

T O X I C S DISPATCH



Toxics Link
for a toxics-free world

A newsletter from Toxics Link

Number 37 November 2009

FOR PRIVATE CIRCULATION ONLY

Mobile Phone, Immobile waste

35 million discarded phones, 5000 tonnes of e-waste in India

Mobile phone is the most important communication tool in our life today. With a high obsolescence rate, mobile phones have emerged as a new and significant stream of waste that needs to be addressed and dealt with.

India is one of the largest mobile phone markets in the world. Our economic progress in the last decade has resulted in tremendous growth in the Telecom sector. Within just a span of one month in January this year, India gained a staggering 15.41 million new mobile subscribers, taking the country's tally of wireless subscribers to 362.3 million, up from 233.63 million in the same month a year ago.

The Indian mobile phone market, which is thriving even under these harsh economic conditions, adds an approximate 10 million subscribers per month,

The Toxic Toy in Your Hand

- 108 Million Mobile phones sold in 2008 in India...set to touch 130 million by 2009
- 12,000 mobile phones sold every hour in India
- 18 Months average handset replacement period in India
- 30-35% mobile phones sold as replacement phones

as against China's monthly addition of 8 million subscribers. The latest report by the Telecom Regulatory Authority of India states that India had a tele-density of 34.5% (as of January 2009), up from 33.2% in December last year. International research firm Gartner estimates that the Indian mobile market will expand to 737 million subscribers by 2012. Considering that mobile phones have only reached 20% of our population India yet, the potential for a market explosion is huge.

Mobile phones and their related infrastructure systems have helped the



IN THIS ISSUE

1 LEADER

- ▲ Mobile Phone, Immobile waste

2 EDITORIAL

3 FEATURES

- ▲ Emerging POPs

7 UPDATES

- ▲ An Initiative for Health Care Waste Management in The Twin-City of Karnataka
- ▲ Regional Workshop
- ▲ International Conference on Heavy Metals and E-Waste

11 INTERVIEW

- ▲ Kavitha Kuruganty

16 GREENSPEAK

economy grow in many ways. Better communication has meant greater accessibility, resulting in higher returns for both business individuals. But the downside of this important digital revolution is the waste that is generated through end of life mobile phones. Despite their small size, mobile phones create significant volumes of waste because of their obsolescence rate—due to malfunctions or replacement on account of development of newer models with fancier features.

Continued on page 2

Nuclear Energy—bane or boon?

India is slated to increase its nuclear energy production from the current 4120 MW to 63,000 MW by 2032. It will need a massive increase from the 17 existing reactors we have today. To aid this new cooperation agreements have been signed with Canada, France and Russia, etc, and others are on the way. Alongside, to encourage entry of private industry into civilian nuclear power, last month the Cabinet approved a Bill to limit the liability of private companies, in the remote and unfortunate event of an accident to a cap of Rs 2400 crores. The balance of the cost will be borne by the GOI, if the Bill gets Parliament approval.

The other side of nuclear power relate to issues of waste management, its storage, transport, handling and disposal. Unfortunately there is very little awareness or public information about this key issue, which has kept countries like Germany and the US from building new nuclear power plants for several decades now. No doubt the new Indian market is a windfall for the international nuclear industry that has been stagnating for a long time now.

The lack of public debate is worrying. The mainstream newspapers have only taken the strategic view on this new thrust, but have not engaged with the cost of risk minimization and waste disposal. It clearly shows that they have not educated themselves on this aspect. Currently all information of the nuclear program is held by the Department of Atomic Energy, which is the main body dealing with the issue. However, with the slated building of, literally, thousands of new reactors, the issue needs information and transparency.

Siting of these reactors is going to be a significant problem. Already at two proposed sites in Ratnagiri and Sindhudurg Districts (Maharashtra), where the projects are at an advanced stage and land acquisition notices have been served on the local people, environment clearances are yet to be granted,

Also for very long now, reported problems of health impacts on tribal communities who live near uranium mines at Jadugoda have been ignored or brushed aside. Similarly reports of improper waste management near some reactor sites have been set aside. Clearly in the new phase of expansion, transparent mechanisms for public information and engagement need to be set up.

In a first report done on this issue, by Toxics Link, Half Life – Nuclear Waste in India, (2009) these issues come out clearly. In fact there is no official figure even on the amount of nuclear waste generated so far. Nuclear energy is being revisited in the climate change scenario. However this is one path which needs to trodden upon with great care. This can only happen if citizens decide to participate.

Ravi Agarwal

Continued from page 1

30-35% mobile phones sold in the country are sold as replacement phones, meaning they are sold to individuals who already have a mobile handset and who discard the old phone on the new purchase. This means around 35 million phones are discarded in India every year, i.e. around 5000 tonnes of E-waste is generated in the country annually from just mobile phones. This huge volume of waste becomes a greater concern because of its toxic constituents. As with most electronic equipment, mobile phones contain a range of substances that are harmful unless the devices are disposed off properly.

Toxics in Mobile Phones

While the constituent parts of mobile phones differ from one manufacturer to another in degree, their general composition is similar. According to a study, an average mobile phone contains 45% plastics, 40% printed wiring (or circuit) board, 4% liquid crystal displays (LCD), 3% magnesium plates, and 8% metals. The environmental crisis stems from the fact that mobile phones contain a large number of hazardous and cancer-causing compounds that pollute our air, soil and water.

Many of the toxins in mobile phones – including antimony, arsenic, beryllium, cadmium, lead, nickel, and zinc – are persistent toxins, meaning they linger in the environment for long periods of time without breaking down. These persistent and bio-accumulative toxins (PBTs) have been associated with cancer and a wide range of reproductive, neurological, and developmental disorders. Since PBTs accumulate in fatty tissue of humans and animals, they get gradually concentrated as they move up on the food chain, putting those at the top of the food chain at the greatest risk.

Why and how are these recycled?

Waste from mobile phones form a significant part of the total E-waste generated in India. Recycling this waste is lucrative because it contains precious metals such as gold, silver and valuable materials like copper, but the presence of toxins like lead, and cadmium make the recycling process hazardous and unsafe. This concern is heightened because of the improper ways in which this waste is recycled in the country.

Mobile phone waste, like most E-waste, is recycled using primitive techniques, in backyards and alleyways, by informal, uneducated workers, who have no knowledge of the hazards and the associated risks. The use of rudimentary processes like open burning and acid baths result in toxic exposure to the workers and environmental contamination. Furthermore, the non-recyclable components and materials are dumped in nearby fields and water bodies, raising the possibility of toxins leaching into soil and water.

Who is responsible?

The responsibility of managing this waste lies with both the government and the companies bringing these products into the market.

Handset manufactures are the most important stakeholders in this emerging scenario. These companies can make a difference by designing mobile phones and their accessories for disassembly, reuse, and recycling. This, along with reduction in the use of toxic materials in manufacturing, will be very effective in reducing the quantity as well as the risks associated with recycling this waste. Universal chargers are a step in this direction, with most mobile phone brands deciding to implement this in Europe by 2010. Similar steps need to be taken - not just in Europe, where legislation demands it, but also globally, and even more so in developing countries like India, where the problem is acute.

Globally, most mobile phone companies have take-back systems, through which they collect phones discarded by the consumer and ensure safe recycling. In India, we are still at a nascent stage on this aspect, with only few companies providing this facility. Unfortunately, due of low public visibility, take-back procedures are not known to most consumers, resulting in very low return rates. Companies need to do much more to educate consumers and evolve a complete system for the safe management of these toxic toys. Advertising at the point of sale, web-based information on both

toxins and take-back schemes and better infrastructure for collection are critical to deal with mobile phone waste effectively. The current scenario is inadequate as major manufacturers of mobile phones are still shy of their responsibilities; they need to come forward and put in place effective measures.

