

T O X I C S DISPATCH



A newsletter from Toxics Link

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FOR PRIVATE CIRCULATION ONLY

Toxics Link
for a toxics-free world

MINAMATA CONVENTION & ITS IMPACT ON INDIAN HEALTHCARE SECTOR

What is Minamata Convention?

Minamata Convention is a global legally binding instrument on mercury, which has been adopted in a diplomatic conference, held in Minamata in October 2013. In the year 2009, the governing council of UNEP through its decision 25/5 expressed the need for a global legally binding treaty on mercury, following which an Intergovernmental Negotiating Committee (INC) was formed. The committee met for five times from 2009 to 2013 and finally agreed upon the treaty text of the Minamata Convention in January 2013.

The treaty has been named as Minamata Convention, as a tribute to the millions of people who lost their lives due to the deadly mercury disaster in Minamata Bay, Japan in 1956. The objective of the treaty is to protect human health and environment from anthropogenic emissions and releases of

mercury and mercury compounds.

The treaty with its larger objective has focused on controlling mercury supply sources and trade; banning of mercury added products & manufacturing processes; artisanal and small scale gold mining; reducing mercury emission into air and mercury releases into land and/or water; environmentally sound management of mercury and mercury waste; closure and remediation of sites contaminated with mercury. Unlike other regulation or law, this treaty has focused on the need for training & capacity-building; research, development and monitoring; public information, awareness and education generation and also on the environmental monitoring and health surveillance of the impact of mercury.

Overall, a global treaty on mercury is being made expecting that if taken together by the parties to the Convention and fully implemented over time, will significantly reduce anthropogenic mercury emissions



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EDITORIAL

It gives me immense pleasure to go out with the first issue of Toxics Dispatch for the year 2014. I take this opportunity to wish all our readers a very Happy New Year. The year 2013 witnessed significant developments on environmental fronts, both nationally and internationally. We saw the change of guard at the Ministry of Environment and Forest and subsequently hastening the process of environmental clearances for some of the long pending large projects. Internationally, 2013 was of historic importance as countries came together to finalise and adopt a global legally binding instrument on mercury called The Minamata Convention. 94 countries have already signed the treaty (as on 10 Feb 2014), India, however has not signed the treaty, nor has it communicated its position on signing or ratification of the same.

The Minamata Convention is truly historic as the treaty attempts to address the environment and health concerns over the complete life cycle of mercury. While the treaty has clear mandate towards addressing the supply and demand aspects of mercury, it also enlists action to be initiated to control and reduce emissions and releases of mercury and its compound into the environment.

The Indian government is also required to come up with a detailed action plan for mercury management, priority sectors being lighting, healthcare, power, electronics and cosmetics. Public awareness on mercury related issues is almost negligible and any success towards implementation of the treaty text will largely depend on the level of awareness among its citizenry.

Toxics Link will also initiate a series of activities to bridge this information deficit and urge the government to initiate action towards implementation of the treaty. The year ahead poses other significant challenge in view of the general elections and environmental issues will perhaps only receive some attention after the formation of the a new government. We will continue to keep our readers updated on all environmental challenges that the country confronts in future.

Wish you all a happy reading!

– Satish Sinha

Associate Director, Toxics Link

and releases into the global environment.

Like many other countries across the world, mercury finds wide application in India in various products and process, out of which one of the biggest area is medical devices and its usage by healthcare sector. Mercury free healthcare sector is a dream target of this global negotiation process, as it is a global health issue and exposure to mercury results in a significant public health burden.

Mercury usage in healthcare sector are largely concentrated in two most common instruments, named thermometer and sphygmomanometer. These two devices, if broken, can cause significant exposure to the healthcare staffs, thereby raising the issue of occupational hazard, although in India this is a highly neglected area, when talked about medical professionals. The spilled mercury can even become harmful to the patients and the visitors, coming to the hospital as well, since the presence of mercury in hospital indoor air is a proven fact. (http://toxicslink.org/docs/bmw/MercuryCamp/Mercury_in_Hospital_Indoor_Air.pdf)

The graphs (on the next page) shows the study outcome, wherein sample survey were conducted in two of the hospitals in Delhi in 2007.

It is worth to mention here that, mercury present in the air can enter the body through inhalation; whereas spilled mercury can enter the body through food chain and/ or through dermal absorption. This easy movement of mercury across the eco-system and beyond the boundary makes foetus, new born and women of reproductive age group susceptible to mercury toxicity. Once they enter the body, mercury can damage the central nervous system and kidney as it is a neuro and nephro toxicant.

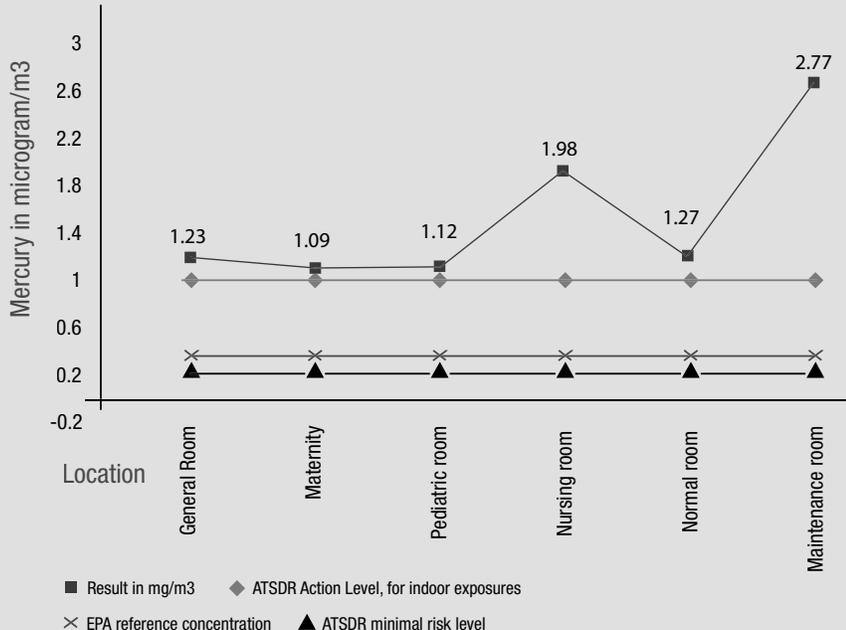
This altogether poses a serious challenge to the healthcare sector in India, as a single average sized hospital with a dental wing can release approximately upto 3 kg of mercury in a year (Lurking Menace - http://toxicslink.org/docs/bmw/MercuryCamp/Lurking_Menace_Report.pdf). Therefore, there is a strong need to shift the Indian healthcare sector from mercury to mercury free alternates. Though this drive started in early 2004 with five hospitals in Delhi which started shifting on their own; the journey however was not very smooth.

