemicals which in-turn is contaminating our environment and our bodies. The film narrates that although these chemicals are present in a minuscule quantity which might not affect our body however there is a need to realize that by consuming/inhaling these chemicals even in minuscule quantity can have serious implications. The Films takes a tour of the rooms in our home and talks about the chemicals we are using and their possible health implication.



“The Invisible Enemy”: Toxics Link produced a film on Dioxins a dangerous chemical and a Persistent Chemical Pollutant, titled “The Invisible Enemy”. The film talks about the various sources of Dioxins. It depicts the release of dioxins and furans from medical incinerators or landfills or open burning of waste by the roadside, or when waste is burnt in an improper manner. It also narrated the harmful effects of these chemicals when it enters our bodies either directly inhaled or through food and water.



Report

“Looking Through Glass-CRT Glass Recycling in India” a report published by Toxics Link documents the environmental and health hazards associated with leaded glass from CRT in the informal sector and the issue of cross contamination, where leaded glass from CRTs is being mixed with other glass to make new products. CRT contains by far the highest amount of all substances of concern in a PC, the most toxic being lead. There is a substantial amount of lead in CRT encapsulated in the form of leaded glass – perhaps 2–3 kg in older models and 1 kg in new models. The study also highlights the improper recycling practices of the leaded CRT glass in India and the import of illegal shipments from the developed countries, posing an impending challenge.

NEWS

TV recycling a hazard for Delhi

NEW DELHI: As LCDs and LEDs are fast replacing the old-fashioned cathode ray tube monitors, the capital is faced with a huge health risk. Both the informal e-waste recyclers working at the CRT recycling hubs of Yamuna Vihar, Seelampur and Mustafabad and the end-users of products made from the glass are in danger of developing ailments from exposure to the material.

A study by NGO Toxics Link on improper recycling practices of the leaded CRT glass from TV sets and computer monitors has sent alarm bells ringing among environmentalists and health experts. CRTs contain large quantities of lead and barium—both heavy metals—as well as phosphor. They are considered one of the most hazardous types of e-waste.

The lead content in each CRT may add up to 1.5-2kg, according to the study titled ‘Looking Through Glass-CRT Glass Recycling in India’. Once dumped in landfills, the lead-filled CRT glass leachate seeps into the soil and groundwater. When hammered to pieces, the lead dust pollutes the air.

Researchers at Toxics Link believe that dangers from this practice may multiply because LCDs and LEDs are increasingly replacing CRT monitors. The scope for reuse of CRT glass to manufacture new CRTs is fast decreasing. The toxic glass is now being mixed with clean glass to make household products. “These products retain the toxicity of lead and can lead to high exposure to end users,” a researcher said.

Health impacts include delayed mental and physical development, learning defi-

ciencies, kidney damage, hearing problems, delayed puberty, decreased coordination and shortened attention span. These effects are most acute among children aged 0-6 years.

“The CRT market is dwindling and still the imports are not receding. This clearly indicates that countries are dumping used CRTs in India. If this continues, our country will be saddled with a huge amount of toxic leaded glass,” Satish Sinha, associate director at Toxics Link, pointed out.

Recycling of CRT has a huge market in the capital and major hubs are Yamuna Vihar, Amar Colony, Gokulpuri, Mustafabad and Meet Nagar, according to the study. After refurbishing, CRTs are sold to Delhi’s biggest electronic markets in Lajpat Nagar and Nehru Place and are primarily used for the manufacture of TVs for local brands and video game screens.

Date: 19/05/2014

Source: Times of India

<http://timesofindia.indiatimes.com/City/Delhi/TV-recycling-a-hazard-for-Delhi/articleshow/35317106.cms>

Tough measures needed to conserve Delhi’s environment

Delhi needs to urgently improve the fuel quality of vehicles and upgrade their emission technology if it wants to make the ambient air breathable, experts said. Sumit Sharma, a fellow with The Energy and Resources Institute (TERI) and an expert on air pollution, said, “CNG fuel and Metro could have brought particulate matter (PM) concentrations down but fuel quality for other activities remains inferior.