The Government can play a major role in facilitating this whole process. Lack of proper legislation and lax implementation has resulted in mismanagement of this valuable but hazardous waste. Currently there are no rules in the country that bind either manufacturers or consumers to manage and dispose off this waste in an environmentally safe way.

Consumer awareness

Even if the government and the companies do play their part correctly, the whole system will collapse if the consumers or the phone users do not play their part. The users of mobile phones need to think twice before discarding a phone and adding to this toxic waste stream. They need to ensure that their old phone and the battery are not thrown into regular garbage bins or given to improper recyclers. They need to deposit these with authorized recyclers or to the original mobile companies.

Re-use is the most important part of the solution. In re-using or extending the life of a mobile phone, we can avoid the need for a new one to be produced – which has the best overall environmental benefit. Recycling is important where phones cannot be re-used, since at least the components or substances of the phone can be recovered. The energy and raw materials used to produce millions of new mobile phones every year contributes significantly to CO₂ emissions and global warming. Each time we reuse or recycle a mobile phone, we avoid the need to produce a new one, which in turn generates savings in energy use, water use and cut down greenhouse gas emissions.

So, before you simply trash your current mobile phone, think twice; if you're not careful, the toxic toy in your hand may end up polluting the air you breathe, the water you drink or the food you eat.

Priti Mahesh

What can I do?

- ✓ Re-use: Hand your old mobile phone down to another user, like your old jeans
- ✓ Recycle: Check the take-back policy of your handset manufacturer or deposit phone & accessories only to authorized recyclers

FEATURES

Emerging POPs

Persistent Organic Pollutants (POPs) are chemical substances that persist in the environment, bioaccumulate through the food web, and pose a risk of causing adverse effects to human health and environment. Many POPs are currently used being pesticides. Others are used in industrial processes and in the production of a range of goods such as solvents, polyvinyl chloride and pharmaceuticals. POPs are transported across international boundaries far from their sources, even to regions where they have never been used or produced. These synthetic chemicals move everywhere, even through the placental barrier and into the womb, exposing the unborn during the most vulnerable stages of development.

Sources of POPs

The major sources of POPs are the manufacturing sector, product application and use, recycling processes, thermal processes, waste disposal and reservoirs (Source: World Bank).

The deliberate production and use of most POPs have been banned around the world, with some exemptions made for human health considerations (e.g. DDT for malaria control) and/or in very specific cases where alternative chemicals have not been identified. However, the unintended production and/or the current use of some POPs continue to be an issue of global concern.

Stockholm Convention on Persistent Organic Pollutants (POPs)

Concerned by the global risks posed by the long-range transport of POPs, the

international community has called for a global action to reduce and eliminate release of these chemicals. In May 2001, the Stockholm Convention on POPs was adopted. The Convention recognized that a global effort is required to address the threat of POPs and it has been working to eliminate and restrict the use and production of a number of the world's most dangerous chemicals. It was brought about as a global treaty to protect human health and environment from POPs. The Convention seeks the elimination or restriction of production and use of all intentionally produced POPs (i.e. industrial chemicals and pesticides), and the continuing minimization and, where feasible, ultimate elimination of releases of unintentionally produced POPs, such as dioxins and furans. It also includes that the stockpiles must be managed and disposed of in a safe, efficient, and environmentally

Effects of New POPs

Substance	Effects
Alpha HCH	Alpha-HCH has been shown to be neurotoxic, hepatotoxic, and to cause immunosuppressive effects and cancer in laboratory animals. Several epidemiological studies indicate that alpha-HCH might play a role in human breast cancer as well as hormonal disorders leading to infertility and abortions.
Beta HCH	Toxicological studies with beta-HCH have demonstrated neurotoxicity and hepatotoxicity. Also reproductive and immunosuppressive effects and effects on fertility were seen in laboratory animals. Several epidemiological studies indicate that beta-HCH might play a role in human breast cancer. Beta HCH is acutely toxic to aquatic organisms and shows estrogenic effects in fish.
Chlordecone	The pesticide is both acutely and chronically toxic, producing neurotoxicity, immunotoxicity, reproductive, musculoskeletal and liver toxicity. Chlordecone is very toxic to aquatic organisms, with the most sensitive group being the invertebrates.
HBB	Hepatotoxicity, effects on the thyroid, and endocrine disruption including effects on reproductive capacity in rats, mink and monkeys. There is epidemiological evidence of hypothyroidism in workers exposed to polybrominated biphenyls and of increased incidence of breast cancer in exposed women.
Lindane	Hepatotoxic, immunotoxic, reproductive and developmental effects have been reported for lindane in laboratory animals. The most commonly reported effects associated with oral exposure to gamma-HCH are neurological including seizures and convulsions in individuals who have accidentally or intentionally ingested lindane in insecticide pellets, liquid scabicide or contaminated food
OctaBDE	Unfortunately, the available information on the toxicity and ecotoxicity of hexa to nonaBDE [which make up commercial OctaBDE] is very limited. Effects on mammals and birds include slight fetotoxicity, increased liver weights, and delayed skeletal ossification. Other observed effects include immunotoxicity and neurotoxicity. There is increasing evidence suggesting similar toxicological profiles and therefore, equivalent hazards and concerns, between PBDEs and PCBs. Components of the octaBDE mixture may be released to the environment by debromination of commercial decaBDE.
PentaBDE	Toxicological studies have demonstrated reproductive toxicity, neurodevelopmental toxicity and effects on thyroid hormones in aquatic organisms and in mammals. Information is lacking on the effects in humans of short-term and long-term exposure, although it is to be expected that vulnerable groups can be pregnant women, embryos and infants.
PeCB	PeCB is moderately toxic to humans. Animal studies reveal effects including decreased thyroxine, abnormal sperm, and histopathological effects on the kidneys. Pentachlorobenzene is very toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.
PFOS	PFOS has demonstrated toxicity towards mammals in sub-chronic repeated dose studies at low concentrations, as well as rat reproductive toxicity with mortality of pups occurring shortly after birth. Environmental toxicity data for PFOS is predominantly found for aquatic organisms such as fish, invertebrates and algae, and for birds. PFOS is toxic to aquatic organisms with mysid shrimp and Chironomus tentans being the most sensitive organisms.

sound manner. Currently 128 countries are parties to the Convention. The Convention has initially focused on 12 intentionally and unintentionally produced chemicals also known as the 'dirty dozen'.

A Committee, POPRC (Persistent Organic Pollutants Review Committee) that is a subsidiary body to the Stockholm Convention has been established for reviewing chemicals proposed by Parties for listing in the Convention. The POPRC consists of 31 government-designated experts in areas of chemical assessment or management from all UN regions. POPRC considers additional candidates for the POPs list on

a regular basis to ensure that the treaty remains dynamic and responsive to new scientific findings.

POPRC Review process

The POPRC reviews proposals submitted by Parties to the Convention. The Stockholm Convention including Article 8 and Annexes D, E, F establishes the rules for identifying and listing additional POPs. Any country that has ratified the Convention can submit a proposal to the Secretariat for listing a chemical in Annexes A [for elimination], B [for restriction] and/or C [for unintentional production].

However, the proposal needs to contain the information specified in Annex D (Information Requirements and Screening Criteria).

New POPs

Following the recommendations of the POPRC at its fourth meeting in May 2009, the Conference of the Parties of the Stockholm Convention decided to add nine new Persistent Organic Pollutants ('nasty nine') in Annexes A, B or C to the Convention to the existing list of the dirty dozen.

The following nine new Persistent Organic Pollutants have been added in annexes A, B or C to the Convention: alpha hexachlorocyclohexane (Annex A); beta hexachlorocyclohexane (Annex B); chlordecone (Annex A); hexabromobiphenyl (Annex A); hexabromodiphenyl ether and heptabromodiphenyl ether (Annex A); lindane (Annex A); pentachlorobenzene (Annex A and Annex C); perfluorooctane sulfonic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOSF) (Annex A or Annex B); tetrabromodiphenyl ether and pentabromodiphenyl ether (Annex A).