The most difficult challenge faced were the mindset of the



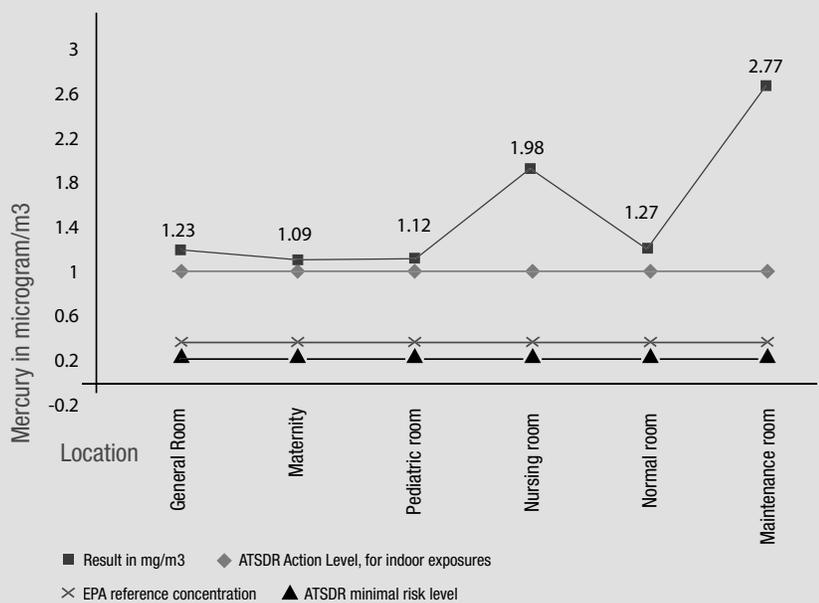
HOSPITAL – A

Mercury level in Hospital A and International Standards



HOSPITAL – B

Mercury level in Hospital B and International Standards



doctors, who were practicing with mercury based instruments for quite a long time. The non-availability of good quality products at an affordable price is another issue worth mentioning. The country does not have any mandatory standard for mercury free thermometer and sphygmomanometer. Absence of any strict regulatory measures is another important reason for poor implementation in hospitals across the country.

The country is also lacking any disposal mechanism for discarded instruments and other mercury waste, generated from the healthcare sector, thereby leading to increased mercury pollution load into the environment. Central Pollution Control Board has recently come up with a national guideline for environmentally sound management of mercury waste from the healthcare sector; however the implementation of the same across the country has been barely achieved.

Henceforth, keeping these issues in mind, the country at this point of time, needs to act collectively with the various stakeholders associated with it.

- The country needs to come up with a national level order or notification for phasing out mercury from the healthcare sector of India;
- BIS to ensure mandatory standardization and calibration of mercury free instruments, viz thermometer and sphygmomanometer;
- Government to encourage manufacturers to produce mercury free alternatives, to ensure availability of products locally and at cheaper prices in India;
- Funds need to allocate for shifting from mercury to mercury free products in government run healthcare set up;
- A proper collection mechanism of discarded mercury based healthcare instruments and spilled mercury from broken instruments is required to be established;
- Country may come up with a centrally located place, designated for safe and environmentally sound disposal of mercury and mercury containing waste.

Kankana Das
kankana@toxicslink.org

FEATURE

SAICM-2020 Goal: Towards A Global Chemical Safety Regime - Time Is Ticking

Post World War –II, the world has witnessed rapid growth of synthetic chemicals and rise of the chemical industries for the production of consumer and industrial goods. The Rio Earth Summit-1992 was a watermark summit, where head of the nations across the globe first time extensively discussed the urgent need for a safer environmental regime for a sustainable world. Chapter 19 and 20 of Agenda 21 encouraged governments in cooperation with others to adopt policies and undertake activities that takes into account the entire life-cycle of chemicals. Later in 2002, in World Summit on Sustainable Development (WSSD) at Johannesburg, a section on the sound management of the chemicals was incorporated and it called upon the government to develop a Strategic Approach to Chemical Management (SAICM). Finally SAICM evolved in 2006 at the first International Conference on Chemical Management (ICCM-1) held in Dubai.

SAICM tries to address the sound management of chemicals at all stages of their life –cycle to ensure that workers, farmers and the public at large no longer suffer health deficits, diseases or deaths due to occupational or environmental exposure to chemicals. Further, SAICM reiterates to phase- out or restrict the production and

use of chemicals of greatest concern.

To implement SAICM, an effective mechanism has been developed and listed out activities for the global plan of actions involving various stakeholders like government bodies, NGOs, industries and intergovernmental organizations. In due course new emerging issues like lead in paints, nanomaterials and chemicals in electronic products and endocrine disrupting chemicals are included in the global plan of actions.

Moving Towards 2020 Goal

The global plan of actions is an important tool for the countries to implement SAICM towards a greater chemical safety regime. However, seven years down the line of adoption of SAICM, very little initiatives have been undertaken by the countries to achieve the desired goal. The EU's regulation the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), registration of new chemicals by the US and EU are some important steps towards the commitment of 2020 goal. The developing countries, particularly emerging countries like China, Brazil, India and Thailand have also initiated certain actions and promulgated new legislations process in their countries towards chemical safety. Sri Lanka has come up with lead standard for the household paints, which is first of its kind from the perspective of developing countries.

Challenges in 2020 goal

SAICM was developed to bridge the gap between what is needed to protect human health and environment from

chemicals and the measures available under the existing legally binding instruments. However there is a significant gap between chemical management today and the 2020 goal to achieve sound management of chemicals globally. Considering the time frame in SAICM and with only eight years left for the 2020 goal, perhaps the world needs to act proactively to achieve the target within the stipulated time frame. Some specific challenges, which the countries are facing in achieving the goal includes lack of capacity to deal with the issue of chemical safety, sustain financial support to integrate and maintain chemical regulatory structure and inadequate information on chemicals and mixture of chemicals and its impact on the ecosystems.

End Notes

Despite some inherent loopholes like non binding in nature, SAICM has set up a stage for the international community to look at the perspective of chemical safety, which is increasingly impacting community health. However at the same time SAICM process has created a space to raise issues like lead in paints that has got prominence in the developing countries like India, Thailand, Bangladesh and in African countries. The standard for lead in paints by Sri Lanka has set an example on the importance of SAICM and its larger outcome. Most importantly, SAICM has spurred discussions in many countries on the importance of chemical safety with respect to the growing health burden arising due to chemicals.

Finally the national governments should acknowledge that the current state of chemical management is not adequate and prompt actions are required to minimize the impact of environmental and health costs. This requires the states to join actively in the pursuit of a more robust and rigorous global chemical regime within the time frame and if required the time needs to be extended beyond 2020.

Piyush Mahapatra
piyush@toxiclink.org



Rag pickers – A peep in their life!

Delhi, one of the most gregarious cities of India, hued with a deep checkered history, architectural monuments, forts, cherished worship places, skyline buildings, world class restaurants and eateries, shopping complexes, mall culture and the cosmopolitan populace, has yet another visage to offer. Beyond the veil of this glamorous city is an unflinching truth, with innumerable women and children living in the most inhumane and squalid conditions. Their wretched circumstances are difficult to decipher as they live beyond the humane.