Delhi still relies on Bharat Stage-IV norms whereas the world has moved to Euro

5 and 6 standards.” According to Sharma, the Auto Fuel Policy 2002 had the mandate of bringing 13 cities under BS-IV norms and the rest under BS-III by 2010. BS-IV is the equivalent of Euro 4.

“We have lost four years since then and the future roadmap has still not been prepared. Only 22 cities adhere to BS-IV norms, while other cities are still using BS-III fuels,” he said. The high particulate matter in Delhi is not attributed only to factors within the National Capital but also to pollutants from Faridabad, Gurgaon, Noida and Ghaziabad. “NCR needs a common plan and an infrastructure revamp. Public transport has to be made comfortable,” Sharma said.

Experts also blamed the government for its lackadaisical attitude towards conserving the environment in the Capital. Ravi Agarwal, director of Toxic Links, said while Delhi had a rich ecology of water systems, forests, a river and diverse biodiversity of bird life, they have been poisoned, encroached and dumped upon. “Delhi needs hard decisions to protect its environment from pollution and encroachments. Economic growth needs to be balanced with ecological concerns,” he said.

Anumita Roychowdhury, executive director at the CSE, said: “We need urgent action at both the national and city level to meet clean air standards in a time-bound manner. The national government should make it mandatory for cities to meet clean air standards in a time-bound manner. Frame incentives and penalties to ensure enforcement.”

Date: 11/05/2014

Source: India Today

<http://indiatoday.intoday.in/story/delhi-environment-health-hazard-air-pollution-teri-emission-technology/1/360150.html>



**Call for Entries are now open for the sixth
“Quotes from the Earth” Environmental Film
Festival, 2014.**

About the Film Festival

Toxics Link and India International Centre is organizing “Quotes from the Earth” an exploration of films on environment, to be held at IIC, New Delhi, from 5th & 6th December, 2014 (Thursday & Friday).

This is the 6th edition, of the biannual film festival, being held since 2004.

“Quotes from the Earth” has been the first of its kind in the Indian capital since 2004. This being the sixth, the environmental film festival aims at providing a discursive platform to highlight environmental challenges faced by people at the national and international level through films, which happen to be one of the most powerful medium of communication and discussion.

It also goes beyond viewing films. A panel discussion gathering eminent academicians, vibrant activists, media persons and filmmakers is planned on the issue.

Since its inception the focus and aim of the film festival has been of awareness creation and is strictly non-commercial.

This is for the call of the entries for the films/documentaries/animations on the broader theme of environment like Earth, Water, Wildlife, Climate Change, Mining, Forest, Survival, Livelihood and Environmental Justice.

Please do send your entries to the below mentioned:

Praveen Sharma

praveen@toxicslink.org/ info@toxicslink.org

Format

The festival is proposed as an event, which goes beyond viewing films. Over a period of two days it aims to bring under one umbrella the persistent and the persuasive, with each day culminating into a panel discussion on diverse theme with panelists from education, media, film-making and policy field, the festival aims to engage the audience for not only what exists but also what steps to take for future action toward environment conservation.

QUOTES FROM THE EARTH

Visualizing Contemporary Ecological Challenges

TRAVELLING FILM FESTIVAL

Quotes from the Earth is a compilation of films on the themes of Hunger, Water, Survival, Wildlife, Conservation, Climate Change. To Screen the films in your city as a part of travelling film festival, Please write to us at info@toxicslink.org/praveen@toxicslink.org. The films are available against a nominal security deposit. You can view the details of the films at: www.toxicslink.org/filmfestival/2012/index.html

TOXICS ALERT (E-NEWS)

An environment news Bulletin

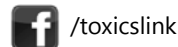
Visit: <http://enews.toxicslink.org/>, for our monthly e-newsletter on environment related news, articles, policy interventions, events on toxicity and its management. You can also subscribe to receive its updates via e-mail.



Toxics Link
for a toxics-free world

STAY CONNECTED

For more information materials, invitations and updates on environmental issues please do write us at info@toxicslink.org



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