USES of New POPs (Source: www.ipen.org)

Chlordecone has been used extensively in the tropics for the control of banana root borer and also in household products such as ant and cockroach traps.

Pentachlorobenzene (PeCB) has been used in the past as a pesticide and flame retardant as well as with PCBs in dielectric fluids for electrical equipment. PeCB is also unintentionally produced and released to the environment by many of the sources that produce dioxins and furans.

Lindane has been used broadly in seed and soil treatment but due to its toxicity has been banned in 52 countries and severely restricted in 33 others. Lindane has also been added to shampoo to control head lice in children.

Lindane's related isomers, alpha hexachlorocyclohexane (alpha HCH) and beta hexachlorocyclohexane (beta HCH), are waste products generated during production of lindane. Millions of metric tons of toxic alpha HCH and beta HCH wastes need to be cleaned up.

Three **Brominated Flame Retar-**

dants recommended for listing include hexabromobiphenyl (HBB), components of commercial pentabromodiphenyl ether (C-PentaBDE), and components of commercial Octabromodiphenyl ether (OctaBDE). All three have been used as additives to resist the spread of fire in commonly used consumer products. HBB is no longer in production but was formerly used in electrical products and in polyurethane foam for auto upholstery.

C-OctaBDE is a mixture of several polybrominated diphenyl ethers including substances containing six, seven, eight, and nine bromines.

PFOS and its related substances have been used in a variety of products and processes including fire fighting foams, carpets, leather goods, upholstery, packaging, industrial and household cleaning products, pesticides, photographic applications, semiconductor manufacturing, hydraulic fluids, catheters and metal plating.

Some References Pertaining to India

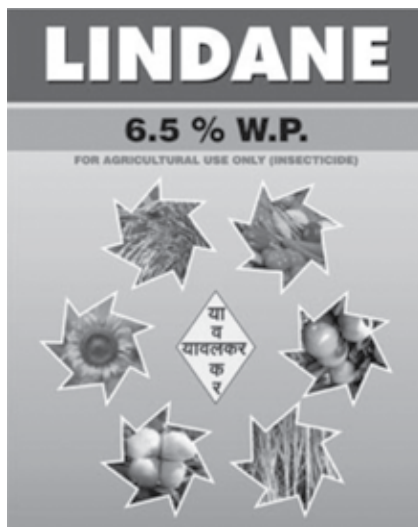
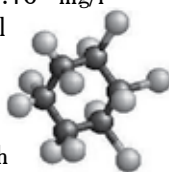
(Source: <http://www.toxiclink.org/docs/newpops.pdf>)

Lindane

Lindane has been detected in cow's milk in countries that still use the chemical as a pesticide. In India, blood levels of gamma-HCH were significantly higher in 135 breast cancer patients, 41-50 years of age, compared to a control group without the disease. However, in similar studies in other countries, a correlation between breast cancer incidence and elevated levels of gamma-HCH in blood was not observed (ATSDR, 2005).

Alpha HCH

Alpha-HCH has been found in cow's milk in countries where HCH had been used recently. A study on breast milk in India conducted by Nair et al. in 1992 and 1996 showed 0.16 mg/l (mean) and 0.045 mg/l alpha-HCH respectively. The association between alpha-HCH exposure and intrauterine growth retardation (IUGR, <10th percentile of birth weight for gestational age) was examined in India. Statistically significant associations ($p < 0.05$) between maternal blood levels of alpha-HCH and intrauterine growth retardation were found (Siddiqui et al., 2003).



Beta HCH

According to Li and Macdonald (2005) global usage of technical HCH was dominated by 10 countries headed by China, which consumed almost half of the total global quantity. The other countries were (in order of decreasing usage): Former Soviet Union, India, France, Egypt, Japan, United States, East Germany, Spain and Mexico. Usage of technical HCH was banned in most western countries and Japan in the 1970s but continued in China and Russia until 1983 and 1990. In 1990, India also banned technical HCH for agricultural use but kept it for public health uses (AMAP, 2004). High concentrations were reported for India due to agricultural use and Malaria control activities. Blood serum samples from India contained up to 0.02 mg beta-HCH/l, whereas adipose tissue contained up to 0.18 mg/kg (Nair and Pillai, 1992).

Problems of POPs in India

Despite the fact that most short-listed POPs are banned from use, production, import or export in India, a combination of factors has led to their continued production, trade, use and release into the environment. The trade in POPs after their ban is an indication of the continued existence of possible hotspots in India in terms of production and storage facilities. It is suspected that DDT, which is allowed for vector control but banned for agricultural purposes, is pilfered and used as an insecticide. The stockpiles of obsolete POPs exist, posing a major threat to the environment and there

is no known government programme to monitor them. The State Pollution Control Boards, however, do have the responsibility to identify and notify sites storing hazardous material (Source: Infochangeindia, Papiya Sarkar).

The problems associated with POPs are too large, complicated and expensive for any individual nation to tackle. Hence, the industries and the government should take concerted efforts to eliminate POPs and seek safer alternatives. Some of the major challenges for the Government of India towards phasing out of POPs are to establishment of inventories on the production, use, trade, stockpiles and waste generated by POPs sites contaminated by the chemicals that are listed in the Annexes of the Convention and exist in India. There is also the other major concerns surround the sites a need to develop strategies and action plans for the reduction of POPs.

POPs and their effects on human health and the environment is a global issue of concern. These pesticides, industrial chemicals, or unwanted byproducts of industrial and other processes are highly toxic and long lasting, and cause an array of adverse effects, including disease and birth defects in humans and animals. Some of the severe health impacts from POPs include cancer, damage to the central and peripheral nervous systems, reproductive disorders, and disruption of the immune system. Thus it becomes imperative to phase them out at the earliest.

Ragini K. Taneja

Right to breathe non-toxic air

Everybody has the right to breathe clean, non-polluted air. However, due to the presence of toxins in both indoor and outdoor air this right is violated. In developing countries the highest air pollution exposures occur in the indoor environment. Along with volatile organic compounds (VOCs), Polycyclic aromatic hydrocarbons (PAHs), polychlorinated dibenzo-p-dioxins (PCDDs) and dibenzo-furans (PCDFs) is another organic pollutant, which has long lasting impact on environment and health.

Sources: These toxic organic air pollutants are emitted from many sources like burning of biomass, transport sector,

incineration of waste material, power plants etc. Let's take a closer look at these truly anthropogenic toxics.

PAHs, PCDDs and PCDFs are important persistent organic pollutants (POPs), which are formed as unwanted byproducts. PAHs formed from partial burning of fuels (UNECE, 1998) whereas PCDDs/Fs from bromine and Chlorine rich compounds. These chemicals are purely anthropogenic and do not exist in nature.

Chemical Structure: PAHs are made of more than one benzene ring structure. Number of rings in the basic chemical skeleton determines their physical property. A lighter one like Naphthalene, having 2-benzene rings is volatile in nature. Whereas the tendency of the PAHs for particulate bound increases with increase in the no. of rings.