Rag pickers being one amongst them! Peering across the city one sees scores of listless women and children foraging to and fro, amidst the mound of dump; striving for subsistence from the squalor and trash. They are the poorest of the poor and the most marginalized groups, rummaging their lives from the waste on the streets, municipal bins and landfills.

The bustling city is a home to almost 2 lac rag pickers; Nizaamudin Basti is one among them, harboring hundreds of rag pickers, mostly from Assam. These waste pickers wake up at 5 am and leave with their gunny bags, empty and rumbling stomachs and an unbowed spirit for yet another uphill day. Samir, is one amongst the thousand improvised young children scouring the putrefying waste looking for bits of metal, paper and plastic, which is to become his source of livelihood for the day. What is a bed of waste and filth for us; is indeed a promised land for him and for the thousands like him. They resell whatever found cloth,

paper, glass, bottles or plastics.

Here nothing is ever thrown away. Anything that can be salvaged is grabbed, the smallest bit of plastic, shreds of cloth, broken bottles anything could become the object of covetousness.

“I always wanted to study and go to school but I could never go to one, nor have I ever seen how does it look like from inside”, says Samir, a 15 year old boy, trying to warm himself in a tattered jacket close by the fire. As soon as he could walk he was expected to toil and earn a living for his improvised family and do his bit for the family’s survival.

“We get sick very often, and by the time we return home in the evening most of us are down with fever or cold”, he added.

Next to him stood a 12 year old girl on the mould of garbage, in soiled shawl scouring in the hill of refuse, her wandering eyes searched for some remnants of wood to make fire. After wandering around, the little girl found bits of salvaged iron pieces, nails, some plastic bottles and pieces of glass, that were to become her source of earning few a pennies for the day. These Rag pickers rely on the meager money they earn from the sale of these discarded items and live in extremely unhygienic conditions.

“We see money amongst what you call the mountain of rubbish” says Ahmed smilingly, another rag picker aged 25. *“Trash is like a gold mine to us. Where others see debris, rot and filth; there I see an opportunity; this rot you see around supports my livelihood”*, he added.

“Every day I battle here for a living to feed my family, and I want to give my children a better future. I will not let them become like us,” explained Ahmed.

Ahmed, who belongs to a rural immigrant family from Assam, lives here with his wife, two brother and three children. He slogs the whole day right from 5 am in the morning to 8 pm at night, so that he can send his children to school. Each day he toils in the hope for a better tomorrow.

The waste pickers throughout their life live in filth little realizing the adverse health implications of their profession. Poverty and unemployment are the overriding reasons for them joining the business of rag picking. For all the services rendered by them, for cleaning our surroundings, our society and our environment, they are but seen as ‘scavengers’. The city generates almost 12-13 thousand metric tons of solid waste, of which a major chunk is collected by the rag pickers. What they receive as a bestowal for their valuable services; is discrimination, social ostracism, deprivation and harassment.

The rag pickers form a part of the lowest rung of the urban poor and bereft of any identity; social and economic entitlements, or even a safe abode. Majority of them are migrants from Bengal, Bihar, Assam or Uttar Pradesh, who have come and settled here in search of an occupation. There are no policies to address the issue of security or livelihood of the waste pickers. The government denies them even basic entitlements, including education for their children. Issues related to their ill health, unhygienic conditions and social security remains completely unaddressed.

The state does not pay them anything for the indispensable service of cleaning our surroundings; their livelihood is solely dependent on the recyclables collected. The fact that the state does not recognize waste picking as a profession and are rather seen

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as encroachers reflects the despicable apathy of those in power.

I stood there contemplating on the irony that encountered me amongst the filth and foul smell. It's truly a world that rewards in reverse! One sees human misery in the

starkest form in this inescapable stench of decay.

One sees the battered and uncared children rife their life through the filthy garbage at an age when they should be gaily playing and going to schools. There are countless

such tales of desolation and despair which can go on endlessly.

Prashanti Tiwari
prashanti@toxicslink.org

UPDATE

The Himalayan Tsunami – Nature's Wrath or the Wrath of Mankind

The flashfloods in Uttarakhand has been one of the greatest ever ecological debacles which in just one sweep left the holy land of pilgrims inundated and barren. The Himalayan ranges which once was camouflaged in the green canopy of nature, has today become desolate and dreary; with her mantle in shreds and tatters. The loss has been colossal and inexplicable.

What is left behind is nothing but dilapidated relics, heaps of mud, boulders, the dead, the homeless and the injured, who have been left to fend for themselves. The aghast tragedy shook the whole country; countless families and children are still wallowing in misery and trauma. The loss of life and property has been enormous and the damage would take years to recover.

Although the calamity that wrecked Uttarakhand was natural, caused by cloud burst and flash floods, nevertheless the impact on human life and property is a testimony to the years of haphazard and irrational development; the region has been a witness to. The region has faced the dire consequences of insatiable human greed and fraudulence. Environmental laws and requirements had been violated with impunity. Indiscriminate urbanization, unabated expansion of power projects, mining, cutting of trees, illegal encroachments, broadening of roads and tunnels and the illegal constructions in the fragile eco-sensitive zone, are some of the root causes.

Further lack of co-ordination between the disaster management agencies like India Meteorological Department (IMD), National Disaster Management Authority (NDMA), State Disaster Management Authority (SDMA), Disaster Mitigation and Management Centre (DMMC) and the Uttarakhand government largely amplified the

disaster. Even the premier flood forecasting institute of India, the Central Water Commission which is the highest technical body of water resources in India and is responsible for forecasting floods did not forecast any floods in Uttarakhand. Environmentalists believe that with an efficient motoring system and forecasting preparedness a lot of disaster could have been avoided.

Random construction of dams and expansion of hydel power projects also lead to overexploitation of an ecologically fragile region. There are 98 operating hydropower projects with a capacity of 3,600 megawatts, 41 of them are under construction with a total capacity of 2378 mega watts and 197 proposed hydropower projects with a capacity of 21213 megawatts. Each of these projects are termed as just run of the river projects whereas in reality each of these projects have big dams as defined internationally, each of them have capacity of several million cubic meters of water. Further, a Dam construction involves dynamite blasting, debris dumping, extensive deforestation, diversion of rivers, all of which catalyzed the adverse ecological impact in the region, making it even more vulnerable.

The immense loss has left behind some inevitable questions to be addressed. To take a critical look at the deluge, the lessons learnt and contemplate on some crucial ecological issues associated with the catastrophe, Toxics Link in collaboration with India

International Center organized a Public Lecture on 'Uttarakhand Tragedy: Man Made or Natural' (13th August, 2013). The panel included eminent speakers like Prof. Chandra Shekhar Dubey (Prof. & Head, Department of Geology, University of Delhi), Dr. Chandan Ghosh (Head of the Geo-Hazard Risk Management Division, NIDM), Mr. Himanshu Thakkar (Coordinator of South Asia Network on Dams, Rivers & People) while the discussion was moderated by Mr. Ravi Agarwal (Director, Toxics Link). Expressing deep resentment Mr. Agarwal, noted that it was only when the disaster came to the fore that we started contemplating and discussing about the issue, despite the fact that the disaster had been in making for a long time. What had been happening in Uttarakhand is happening in other fragile ecosystems as well like the Aravali, the Western Ghats and the Himalayas and it is imperative to reflect on some of the challenges confronting these regions.