PCDDs are made of two benzene rings interconnected by two oxygen atoms, whereas PCDFs consist of benzene rings conjunct by a carbon bond and an oxygen bridge. The number of chlorine atoms bound to the PCDD or PCDF molecule ranges from

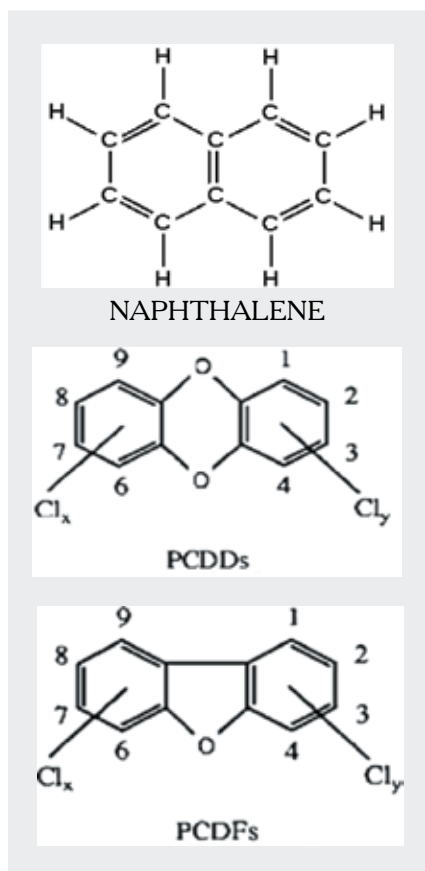


Table 1: showing relative cancer potency of PAHs species with respect to BaP

PAHs	IARC Class- Human	US EPA	Relative cancer potency factor		
			Nisbet and LaGoy, 1992	Malcolm and Dobson (1994)	Nielsen et al., 1996
3,6 dimethyl- phenanthrene	—	—	NA	NA	0.005
Anthanthrene	—	—	NA	NA	0.3
Anthracene	3	D	0.01	0.01	0.0005
Dibenzo[a,h]anthracene	2A	B2	NA	1.0	0
Benzo[a]anthracene	2A	B2	0.1	0.1	0.005
Benzo[a]pyrene	2A	B2	1.0	1.0	1.0
Benzo[b]fluoranthene	2B	B2	0.1	0.1	0.05
Benzo[b]fluorene	—	—	NA	NA	0
Benzo[e]pyrene	3	—	NA	0.01	0.002
Benzo[ghi]perylene	NA	NA	0.01	0.01	0.02
Benzo[j]fluoranthene	—	—	NA	NA	0.05
Benzo[k]fluoranthene	2B	B2	0.1	0.1	0.05
Chrysene	3	B3	0.01	0.01	0.03
Coronene	3	—	NA	0.001	0.01
Dibenzo[a,j]anthracene	—	—	NA	NA	0
Dibenzo[a,l]pyrene	2B	NC	NA	NA	0
Fluoranthene	3	3	0.001	0.001	0.05
Indeno [1,2,3-cd]pyrene	2B	B2	0.1	0.1	0.1
Naphthalene	2B	—	0.001	0.001	0
Perylene	3	—	NA	0.001	0.001
Phenanthrene	3	D	0.001	0.001	0.0005
Pyrene	3	D	0.001	0.001	0.001
Triphenylene	—	—	0	0	0.03

Where, 2A: probably carcinogenic to human (sufficient evidence for human cancer); 2B: possibly carcinogenic to human (sufficient evidence for animal cancer and possible evidence for human cancer); 3: not classifiable as to human and animals (inadequate evidence for animal cancer and evidence for mutagenicity); B2: probably carcinogenic to human (inadequate evidence in human cancer and sufficient evidence in animal cancer); D: not classifiable as to human and animal (inadequate evidence in animal cancer).

Table 2: Comparison of PAH concentration in Indian mega-cities with others

Year	Total PAHs	Mean (ngm ⁻³)	Cities	Reference
1990	Σ8 PAHs	150–1800	Delhi	Shankar (1990)
2002	Σ12PAHs	668 ± 399	Delhi	Sharma et al., (2007)
2003	Σ12 PAHs	672 ± 388	Delhi	Sharma et al., (2007)
Not specified	Σ PAHs	969.25	Kolkata	Rao et al., 2008
	Σ PAHs	850.2	Mumbai	Rao et al., 2008
	Σ15 PAHs	166	London	Halshall et al., 1994
	Σ15 PAHs	412	Austria	Jaklin and Krenmayr., 1985
	Σ11 PAHs	310	Mexico city	Marr et al., 2004

1 to 8 resulting in a total of 75 PCDD congeners and 135 PCDF congeners. Each individual PCDD or PCDF molecule is called a congener, and congeners with the same number of chlorine atoms are grouped as homologues (Zeng et al 2008). (In a box)

Emissions from the use of traditional fuels are of great concern from the point of indoor air pollution.

Why to worry about: These are persistent in nature and have long-range trans-boundary movement. These are even found in the Arctic though it is quite far from global source regions. PAHs are well known carcinogens and teratogens, whereas PCDDs/Fs for their acute toxic.

Cancer potency and toxic equivalency factor: Benzo[a]pyrene (BaP) was the first established carcinogen and used as a 'marker' to set air quality standards (Nielsen et al., 1996). The relative cancer potency (RP) of PAH species varies and are established by various researchers (Nisbet and LaGoy, 1992;



Malcom and Dobson., 1994) over time by referring BaP as 1.0. Generally toxicity of PAHs increases with their size/molecular weight. PCDD/Fs are quantified in terms of toxic equivalency factor (TEF) as per the NATO/CCMS (1998) scheme, and the most toxic congener tetra chlorinated dibenzo-n-dioxins (TCDD) is rated as 1.0 (Kutz et al., 1990).

The toxic organic pollutants are emitted from burning biomass, transport sector, incineration of waste material and power plants.

International Conventions: Recognizing regional and global challenge Stockholm Convention on POPs was promulgated (UNEP, 2001). The Stockholm Convention entered into force on May 2004 (151 signatories and 118 Parties as of 17 February 2006). The Stockholm Convention targets 12 POPs (the so-called “dirty dozen”) for reduction and eventual elimination, and sets up a system for evaluation of additional chemicals for consideration. According to Stockholm Convention on persistent organic pollutants (POPs), signatory countries have obligation to reduce their emission as base year 1990 (Lohman et al., 2007).

Another international agreement is the 1979 Geneva Convention on long-range transboundary air pollution (LRTAP), which has 50 Parties (UN/ECE, 1979). The LRTAP convention has been extended by the 1998 Aarhus protocol on persistent organic pollutants (POPs), which entered into force by the end of 2003 (25 ratifications as of January 13, 2006). For mitigation parties are increasingly needed to (a) understand and predict source–receptor relationships for such contaminants within both a scientific and regulatory context, and

(b) develop sound emission reduction strategies.

Ambient air quality standards: Some countries have adopted or are considering adopting ambient air quality standards for selected PAHs (EU, 2001). For example, the United Kingdom has proposed annually averaged air quality standard for benzo[a]pyrene equal to 0.25 ng/m³, whereas ambient national air quality standard of particulate bound PAHs in India is being proposed equal to 1 ng/m³. (CPCB, Nov 2009)

Megacities in India: PAHs concentration in Indian megacities is much more than others like London and Mexico City. Transport emerged as an important PAHs contributor to the ambient air in megacity Delhi (Sharma et al, 2007) whereas burning of biomass and coal are important for Kolkata. Emissions from the use of traditional fuels (biomass and coal) are of great concern from indoor pollution point and hence a matter of serious health concern. So far very little has been done as far as PCDDs/Fs in India is concern and there is need for policy regulations.

Dr. Ragini Kumari

UPDATES

An Initiative for Health Care Waste Management in The Twin-City of Karnataka

Medical waste, if not handled properly, can pose a serious threat to human and environmental health. Infectious waste can spread diseases such as hepatitis and HIV, toxic chemicals such as mercury can cause permanent damage to adults and children, and the burning of plastics, particularly PVC, can release pollutants into the atmosphere to contaminate the environment for decades to come.

Though we have Bio Medical Waste (Management & Handling) Rules 1998, on how medical waste should be handled in India, but experience shows that they are not always observed. Used syringes are

packaged and resold, dirty bandages are used to stuff cheap mattresses and patients and carers are unknowingly breathing in mercury fumes from broken thermometers. On the other hand, most of the waste produced by medical centres is harmless if it is segregated and handled properly, and much of it can be recycled at a profit.

Health Care Without Harm and Toxics Link with the support of Deshpande Foundation have been implementing a ‘Sustainable Health Care Waste Management Project’ for more than two years now, in hospitals and clinics of Hubli Dharwad Municipal Corporation (HDMC) in Karnataka. The Hubli-Dharwad Sustainable Healthcare Waste Management Project was set out to facilitate the bio medical waste management in the hospitals and clinics of the district to improve their practices so that they can reduce harm and save money.