The discussion came out with some glaring revelations and the gaping holes which need to be plugged. Poor development strategy, expansion of roads, heavy tourist rush, loss of biodiversity and unplanned constructions had made the region extremely vulnerable and thus largely compounded the disaster.

Prashanti Tiwari



Toxics Link Files an RTI

Hospital wastewater constitutes a major discharge of highly toxic chemicals, antibiotic resistant bacteria, viruses, disinfectants, pharmaceuticals residues and thus warrants treatment before discharge. The sewer of the hospitals joins the public sewer lines across the city enhancing the possibility of contaminating the ecosystem. The wastewater generated from the hospitals is highly contaminated and largely laden with germs, drugs, antibiotics and pathogens. Consequently, when the untreated wastewater is flushed into the public sewer it would spill the lethal effluents in the domestic sewer, posing serious afflictions to human health and environment. In this light Toxics Link felt it crucial to

ascertain if the health care facilities have waste water treatment facilities operating efficiently. Toxics Link filed RTI's with thirteen hospitals in Delhi (Government Hospitals) seeking information on Waste Water Treatment facilities. It also sought to authenticate if the waste water of the hospitals are sent to these plants for treatment, thus preventing contamination of the public sewer, ground water and the water supplies.

The RTI filed sought the following information:

- The installation cost of the Sewage Treatment Plant of the hospital along with its capacity.
- The installation cost of the Effluent Treatment Plant (ETP) along with its capacity.
- The amount of water in the hospital used/day, treated/day. The amount of



the treated water/reused/day.

- The treatment methodology used in the plant along the list of chemical used.
- Monthly expense on running the plant and the various heads of expenses and the breakups.
- Date of installation of the plants.
- Date of commencement and period of operation of the plants
- The quality testing of the treated water from the plants and the mode of doing so.

MEDICAL WASTE UPDATE:

Uttar Pradesh wakes up to Bio Medical Waste Management

Biomedical waste is emerging as a critical waste issue particularly in smaller towns and cities which lags far behind, owing to lack of awareness on the issue. Management of Medical Waste has been a major issue, ignored for a long time in the cities and districts of Uttar Pradesh. According to the Central Pollution Control Board (Bio Medical Waste Status 2012), Uttar Pradesh generates 22995.65 kg / day, while there are only 20 Health Care Facilities (HCF) which have their own Treatment and Disposal facilities. Thus most of the medical waste generated goes unaccounted and is

dumped illegally without any adequate treatment.

Mixing of the infectious and hazardous waste with the general municipal waste is a common practice. The health care facilities, hospitals and nursing homes conveniently dump and strew the infectious as well as toxic wastes within or outside the premises. The situation is grimmer in districts like Barabanki, Sitapur and Hardoi where lack of awareness and non compliance to the rules has compounded the problem. Waste treatment and disposal infrastructure in the hospitals is inadequate and inefficient.

Harvilas Bal Evam Mahila Chikitsalya is one such hospital which dumps its medical waste in the school compound and sells the plastic waste of syringes and bottles to the scrap merchants. While most of the hospitals openly burn the bandages and

cotton, amplifying the grave threat posed to human health and environment. Further incinerators are operating unhindered even in renowned hospitals like Lala Lajpat Rai hospital, Medical College, (Kan-

pur) despite the hospital being situated in the heart of the city.

In an endeavor to improve the bleak situation Toxics Link conducted a training program on Effective Bio Medical Waste Management and Mercury Free Health Care System in U.P, during the month of August and September. The training was carried out in collaboration with Ganga at Lala Lajpat Rai and Associated Hospital, Medical College Kanpur; R.K.Sindhi Sangh Maternity Hospital, Kanpur and District Hospital Sitapur. The trainings emphasized on Bio Medical Waste Rules and underscored how an effective Bio Medical Waste Management System can be established in hospitals. It helped in setting up model hospitals for waste management practices which would also serve as a demonstration site for other hospitals.

The calibrated effort of Toxics Link and Ganga has translated into some tangible initiatives which includes initiation for the removal of incinerator, segregation of waste in appropriate dustbins as per the colour coding, bins of Municipal Corporation have also been placed in the hospitals. Also the Nurses, Ward Boys, sweepers and the patients were sensitized and motivated on a regular basis which has helped in improving the situation in these hospitals.

Compiled by - Prashanti Tiwari



Toxics Link a part of the International Lead Poisoning Prevention Week of Action

The first International Lead Poisoning Prevention Week of Action was observed from 20th to 26th October 2013. The core purpose of the week was to spread awareness about lead poisoning. Countries like Bangladesh, Indonesia, Nepal, Sri Lanka, Thailand, Philippines and India, hosted a series of activities on the issue, which included spreading awareness in schools, radio talk shows, formation of stakeholders forum, high level policy meetings and vigorous media campaigns.

Keeping this aim in mind, Toxics Link, as part of the week, organised school program, sign the petition and a



conference on lead poisoning in collaboration with World Health Organisation. The attempt marked a consolidated effort to eliminate lead from paints.

School Program

Toxics Link held one-hour long school programs in the schools of Delhi both private and government. All the students and teachers attended the workshop and



participated in the program very enthusiastically.

The sessions began with screening of a 5 minute film titled “Toying with Lead” (2006) which deals with the paints used on children’s toys. This acted as an ‘ice-breaker’ with the children. This was followed by a presentation which shared basic information on lead (pb), mediums of exposure and impacts of lead in the body. The main emphasis was on lead in paints and toys. The session ended with a small quiz which saw active participation from the students.

Bollywood superstar and brand ambassador of Kansai Nerolac Paints Limited, Mr. Shah Rukh Khan supported the cause which was visible in his statement:

“Lead causes irreversible brain damage in children. It is preventable. Avoid exposures in children by choosing house paints that are lead free. Wash their hands frequently. Let’s work together to make this world a safer place for our Children”.



Petitioning The Secretary, Ministry of Consumer Affairs, Govt. of India, The Secretary, Dept. Of Health & Family Welfare, Ministry of Health & Family Welfare, The Secretary, Ministry of Environment & Forests

Eliminate Lead from Paints in India

Petition by
Toxics Link
New Delhi, India

Lead (Pb) is a metallic element and is highly toxic in all its forms, especially to young children. Lead is a known neurotoxin and accounts for about 0.6% of the global burden of disease (WHO 2009).

<http://www.who.int/tah/publications/leadguidance.pdf>

It is dangerous to such an extent that exposure to even small amounts of lead can reduce a child's intelligence and studies have shown that lead poisoning can cause increased violent behavior.

It has been found that Lead in paints is one of many sources of childhood lead.