Before this intervention in the bio medical waste in wards, the situation was very poor. The wards did not have the colour-coded bins and the segregation of waste was not taking place properly. Since the staff was not aware of the occupational health hazards involved in health care waste management, they were bothered of using the protective equipments. All kind of waste used to be disposed off in a mixed be manner. Staff nurses were not bothered about cutting the needle after giving the vaccine to the patients.

To ensure the greatest benefit to the community, the project prioritized the public healthcare service run by the Hubli-Dharwad Municipal Corporation (HDMC).

To demonstrate the scientific management of bio-medical waste, a project was initiated with four wards of four HDMC hospitals. Each model ward was provided

with color coded bins for segregation of waste at source, needle cutter to destroy the needle, disinfectants for disinfections, spring balances for weighing the wastes, personal protective equipments like gloves, facemask, apron, gumboots, and eye protective. All HDMC health care staff has been trained through ongoing trainings. Training of Trainers (TOT) has commenced to create a pool of people experienced in passing on their knowledge and give the HDMC the capability of maintaining high standards of waste management in the long term.

As a result of the collaborative efforts of HDMC health care facilities, HCWH and Toxics Link, the project has developed two model wards namely Chitaguppi hospital, Hubli and Old Bus Stand Hospital, Dharwad and two model clinics i.e. Ganesh Pet and Navanagar, Hubli to demonstrate the best practice on bio medical waste management. The staff of these wards has been actively participating in managing the medical waste successfully since the last more than one year. These models may



Training program for healthcare staff



Demonstration of Bio-Medical waste segregation and use of PPE's



be the showcase models, not only for the other hospitals in the district but also for the entire state of Karnataka. Now, the Hubli Dharwad Municipal Corporation (HDMC) has adopted the bio medical waste management as a part of its system

and has planned to scale it up to all the hospitals of the district. This is the big achievement of the project and ensures the sustained waste management in the hospitals.

Mohammad Tariq Gaur

Regional Workshop

Regional workshop on the initiatives towards making Toxics Free health care was organized by Toxics Link at Dehra Dun on 25 and 26th November. The conference saw presence of a number of pre-eminent speakers like Dr. G.C. Bounthiyal, CMO, Dehradun, Dr. H.C. Bhatt, Director, Medical & Health Services, Dehradun, Uttarakhand, Shri Ankur Kansal, Environment officer, Uttarakhand Environment Protection & Pollution Control Board, Dr. R. P. Bhatt, Joint Director, Training, Department of Health, Dehradun, Dr. Pratima Gupta, Department of Microbiology, Himalayan Institute Hospital Trust, Dehradun, Dr. Saravjeet Singh, Consultant, BHEL, Haridwar, Dr. Kathleen McKeehan, Dr. Yogesh Saxena, HIHT, Dehradun and Dr. Anil Gautam, People's Science Institute (PSI), Dehradun.

In the first technical session on Bio Medical Waste Management in Health Care, chaired By Mr Satish Sinha, Associate Director, Toxics Link, questions were

raised about the monitoring of regulations related to Bio Medical Waste (BMW) management rules and the role of Uttarakhand Environment Protection & Pollution Control Board to curb any violation

The fate of plastics in BMW was also under scrutiny. Some of the participants suggested that a possible remedy could be in reuse and resale of this plastic. Entrepreneurship opportunities were explored at the primary and community health centres in order to ensure safe disposal of BMW, especially for the waste, that did not require incineration. A suggestion was made about using AD syringes for curative purposes along with immunisation in order to prevent reuse of syringes.

Inspired by the HIHT example, some of the participants suggested the option of carrying the immuniser with the sharps container while going for a vaccination programme in the remote hilly areas. This would prevent the use of needle destroyer at a later stage and would thereby prevent needle injuries.

The concluding thought of the session was that no regulation can

mandate implementation. Successful implementation depends on the way one was able to adapt to the regulation on a case to case basis.

The second technical session, chaired by Dr. R.P. Bhatt, saw discussions on Managing Mercury Waste in Healthcare.

Very pertinent questions were raised about mercury spillage management and what one needs to do in case of a spillage. In answer the experts pointed out that there is still very little information in India about mercury containment. The very first objective should be to contain and collect the spillage before it spread to large areas. One suggestion was to develop a repository of information and available technology for mercury containment.

The issue of manufacturing aneroid blood pressure measuring instruments in India was also raised. The house concluded that one may think of manufacturing them in India by subjecting them to strict international protocols as mandated by BHS. Another suggestion was to get them standardised by BHS following manufacturing.



Intervention at the highest level of policymaking to reduce the Customs tax on import of non-mercury healthcare equipment was also raised by the house. Some of the participants suggested that Toxics

Link should take the lead by virtue of their years' of expertise in policy advocacy.

Training of staff from healthcare facilities, creating holograms/labels for biohazards, developing IEC materials related to

BMW management in vernacular language were few other important issues raised during the open session.

Important recommendations that came out of the workshop included:

- a) Segregation of waste at source.
- b) Solutions for BMW management to be included in all interacting perspectives: administrative, managerial and technical.
- c) Designing an unbiased Monitoring and Evaluation system for BMW management system.
- d) Tools like Right to Information to be

used to procure information about BMW management in the state.

Day 2 of the workshop started with Training of Trainers (TOT) session with almost 65 participants attending from various hospitals of Uttarakhand.

Participants decided that waste management should be a part of the induction programme for all health care staff such as

doctors, nurses, ward-boys Hospitals should keep this exercise up every month. It was discussed that people should be sensitized and government should come up with a safer alternate policy. At present most of the BMW is disposed off by deep-burial method. This leads to Mercury contamination of ground-water and other eco-systems.

Dr Ragini Kumari

International Conference on Heavy Metals and E-Waste

October 26-27 at India Habitat Centre, New Delhi

In the last decade, Heavy Metals and E-waste have emerged as serious environmental concerns globally and also in India. The wide spread usage of Mercury & Lead in products and improper recycling practices related to toxic E-waste are causing irreversible harms to human health and environment.

These are the most toxic heavy metals that are present in environment. Their usage in various industries and household products and related emissions and exposures are a major cause for concern.

Lead is a well-known neurotoxic metal and its impacts on human health, especially women and children, are well documented. Lead is globally used in different products, like lead acid batteries, paints, bullet etc. Though Lead usage has been phased out from petroleum products in India, its usage in household paints is still rampant. The concern is higher because it leads to continuous exposure in indoor air.

Rapid technological advancement and consumerism has, in last decade or two, given rise to a new form of waste. E-waste, i.e. discarded electrical and electronic equipments, is a global concern today. Annually, world over, 50 million tonnes of E-waste is generated. But the concern is not just of this huge quantity but also of the toxic nature of this waste. Presence of toxic materials like Lead, Mercury, Beryllium, Cadmium and Brominated Flame Retardants have made management of this waste very crucial.

Toxics Link has been engaged with the issue of Heavy metals and E-waste for

last few years and has been instrumental in bringing research based information on these to public domain. Considering the facts, Toxics Link organized a two-day International Conference on Heavy Metals and E-waste. The conference was attended by the representatives from government, industries, healthcare institutes, scientific professionals, academicians and NGOs. The conference aimed to bring in focus the usage, toxicity & impacts of Heavy Metals and E-waste. The specific objectives of the conference were to increase awareness on heavy metals, toxicology and E-waste, promote the exchange of information and experience on heavy metals and E-Waste, address the gaps and discuss policy and strategic issues on heavy metal reduction and E-waste management nationally as well as internationally.