Sign the Petition

A petition to eliminate lead from paints was initiated by Toxics Link which was posted online (<http://www.change.org/petitions/eliminate-lead-from-paints-in-india>). It petitions the Secretaries of the Ministry of Consumer Affairs, Ministry of Health and Family Welfare and Ministry of Environment and Forests to take appropriate actions to eliminate or develop standards for the lead content in paints. More than 500 people have already signed the petition.

Shivani Bhaḡhry
shivani@toxicslink.org

Ushering the winds of change - Be a Green Champion

Students brought closer to environment through E-waste School Awareness Program 2013, where the children were motivated to do something for their environment. In an encouraging development, 300 schools across India formed a part of - 'Be a Green Champion', initiated by Toxics Link. The programme covered 16588 students and more than 600 teachers from six states namely, Delhi, Rajasthan, Kerala, Sikkim, Uttar Pradesh and West Bengal.

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 module of the school programme was very creative and fun filled. It included a story based presentation on E-waste, quiz competition on the issue, few group



based activities for student. Also, E-waste bins were placed in the school campus across the cities. The E-waste was collected from schools after two weeks from the date of bin being placed. The major collection included mobile chargers, few mobile phones, cell batteries, mobile batteries.

Winners of various games were awarded with certificates and badge to encourage them to participate in such programs in future. Open house discussion gave the students an opportunity to clarify their doubts.



A mix of public and private schools were targeted in each state. The overall experience of the program was excellent. At the completion of the project, it was felt that students of public schools were more interested in such campaigns due to lack of opportunities for the students. The need of the hour is to have such programs on regular time intervals for a greater impact on the society.

Ankita Jena
ankita@toxicslink.org

Burgeoning E Waste mauling the North East

North East, amidst other political and social instabilities has yet another threat of escalating toxic footprints of electronic waste (e-waste), which is plaguing the scenic region. Threat posed by E waste looms large due to the presence of toxic metals like Lead, Cadmium, Mercury, Chromium Beryllium and Brominated Flame Retardants.

Assam generates 14,000 tons of E-waste, while Shillong (Meghalaya's capital city) generates 446 metric tons (approximately) annually. Mizoram produces approximately 18000 tons of E-waste. Besides the toxics waste being indigenously gener-

ated; it is largely imported from neighboring countries. The huge influx of substandard products pouring in from Myanmar, Bangladesh, Nepal and Bhutan, is largely mauling the region. Being cheaper than the branded products, many people buy these imported products which have very short life span and soon become obsolete. Apart from imports, lack of awareness is one of the major impediments to proper handling of e-waste in the North East.

The problem is compounded by the absence of appropriate infrastructure facilities for collection, disposal and recycling. The toxic waste is thus handled by the informal sector which uses rudimentary techniques and environmentally unsafe recycling

practices like acid bath and open burning. The fallout of these primitive methods have serious ramification on human health and environment. Further, e-waste is disposed with the municipal waste and sent to the Landfills or the community waste bins, adding to environmental impairment.

Although, the Ministry of Environment and Forests (MoEF) has promulgated the 'E waste Management and Handling Rules 2011, the rules are new and understanding them would require some time in the region. In most of the states, the existing legal framework, its implementation and compliance is still at a nascent stage. Further dearth of any inventorization of e-waste in the region by the state pollution control board adds to the grim reality.

In a bid to handle the issue and formulate a future roadmap, Toxics Link organized a one and half day workshop titled 'E-waste: Creating Changes' on 5th-6th September 2013 in Guwahati, Assam. This was probably the first workshop being organized on e-waste in this region. The workshop was attended by Eight State Pollution Control boards (Assam, Arunachal Pradesh, Manipur, Mizoram, Meghalaya,



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Nagaland, Tripura and Sikkim and some local civil society organizations for charting out the future roadmap.

The objective of the workshop was to understand the current scenario in the participating states and make the stakeholders understand the issues related to e-waste and the governing Rules. All the State Pollution Control Boards shared their experiences and challenges in implementing the rules in their respective states.

Ankita Jena

Elimination of Lead in Paints gains momentum in South East Asia Region

Lead is a toxic metal which is all around us. It is a well-known neurotoxin which damages, destroys or impairs the function of the developing nervous system. Exposure to lead is a major public health concern particularly for children and other vulnerable groups. It is also a major occupational hazard.

Despite knowledge about the toxicity of lead, compounds of lead are widely used in paints and other consumer products in many Asian countries. This is in contrast to Europe, North America and Australasia. However, alternatives to the use of lead compounds in paint are widely available.

Toxics Link has been involved in lead paint elimination advocacy since 2006. Diligent perusal of the issue with the industry has resulted in major paint brands shifting from leaded to lead safe decorative paints (paints whose lead levels are less than 90 ppm or parts per million).

At present, the organisation is carrying out advocacy and public awareness activities under the aegis of IPEN's Asia Lead Paint Elimination Project. The European Union funded project is a seven-country project which includes India, Nepal, Bangladesh, Sri Lanka, Thailand, Indonesia and Philippines. From India, Toxics Link is participating in this project.

As part of the project, Toxics Link carried out dialogue with various stakeholders like the paint industry, government officials, health personal, academicians and the



consumers through a number of meetings. The organisation held school programs on the issue. A petition to eliminate lead from paints has also been initiated.

The organisation has been working closely with Quality Council of India (QCI) to discuss certification criteria and a voluntary certification scheme for lead safe paints that could be used in India and serve as a model for other countries.

Currently India does not have any mandatory standards for lead in paints. The Bureau of Indian Standard (BIS) has prepared a draft notification on lead standards for the household and decorative purposes. The maximum lead limit for most of the paints is 90ppm, while for industrial paints the limit is 300ppm. The final notifications are yet to come.

In this revision, restriction of lead content at 90 ppm level max. has been introduced to prevent lead exposure of children and adults in consumer homes/residential premises and consequent adverse impact on human health and safety.

Other South Asian Countries are also taking preventive measures for eliminating

Lead from paints. Many countries have taken regulatory actions to reduce environmental and occupational exposures to lead. Recognizing the increasing menace caused by Lead and the necessity to curb its usage, the Philippines Government came up with a Chemical Control Order which establishes 90 parts per million (ppm) as the maximum permissible limit for lead in paint and set a phase-out period of three years for leaded decorative paints and six years for leaded industrial paints. While in a noteworthy development the Consumer Affairs Authority of Sri Lanka also introduced lead in paint standards which came into effect from January 2013, regulating permissible maximum lead content on paints and accessories. As a result most large companies and SMEs now produce unleaded paint. Thailand has voluntary standard limiting lead in household enamel paints to 100 ppm. In countries like Bangladesh and Nepal, the discussions among the policy makers have started to regulate the lead content in household paints.

- Shivani Bhakhry



INTERVIEW



“Rivers are virtually fighting a losing battle for their very survival” - Manoj Kumar Misra

Mr. Manoj Kumar Misra, is a Forestry and Wildlife expert, who formerly worked with the Indian Forest Service, IFS. Currently he is the Executive Director of the PEACE Institute Charitable Trust and Convenor, and head of Yamuna Jiye Abhiyaan, the Yamuna Forever Campaign. He holds Masters degrees in Mathematics, Forestry and Wildlife Management. He talks about a recently published book titled ‘Yamuna Manifesto’ and explains about the ebbing River, in an interview with Prashanti Tiwari.