During the conference it was recommended that the government should immediately ban or restrict, through certain fiscal disincentives, the usage of elemental mercury and mercury compounds and provide incentives for those using mercury alternatives. Mercury can be substituted using flexible membrane, piezoelectric crystals and fibre-optic pressure sensors, in barometers and sphygmomanometers. Talking about the usage of mercury in thermal power it was recommended that there should be detailed internalisation of mercury emission from the sector apart from the other industries like brick industries. Further, more detailed research, awareness creation and enforcement of the regulation were also recommended.

Talking about Lead the experts mentioned that substitutes for lead pigments and technologies are available and are being used by some manufacturers to produce high-quality paint. The increase

in cost resulting from the substitution is relatively small and cannot be compared with the harm caused to human beings due to continued exposure to Lead. It was also recommended that the mandatory standards are also necessary to make the companies comply. The government needs to step in and set regulations and ensure that these are enforced.

The second day of the conference was on E-Waste and was attended by various stakeholders from Government agencies, civil societies, industry, recyclers and academic institutes. The daylong conference had presentations by eminent national and international speakers on E-waste and was successful in bringing forth several key issues like lack of proper inventory and gaps in legal framework in India, health and environmental concerns, labour issues related to electronics industry and dumping of E-waste in the subcontinent. Representatives from Sri Lanka and Bangladesh apprised the gathering about their country's E-waste scenario. The deliberations focused on both upstream and downstream solutions to this growing concern. The speakers and the participants stressed on the need for a strong legal framework and infrastructure development for E-waste recycling and the option of integrating the informal sector in the emerging scenario.

The conference recommended that there is a need for separate regulatory mechanism to manage E-waste. Eco- design and eco labeling can help in greening the equipments and to make consumers aware of the issue. The speakers also emphasized on the requirement of ban on import or illegal dumping of E-waste.

Priti Mahesh

INTERVIEW



Kavitha Kuruganti, ranked as one amongst the “twenty most influential people” in Andhra Pradesh by “India Today”, has fifteen years of experience working on development issues,

including on democratisation of science & technology and in promotion of ecological farming. She is a Development Communicator by qualification, having obtained her Master’s degree in Communication from the University of Hyderabad.

She has worked in a variety of organizations – grassroots, campaign, women’s, funding and state-level resource organizations, from 1993 till date.

She is at present taking an active lead role in a large network of organizations and individuals from across the country called “Coalition for a GM-Free India” and leads a campaign against GM crops/foods across the country. She has recently begun working in Punjab as a volunteer for Kheti Virasat Mission, a movement to promote ecological farming in the state. Her campaign against chemical pesticides began much earlier than her campaign against GM seeds.

1. The pro-GM lobby claims that the proofs against GM food crop as harmful to health and environment are not “irrefutable”. Please comment.

Kavitha: If we consider that science at any point of time is contained in peer-reviewed scientific journals, there are many such irrefutable proofs through scientific, experimental studies on GM foods and the potential health impacts. In fact, there is no irrefutable proof that GM food crops are safe! Regulatory decision-making does not depend on peer-reviewed publication of biosafety data of crop developers nor does it ask for independent peer-reviewed published studies!

2. The companies in GMO business claim that these are marketed after rigorous lab tests and thus are totally safe. But anti-GM lobby has been crying for a long time about the

defective test methods. Could you elaborate on this.

Kavitha: The concern is with lack of independent, scientific, comprehensive and transparent testing, analysis, interpretations and conclusions. In India for instance, all decision-making is being done based on crop developer’s data. Further, no studies longer than 90 days exist and it is obvious that chronic impacts are not being assessed. With various tests that are done, problems with the protocols have also been pointed out time and again, apart from the absence of some needed tests.

3. What are the various regulations worldwide on the ban of GM food?

Kavitha: Individual countries, as per their internal legislations governing regulation of gm seeds and foods take their own decision on a blanket ban or moratoria or case by case bans or approvals for particular gm crops. It has been noticed in the past that where the USA has been able to argue in the WTO that blanket bans constitute trade barriers, things have had to be streamlined some more nationally for such “trade rules” to prevail. However, in terms of safety assessments and other decisions depending on citizen preferences, countries can and have decided at the national level.

4. Do GM crops increase yield potential? Or are they only good enough for failure control of crops?

Kavitha: No gm crop exists right now which have the potential to increase yield. That is a complex trait that genetic engineering technology has not yet mastered..... Only the insect-resistant trait in a gm crop can claim to reduce crop losses due to pest attacks. But remember that even here, if a given pest for which insect resistance has been engineered is not present in a particular crop season, there cannot be any claims of protection from crop losses either!

5. What are the other natural or traditional alternatives to GM cropping?

Kavitha: There are hundreds of ecological practices that rely on nature’s products and processes for pest management and other traits. For example, in the case of brinjal, pest management is possible with

coriander intercropping, with installation of pheromone traps for mass trapping of adult pests, with neem seed extract sprays etc.

6. Can GM crops threaten the existence of non-GM crops? Is a co-existence possible?

Kavitha: Certainly, this is a threat. Contamination of non-gm crops is something that one witnessed worldwide even with open air field trials, leave alone commercial cultivation of gm crops. This contamination has a technical side to it as well as a trade/market related aspect.

7. Tell me something about your organisation and its role in GM campaign.

Kavitha: Kheti Virasat Mission is one of the most active civil society groups in the Punjab region, the seat of the green revolution in India. Punjab is one state which has already experienced the negative impacts of hazardous agricultural technologies and there is a huge environmental health crisis unfolding in that state today. Remember, when a technology like chemical pesticides was introduced some decades ago, the claim was that it would be safe for all of us. Today we know better. This knowledge or acknowledgement evolved at the expense of many lives and huge losses.... it is in this context that another hazardous technology and this time an irreversible one, is being resisted actively in the Punjab region with the involvement of various stakeholders like the medical fraternity, farmers and consumers, media etc.

8. Is the Bt brinjal issue in India blown out of proportion?

Kavitha: I certainly do not think so. Bt brinjal is to be rejected for “per se” reasons as well as with the realisation that it is a Trojan horse for bringing in many other gm crops and flora takeover of Indian farming by big corporations.

9. How much truth is there in the allegations of farmer suicide in India due to their dependence on GM seeds?

Kavitha: suicides are a complex issue but our analysis tells us that this is primarily linked to faulty, treadmill technologies introduced in farming in the name of modern agriculture. Gm seeds are part of the same framework which come with

a great deal of hype, which will ultimately lead to erosion of productive resources and make farmers depend on external agencies for various inputs and make farming unviable at an economic, environmental and social level. There is a fact finding team report put out by the planning commission which studies the distress in Vidarbha and concluded that Bt cotton seeds were unsuitable for that area and that locally

suitable, non-gm seeds have to be supplied to farmers there.

10. What is way forward for Govt of India in this aspect? What has been GEAC's role so far?

Kavitha: Well, the Govt of India has different faces, with most faces in favour of gm crops with an almost religious/unsentimental faith put on the technology.

GEAC has proven itself to be inca-

pable of taking decisions in a transparent, independent, scientific manner keeping the best interests of ordinary farmers and consumers of this country.

11. Historically when for the first time did the GMO controversy begin?

Kavitha: Right around the time of introduction of the first gm crop in the world - mid 1990s.

RESOURCES

World According to Monsanto

The World According to Monsanto, a documentary film on evils of GM Food, pieces together the story of the St. Louis, Missouri, Corporation, calling on a number of unpublished documents and first-hand accounts by scientists, civil society representatives, victims of the company's toxic activities, lawyers, politicians, and representatives of the U.S. Food and Drug Administration and Environmental Protection Agency.

The Documentary reveals numerous controversial facts about Monsanto. French journalist Marie-Monique Robin travels the world to meet scientists and political figures in order to investigate the consequences of several Monsanto products

Based on a three-year investigation in North and South America, Europe and Asia, the film tells the tale of an industrial empire that, in collusion with the American government has become one of the world's biggest seed manufacturers. It shows how the clean, green image conveyed by the company's advertising serves as a smoke screen for Monsanto's quest for market supremacy, to the detriment of global food security and environmental stability. The film is considered to be one of the best on Genetically Modified Food and their adverse effects on human and animal health.