Q. 1. You have also co-authored a successful book titled “Yamuna Manifesto”. What is the book about?

Mr. Misra: It is a bilingual (Hindi and English) book about the river, its origins, its history and mythology, its transformation from a free and living river into a captive and dying one, the various threats faced by it and what actions need to be taken to revive it to its past glory.

Q. 2. What inspired you to write a book on Yamuna?

Mr. Misra: Since it is largely a factual narration based on our (Himanshu Thakkar and myself) research and advocacy for rivers in general and of river Yamuna in particular, it did not require us much goading to put our thoughts into words. Our participation at a seminar under Project Y and Ravi (Agarwal) ji’s suggestion to convert points from the presentations into a text was enough.

Q. 3. The book is an outcome of Project Y – a public art and outreach project. Can you briefly explain to our readers about the project?

Mr. Misra: Project Y was an interesting attempt to twin two rivers and their associated

cities, namely river Elbe and Hamburg city in Germany and river Yamuna and Delhi city in India and to bring professionals from varied fields in particular artists at a single platform to exchange views and experiences in a novel manner. The project included river side art exhibitions, debates, seminars and exchange visits.

Q. 4. What does the river mean to you?

Mr. Misra: A river is the best expression of movement and life itself. For just like life it goes on never to return. It is well said that it is impossible to touch the same water ever again at a point in a flowing river. So is the case with life! A moment past is past.

Q. 5. How do you see the river today?

Mr. Misra: In bad shape, unfortunately. Man has in these so called modern times has taken rivers for granted and abused them to no end. We have blocked them, abstracted their water, and fed them with all kinds of our refuse. We have invaded their flood plains and violated their ecological integrity.

Q. 6. What are the challenges, the river is facing today?

Mr. Misra: Rivers are virtually fighting a losing battle for their very survival. Diversion of water, blocking of flows, loss of biodiversity and encroached flood plains are some of the key challenges.

Q. 7. Do you feel that the Authorities have failed to revive the river? What role according to you the authorities need to play to bring the river back to life?

Mr. Mishra: Authorities have been most insensitive to the needs of the river. They need to first understand that a river is an eco-system and unless all its key ecological components (flow, flora and fauna, tributaries, flood plains etc) are restored and revived, all their attempts at mere cleaning of it are going to fail, no matter.

Q. 8. What is the way forward to save the dying river?

Mr. Misra: First of all a better understanding of it. From understanding shall result the

correct steps. We hope that this book helps in improving the same.

Q. 9. The book talks about the river being a victim of development. How has development affected the ecology of the river?

Mr. Misra: The development as we today understand has come to signify a consumerist society where production for sheer consumption has become the objective of all economic activity. Our insatiable hunger for energy, exotic foods, luxury goods, housing and modes of transportation, to name but few prominent images of modern living, has led to the damming of almost every imable river, diversion of its waters to meet urban and industrial needs, discharge into it of unimaginable pollutants from urban and industrial centres and invasion into its flood plains for housing and other facilities.

Q. 10. What according to you is the role of institutions in preserving and reviving the river?

Mr. Misra: Institutional role is critical in research, advocacy and awareness generation.

Q. 11. On one hand there is a pressure for intensive urbanization while on the other there is the issue of sustaining the river. How can these two polarizing issues be handled at the same time?

Mr. Misra: Urbanisation need not necessarily be anti-environment or anti-rivers. River valleys as cradle of civilization over the ages points to the fact that man needs river for sustenance and the two are not existentially antagonistic in nature.

Q. 12. Do you think that the idea of sustainable ecology and economic development is contradictory today?

Mr. Misra: On the contrary we think that it is only sustainable ecology that can become the basis of sustainable economic development. We need to learn to live with nature within natural bounds. Once we cross the nature’s limits to growth then we are bound to face consequences beyond our control or even imagination. Let us always keep Kedarnath in June 2013 alive in our memory!

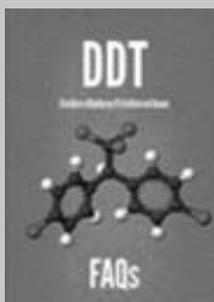
RESOURCES



Dioxins & Furans (FAQs)

Toxics Link published a FAQ on Dioxins & Furans which elucidates that Dioxins and Furans are highly toxic substances (chemicals) which are not man-made or produced intentionally, but are released into the environment unintentionally in gaseous and residue forms. It also explains in detail the sources of Dioxins and Furans, its pathways and why they are a cause of concern. Dioxins and furans are proven carcinogen while known to cause a number of other health impacts in human as well as animals. People exposed to dioxins and furans have experienced changes in hormone levels and are suspected for disrupting endocrine systems. Dioxin and furans are particularly worrisome for women who can accumulate it in their bodies for years and then pass it on to their children or nursing infants.

The publication also addresses that dioxins and furans release can be mitigated or reduced in India by using best available technologies in various sectors, including promoting non burn technology, discouraging biomass burning, and source segregation of municipal waste.



DDT (DichloroDiphenyl Trichloroethane) (FAQs)

Toxics Link published a FAQ on DDT which explains about DDT and its usage. During the Second World War, DDT was extensively used for disease control. After the war, it was introduced as an agricultural insecticide. Later in the 1950s and 1960s, DDT was the main product used to eradicate malaria globally. The publication further explains that DDT has been considered as a persistent organic pollutant by the Stockholm Convention, with specific exemption for disease vector control as recommended by and under the guidance of WHO. The FAQ also addresses the health impacts of DDT, the guidelines for the use of DDT and Indian standards for DDT usage.



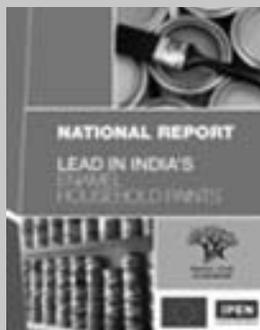
The Stockholm Convention- (FAQs)

Toxics Link published a FAQ on the Stockholm Convention which explains in detail about the convention and how it operates. The Convention is a globally binding international treaty that aims to eliminate or restrict the production, use, storage and trade of Persistent Organic Pollutants (PoPs). Due to the risks posed by the long-range transport of PoPs, the international community had been calling for global action to reduce and eliminate release of these chemicals. The publication also briefs on the implications of Stockholm Convention in India.

It further explains what Persistent Organic Pollutants (PoPs) are, its sources and its potential environmental and health impacts. Scientists have found that exposure to PoPs can cause health problems like cancer and tumors; neurobehavioral impairment including learning disorders and changes in temperament; immune system changes; reproductive deficits and sex-related disorders.

National Report Lead in India's Enamel Household Paints (Report)

National Report Lead in India's Enamel Household Paints, published by Toxics Link presents new data on the lead content of household paints for sale on the Indian market. The lead (a highly toxic metal) levels in the paints included in the present study varied from below 8 ppm to 1,60,000 ppm with an average concentration of 22,800 ppm. Out of 250 samples only 26 (10%) paints were



found with lead concentrations of less than 90 ppm.

The study revealed that ninety percent of all paints included in the study contained lead concentrations above 90 ppm, which is the proposed draft Bureau of Indian Standards (BIS) standards for enamel, interior paints and internationally considered an acceptable level of lead.

The study also reveals dangerous levels of lead were mainly found in household decorative paints manufactured by the small and medium-size enterprises (SMEs). This suggests that paint already used in children's environment constitutes a route of exposure of lead to the young and most vulnerable population. The extent of lead use by SMEs is largely unknown, but this study indicates that many SMEs are adding high amounts of lead in their enamel decorative paints.

Another major concern the study raises is that brightly colored paints have the highest concentrations of lead. Yellow colored paints were found to contain higher amount of lead than white and other colors. The study emphasizes the need to create and enforce strict national standards for lead in paint, improve compliance and generate awareness on the health and environmental hazards caused due to lead in paints

Yamuna Manifesto (Book)



"Yamuna Manifesto" narrates the story of river Yamuna emphasizing on the significance of the river on the life of India and its people. However today, greed and callousness have turned a perennial river into a seasonal one.

It is not only a story of the origin and destination of the river, but also about its struggle faced due to man's onslaught and the apathy of the state. The fascinating book unearths the story of a river, becoming a drain attributing it to the domestic, industrial, agricultural pollution and ground water extraction. Water from the river Yamuna and its tributaries has been diverted for power generation, irrigation and drinking water purposes at various places all along its length.

The river Yamuna which has been polluted severely over the past two decades as a result of intensive urbanization in the 17 million strong capital city, has today become a subject of many debates regarding its pollution and the drive to clean it.

The book is an outcome of the Project Y – a public art and outreach project initiated by the Ministry of Culture, Hamburg, and carried out in the framework of Germany and India 2011-2012: Infinite Opportunities. Project Y is the Indian initiative of the twin-city Yamuna-Elbe Public Art and Outreach project which was held in Hamburg (October 2011) and Delhi (November 2011).

Better Safe than Sorry (Film)



Toxics Link produced a film titled 'Better Safe than Sorry' which addresses the issue of managing hospital waste. Bio Medical waste is a real threat, posing danger not just to the entire healthcare fraternity but also to the community and environment. The film depicts that if the hospital waste is not disposed properly, it can spread deadly diseases like AIDS, Hepatitis B & C, cancer and endocrine disruption. The film also narrates how Bio Medical waste can be handled with responsibility and proficiency. The film is available in Hindi and English.

Mission Mercury (Film)



The film is about Mercury, a highly toxic metal used in healthcare sectors in India. It explores the impact of mercury on human health. Mercury is a neurotoxin that adversely affects the nervous system. It is known to affect the functions of the brain, even leading to loss of memory. Some states and hospitals in India have shifted to mercury free alternatives. The film talks about HIHT in Dehradun being is one such story. The film shows how with diligent planning and training protocols in place, shift to new equipment can be a welcome experience. The film is available in Hindi and English.

Going with the flow

A look at life in and around the Yamuna

Quiet flows the Yamuna. A sacred stream for a million people. Then some more. For many, it is just a trickle of polluted water which transforms itself into a river during the monsoon. Then Yamuna is like a playful girl, now teasing the banks, now eluding them, now cheerful, now naughty. Otherwise, the river goes quiet, almost in morbid fear of being admonished if it were to make anything more than ripples. Yet quietly, unobtrusively, and often unknown even to the denizens of Delhi, life goes on around the Yamuna, on its ghats, on its often sullied waters. Every evening, the faithful gather for a pooja, an aarti, sprinkling marigold petals on its waters. Every morning, as the believers cross the Old Yamuna bridge near ISBT or the new one leading to ITO, some stop their vehicle for a few seconds, offer a coin in obeisance and move on. Others just slow down their cars or bikes, take a quick bow and move on. The river accepts them all.

At other places though, the things are not as serene or pious. There are stretches of lather arising out of the pollutants dumped into the river. There are others where frenetic construction takes away from the timelessness of the river. Again, the Yamuna flows on, impervious to the challenges, confident that she, named after the sister of the Deity of Death, can overcome them all.

Source: The Hindu 15/1/2014

Study finds toxic metals in fairness creams, lipsticks

Popular cosmetic products, including fairness creams and lipsticks, contain mercury, chromium and nickel, according to a report released by the Centre for Science and Environment (CSE) here on Wednesday.

The public research and advocacy organisation's Pollution Monitoring Lab, which conducted the study, found mercury in 44 per cent of the fairness creams it

tested. It also found chromium in 50 per cent and nickel in 43 per cent of the lipstick samples it tested. "Mercury is not supposed to be present in several leading cosmetic products. The mere presence of it in these products is completely illegal and unlawful," said CSE director general Sunita Narain.

Seventy-three cosmetic products in four different categories were tested for heavy metals. Fairness creams, lipsticks, lip balms and anti-ageing creams were tested for mercury, lead, cadmium, chromium and nickel. The samples included Indian and international cosmetic brands as well as a few herbal products.

The results showed mercury in 14 fairness creams in the range of 0.10 parts per million (ppm) to 1.97 ppm. Under the Drugs and Cosmetics Act and Rules of India, the use of mercury is banned in cosmetics.

Chromium was found in 15 out of the 30 lipsticks tested in the range of 0.45 ppm to 17.83 ppm. Nickel was found in 13 out of 30 products tested in the range of 0.57 to 9.18 ppm. However, no heavy metals were found in anti-aging creams and lip balms. The study also didn't detect lead and cadmium in lipsticks.

"To gauge the safety of cosmetic products it tested, the CSE compared the levels of heavy metals found with their acceptable daily intake (ADI) limits. The results showed whitening creams may contribute up to 71 per cent of the ADI for mercury, depending upon the product and the amount of the fairness cream used", noted the study.

This is a very high level of exposure to mercury, a neurotoxin, from just one product. Inorganic mercury present in fairness creams can damage kidneys and cause rashes, skin discolouration and scarring.

The CSE said it approached all companies with the test results of their products. Seven out of 14 companies responded. None disputed the findings.

Source: The Hindu 16/1/2014

E-Waste bins in city

Every single gadget that we use, sooner or later ends up in a trash. These electronic gadgets contain heavy metals and over 50 hazardous chemicals which when released, can cause severe health impacts and also it

severely affects our environment when these compounds are let off into the air, water or landfills. In India, Mumbai and Delhi are the highest generators of E-waste, while Kolkata is in the danger zone.

A joint study by NGO Toxics Link and Centre for Quality Management Systems, Jadavpur University estimated that around 9000 tons of e-waste was generated in Kolkata (Calcutta) city, of which around 3000 tons was from computers and peripherals only. There are reports and indications to suggest that the city not only generates waste of its own but also receives waste from the adjoining states. By the end of the next decade the potential e-waste in the city is expected to touch 145000 tons annually.