Poison on the Platter

Right to choose safe food is a fundamental right of consumers in a democracy. However, the onslaught of GM crops has been robbing the people of their right to choose. This is the theme of the film Poison on the Platter produced and

presented by Mahesh Bhatt and directed by Ajay Kanchan.

The film is a poignant tale of how the introduction of Genetically Modified (GM) crops in India is the end of that choice.

The film is aimed at raising awareness and to enlighten the people about the introduction of GM crops in the Indian market and the irreversible adverse impacts on human health. The film shows the hazardous impact that has been felt by countries in Europe and America after using GM crops for the last two decades. The ethical and religious angle of the issue has been highlighted and the film warns how the introduction of GM crops will also hurt the sentiments of almost all religious groups.

The Future of Food

The Future of Food is a 2004 American documentary film which makes an in-depth investigation into unlabelled, patented, genetically engineered food that have quietly made their way onto grocery stores in the United States for the past decade.

It voices the opinions of farmers in disagreement with the food industry and details the impacts on their lives and livelihoods from this new technology, and shines a light on the market and political forces that are changing what we eat.

The film decries the cost of a globalised food industry on human lives around the world, and highlights how international companies are gradually driving farmers off the land in many countries. Potential global dependence of the human race on a limited number of global food corporations is discussed, as is the increased risk of ecological disasters — such as the Irish potato famine (1845–

1849) — resulting from the reduction of biological diversity due to the promotion of corporate-sponsored monoculture farming.

The issue of incorporating a terminator gene into plant seeds is questioned, with concern being expressed about the potential for a widespread catastrophe affecting the food supply, should such a gene contaminate other plants in the wild. Legal stories reported by the film related how a number of farmers in North America have been sued by the Monsanto Company; and the defendant of the Monsanto Canada Inc. v. Schmeiser case is interviewed.

The film was written and directed by Deborah Koons Garcia and produced by Catherine Butler and Koons Garcia.

NEWS



Children's bid to save Sundarbans

While representatives of the developed and developing nations engage in lengthy discussions on who should reduce its greenhouse gas emissions and by how much ahead of the upcoming United Nations Climate Change Conference in Copenhagen, thousands of school children from the

Aila-hit Sundarban region will be making a fervent appeal to the world forum to save the world's largest mangrove delta which faces an increased threat of submersion by rising water levels. An initiative of the West Bengal Government and the West Bengal Renewable Energy Development Agency, it is aimed at drawing the attention of the international community to the Sundarban islands that were battered by the deadly cyclone Aila in May this year, leaving behind a long trail of destruction as well as sinking human habitats. According to S. P. Gon Chaudhury, MD, 10,000 students from various schools in the Sundarbans are likely to assemble in Kolkata on December 7, the opening day of the global summit in Copenhagen. Gathering before the iconic Victoria Memorial, the students will release a balloon each with "Save Sundarbans: Message to Copenhagen" scrawled on them along with a giant hot-air balloon with the same message on it. He pointed out that a proper assessment of the islands' future is very necessary at the moment and global attention and funding are an important pre-requisite.

*Source: The Hindu, New Delhi,
Nov 22, 2009*

Is your child safe from lead?

Popular brands of toys such as Barbie, Disney and Dora the Explorer had high levels of toxic lead in them, showed tests done by the California-based The Center for Environmental Health. Lead causes mental and growth retardation in children. The findings are frightening for all parents, who often choose to buy more expensive toys in the belief that they would be free of health hazards such as lead poisoning. Taking away lead-containing toys from your children, however, will not make their environment free of lead. Toys are just one more source of lead poisoning in India, where lead is found in commonly-used things such as lead pencils, house and furniture paint, batteries, water pipes, sealing cement (safeda), crystal glass, ceramic tableware and even vermilion used by women on their forehead. According to the World Health Organisation, 15 to 18 million children from developing countries suffer permanent brain damage due to lead poisoning. Regulation of lead

in consumer products makes a difference. Studies have shown that after unleaded fuel was introduced in Delhi, lead levels in children's blood dropped by half. The most common source of lead is paint. A study done by the University of Cincinnati (UC) and published in the journal Environmental Research found over than 75 per cent of the consumer paint tested from countries without controls had levels exceeding US regulations. The UC team analysed 80 consumer paint samples of various brands from Asian countries and found paint from Singapore the safest. You can protect children from lead poisoning by insisting on their washing up often to remove lead dust and soil. Keep your house dust-free, shun lead-based paints and keep the water running for 15 to 30 seconds before drinking or simply boiling it. Also avoid unpackaged foods, spices, clay pots and dishes, cosmetics and toys known to contain the toxic metal.

*Source: Hindustan Times, New Delhi,
Nov 22, 2009*

Plastic wastes roads make debut in Delhi



The Delhi Government on Nov 20, 2009 started laying of plastic wastes roads by using bitumen in south Delhi. This innovative step will not only give durable roads but also solve the problem of plastic waste disposal. In this technology, plastic waste is shredded into small parts and mixed with bitumen to enhance the quality of the roads. The best part of the technology is that water does not stagnate on the roads, giving them more life. So even if the initial costs are high, in the long run, it helps cut costs. Plastic waste can also come in handy for removing potholes on roads. A total of 242 km of roads — which include roads connecting Nehru Place to Chirag Dilli flyover, Modi Mill to Nehru Place,

Mathura Road to Ring Road junction, Bahadur Shah Zafar Marg to IP flyover, Shaheed Jeet Singh Marg to Neela Hauz bridge, Aurobindo Marg T junction to Chattarpur Mandir turning, Rama Road, Aruna Asaf Ali Marg, IGP Slip Road, Bhairon Marg, Mater Plan Road, Okhla Estate Marg No. 13, Bhakti Vedanta Marg, Huchi Minch Marg road No. 6, Ring Road to Vikas Marg and NH8 to Palam airport road — will be built by plastic waste, in view of the Commonwealth Games 2010. "It is purely an eco-friendly technique and consumes less material. The thickness raised is only 10 to 15 mm. The life of such treated roads is claimed as five to seven years," he added. Beside this, recycling and micro-surfacing technology has begun on 71 km in south Delhi and 32 km of roads in east Delhi.

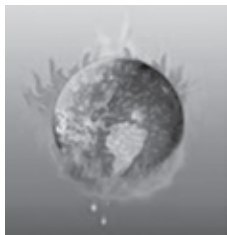
*Source: The Pioneer, New Delhi,
Nov 21, 2009*

Industry concern over draft notification on plastics

The Federation of Indian Chambers of Commerce and Industry (FICCI) has voiced its opinion against the draft notification on plastics from the Ministry of Environment and Forests. The notification proposes to issue a new set of rules for the manufacture, stock, distribution and recycling of plastics. The current draft expands the coverage beyond carry bags and containers to multilayered packaging. A statement from the chamber said: "FICCI believes that rules and regulations will play an important role in advancing the cause of the environment only if they are pragmatic. Some of the new provisions for carry bags that specify an increase in size and thickness will go against the very principle of conservation." According to FICCI, some provisions in the draft notification are impracticable for implementation by industry and have significant ramifications for various sectors of the industry. The chamber added that the notification would have a negative effect on the food industry since it covers multilayered packaging which is used extensively for food safety and the longer shelf life of food products.