To address this problem of e-waste in the city, Toxics Link with active support of the West Bengal Pollution Control Board (WBPCB) had launched a project to set up collection mechanism for E-waste in the city, last year on 5th June 2012 on the occasion of World Environment Day.

On the same day, the first E-waste bin was placed at Paribesh Bhaban, Head Office of West Bengal Pollution Board (WBPCB) and the bin was inaugurated by Prof. Binay K. Dutta, Chairman of WBPCB. This project is under the European Union commission supporting four city projects on Establishing E-Waste Channels to Enhance Environment Friendly Recycling (WEEE Recycle). The project plan initially was to install 20 collection bins in the city but finally 15 have been placed at 14 different public locations.

These bins are serving a dual purpose of establishing collection mechanisms and creating awareness on promotion of environment friendly e-waste recycling in the city. The bins are successfully placed in important public locations for maximum visibility and impact (See box)

Monalisa Datta, the Project Manager of Toxics Link says, "Recently we have removed the bin placed at Indian Museum due to disposal of huge quantity of other wastes, except e-waste by the visitors. Hopefully we will place it at any other suitable location where it can serve its purpose in a better way."

In places like ITC Sonar Hotel, Tata Centre, people's response is very good as staff, visitors and who ever come, drop off

their personal electronic items in the bins while places like Indian Library, Science Colleges have moderate amount of E-waste collection, continued Monalisa. The bins are linked with an authorised Gurgaon-based recycling company, which has an office in Kolkata to collect the e-wastes disposed off into the bin periodically and

ensures safe recycling of E-waste, so we know that our electronic waste is not harming our environment!

As this project requires voluntary participation of the public to give in their old disposable electronics, neither they charge anything for recycling nor they give any cer-

tificates or rewards to people who drop their E-wastes in the bins. Toxic Links have done a great job and we hope everyone becomes responsible enough to throw their disposable electronic wastes in these E-waste bins only and become an environment saver!

Source: *Earths miles.net* September 2013

FACT FILE

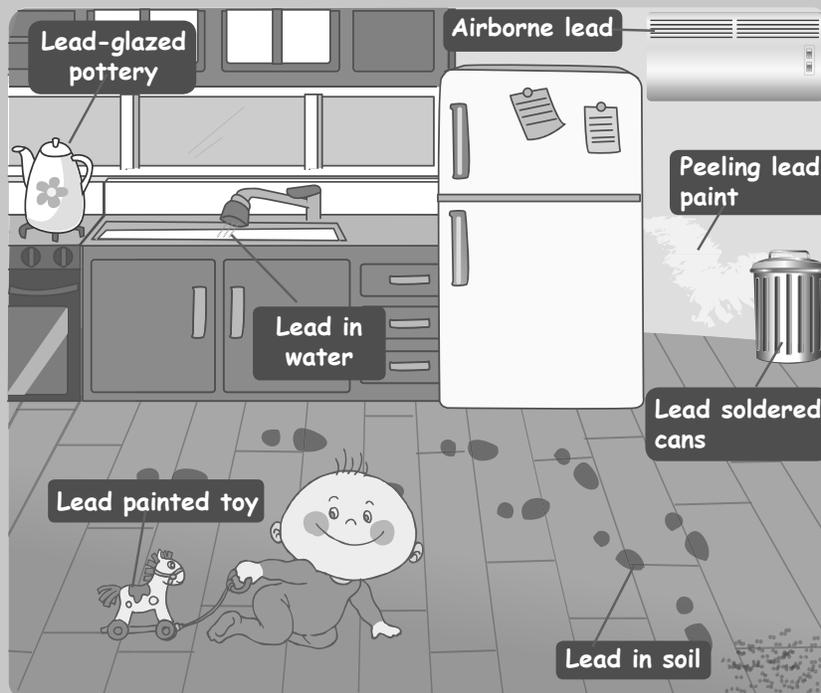
Painting Toxins

All of us like to live in houses clad in multi toned, eye catching colors. But none of us realize that behind the vibrant color that has hued our home is a potent neuro-toxic chemical- Lead. Manufacturers of paints add lead compounds as it provides color vibrance; has the ability to hold pigment and impart high degree of corrosion resistance to paints.

However, lead in paint is one of the largest sources of exposure to lead and poses significant health risk. Lead poisoning is the oldest recorded occupational disease which even at the lowest dose can impair the nervous system and adversely affect almost every organ and system in your body. The risk is especially high for pregnant women and young children. According to the Blacksmith Institute's 'World's Worst Pollution Problem Report' (2010), Lead is the deadliest of the top six threats globally and that 18-22million people worldwide are currently impacted.

Lead can get into our bodies if we:

- Breathe in lead dust (especially during activities such as renovations, repairs, or painting that disturb painted surfaces).
- Swallow lead dust that has settled on food, food preparation surfaces and other places. Ingestion is the most common route of exposure to lead for children.
- Eat paint chips or soil that contains lead.



Did You Know?

- **In children**, the main target for lead toxicity is the nervous system. Even very low levels of lead in the blood of children can result in: Permanent damage to the brain and nervous system, leading to behavior and learning problems, lower IQ, and hearing problems, Slowed growth, Anemia. In rare cases, ingestion of lead can cause seizures, coma and even death.
- **In pregnant women**- Lead can also be circulated from the mother's blood stream through the placenta to the fetus. Lead in a pregnant woman's body can result in serious effects on the pregnancy and her developing fetus like Miscarriage, Reduced growth of the fetus and premature birth. Lead can also be transmitted through breast milk
- **In adults**- Adults exposed to lead can suffer from: Nerve disorders; Cardiovascular effects, in increased blood pressure and incidence of hypertension; Decreased kidney function; Reproductive problems (in both men and women)

So, think twice before you smear your house with dazzling colors!

Source: *Environment Protection Agency*



CALL FOR ENTRIES "QUOTES FROM THE EARTH – 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, in December, 2014.

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

"Quotes from the Earth" has been the first of its kind in the Indian capital since 2004. 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 happens to be one of the most powerful medium of communication and discussion.

The festival 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.

To be a part of "Quotes from the Earth", please send your entries to:

Contact: Rambha Tripathy | E-mail: rambha@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

Quotes from the Earth is a compilation of films on the themes of Hunger, Water, Survival, Wildlife, Conservation. To Screen the films in your city, write to us at rambha@toxicslink.org.

You can view the details of the films at: www.toxicslink.org/filmfestival/2012/index.html.

TOXICS ALERT

An environment news Bulletin

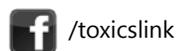
Visit: <http://enews.toxicslink.org/>, for our monthly e-newsletter on environment related to news, articles, policy interventions, events on toxicity and its management. You can also subscribe to it to receive its updates via e-mail.



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



DELHI

H-2, (Ground Floor), Jangpura Extension, New Delhi - 110014
T: +91-11-24328006, 24320711
F: +91-11-24321747
E: info@toxicslink.org

www.toxicslink.org