*Source: The Hindu Business Line,
New Delhi, Nov, 22, 2009*

Project to study impact of global warming



In a major initiative to study the impact of global warming on forests, the state government has decided to undertake a research project to study whether or not certain species are moving "upwards" due to rising temperatures. The main objective of the project is to generate authentic data so that suitable strategy could be evolved to mitigate the impact. In western countries such studies are being carried out for the past almost three decades. The studies carried out, so far, indicate that various species are moving upwards in altitude as a result of global warming. However, not much research has been conducted in the country, particularly in the Himalayan region, which accounts for a huge chunk of global bio-diversity. Under the project, the forest department will set up observation plots in various transition zones to keep a record of presence and also absence of both herbal and tree species in different climatic zones and aspects mountain ranges. It will also carry out plantation in areas beyond the tree line to ascertain if global warming had actually improved the weather conditions to support vegetation in such high altitudes. Each plot will have dimensions of 50m x 50m and the physiological changes, if any, in the species growing in transitions zones, will also be recorded and analysed, Additional Chief Secretary Avay Shukla said. Various species of oak, which grow at different altitudes right upto 10,000 ft, will also be planted as part of the Rs 2 crore project. Studies conducted in Uttarakhand indicate that wild fruit species "kaafal" is moving up and invading the pine forests and another important conifer species, blue pine, is moving up at the rate of 19m per 10 years. The project will also focus on these two species. The forest department will engage botanists for the research project.

Source: *The Tribune, New Delhi*,
Nov 23, 2009

Govt eyes greenbacks from greenbelt

The Dera Mandi forest area near Delhi's southern Ridge would have remained a useless patch of land but for the fight against climate change. The Delhi government has marked these greens as a systematic earner of thousands of carbon credits, contributing to the global effort to reduce greenhouse gas emission. Polluting companies buy carbon credits as a price of their emission. The money from carbon credits can be used to fund green technologies. The forest department has sent a detailed proposal to the United Nations Framework Convention on Climate Change (UNFCCC) to get Dera Mandi approved as a project to earn 15,000 carbon credits per year, for 30 years, for Delhi. Its environmental value is as good as reducing 15,000 tonnes of carbon dioxide in the atmosphere per year. In all, it is expected to remove around 450,000 tonnes of CO₂ emission. The idea is to turn the Dera Mandi forest into a certified carbon sink, quantifying the carbon trapping potential of the green patch. The Army's green task force consisting of ex-servicemen is to man the projects. A similar project is also being conceived for the land at Asola Bhatti mines in South Delhi.

Source: *Hindustan Times, New Delhi*,
Nov 30, 2009

Green cover touches record high

Delhi is going green, and not with envy! The city's green cover reached the 20.20% mark in 2007, the area under tree and forest cover having reached 299.58 sq km. The India State of Forest Report 2009 released by Forest Survey of India has also indicated that the city, for the first time, has some of its area under 'dense forest'. According to the data analysed in the report based on satellite imagery till 2007, the area under tree and forest cover has gone up by 16.58 sq km. The last report was released in 2007, based on data till 2004. "While the forest cover has shown an increase, it's still less than what was expected. From 176.44 sq km in the last report, the cover has increased by only 14 sq km to 176.58 sq km. This forms

11.91% of Delhi's geographical area. The New Delhi district is the greenest part of Delhi with 46.6% of its geographical area under forest cover. South Delhi is second with 31.46%, followed by southwest Delhi with 10.08% forest cover.

The tree cover, excluding forest area, is 123 sq km or 8.29% of Delhi's geographical area. This is up by 16 sq km since the last report. However, environmentalists are skeptical about what the next report may throw up since a lot of the city's tree cover has been sacrificed to development projects. "The Commonwealth Games itself has eaten up several hundreds of trees, many of which have not been replanted. While the forests that the government is planting are still young and at the periphery of the city, the green tree cover that we had within the city has diminished considerably," said an environmentalist.

Source: *The Times of India, New Delhi*,
Nov 30, 2009

CM seeks Rs 302 cr to check river pollution

Just days after dead fish was found floating on the Sutlej and industrial pollution wreaking havoc in the state, Punjab CM Parkash Singh Badal today sought the release of Rs 302 crore from the Union Environment Ministry to control pollution in the Sutluj and Ghaggar rivers. Badal today met Union Minister of State for Environment and Forests Jairam Ramesh and sought the money. The Central Pollution Control Board (CPCB) had already identified the Sutlej and Ghaggar under the polluted category after a study. The four DPRs relate to Jalandhar, Phagwara North, Phagwara South and Phillaur. A spokesperson for the state government said DPRs for Rajpura, Patran, Moonak and Lehragaga, all along the Ghaggar, were under preparation. These would be submitted to the Central Government by year-end. Badal also asked Jairam Ramesh that projects for Shaheed Bhagat Singh Nagar (Nawanshahr) and Banga towns, which too released untreated water in the Sutlej, should be taken up by the NCRD.

Source: *The Tribune, New Delhi*,
Nov 30, 2009

Canada offers green technologies

Canada will offer India a wide range of eco-friendly technologies to ensure sustainable development of its “dynamic” economic growth while protecting environment, Premier of Canada’s Ontario province Dalton McGuinty has said. “Ontario, with its world-class high-tech industry with 2,600 environmental firms, is ready to provide access to India its new environmental-friendly technologies— as desired by Prime Minister Manmohan Singh recently — to strengthen shaping a greener and more dynamic Indian economy,” said Mr. McGuinty on the eve of his India visit. Emphasising that Ontario is determined to play a major role in India’s economic growth, he added: “We are indebted to India’s rich history. We are impressed by the exciting India of today and we are intent on playing a bigger role in India’s future.” Leading in the fields of water treatment, air pollution, site and brown field remediation, green building solutions and renewable energy, Ontario “has scientists who are among the best and brightest, workers who have the best skills and knowledge on the continent and industries that are among the most productive and innovative in the world,” he said.

Source: *The Hindu, New Delhi,*
Nov 30, 2009

Our stand on toxic ship vindicated: NGO

The Indian Platform on Ship (IPOS) breaking that had alleged that Platinum-II contained toxic and radioactive material on Nov 8, 2009 said the report of the central committee vindicated its submission to the Union Environment and Forests Ministry that the vessel contained poly chloride bi-phenyles, asbestos and radioactive material in the structure. In a statement, IPOS convenor Gopal Krishna said there would never be a situation wherein hazardous wastes will be found in a virgin form, it would always be embedded in the structure of dead vessels like Platinum II. “I am disappointed with the central committee’s report failure to take cognisance of the conviction

order of U.S. Environmental Protection Agency and its statement in the matter of Platinum II. It must be taken cognisance of at the earliest.”

Source: *The Hindu, New Delhi,*
Nov 9, 2009

Himalayan glaciers most threatened by global warming



Just before starting his lecture on ‘Atmospheric Brown Clouds,’ Prof V. Ramanathan admits that people think he has come to dismantle Indian progress. The Director of the Center for Clouds, Chemistry and Climate, Scripps Institution of Oceanography, San Diego, in a recent address to the International Federation of Environmental Journalists in New Delhi, said the world was already committed to a global warming of 2.5 degrees Celsius. “Think of greenhouse gases as covering the earth like a blanket,” he starts off. The good news, he says, is global warming may be delayed and the bad news is that smoke particles or mirrors absorb the sunlight and heat the blanket directly. The science of climate change is uncertain at best; even if the Copenhagen summit succeeds, temperatures could rise in the future to 3.5 per cent, Prof. Ramanathan forecasts. Pointing fingers is not a solution, he says, quoting Mahatma Gandhi that an eye for an eye will make all of us blind. Referring to his own study, initially called the Asian Brown Cloud, Prof. Ramanathan admits that it was a mistake. The Himalayan glaciers also show evidence of black carbon. The hope lies in the fact that black carbon in the atmosphere is 55 per cent. Alternative cooking fuels could reduce human deaths and clear the air, so to speak, and there

is need to focus on reducing black carbon, which has a short life of less than 10 days in the atmosphere. But black carbon and smoke have a deadly effect on human health. Indian contributes six per cent black carbon, though its contribution of biofuels is just one per cent. China accounts for about four times more.

Source: *The Hindu, New Delhi*
Nov 7, 2009

Centre should notify new air quality standards: CSE

The Centre for Science and Environment (CSE) on Saturday today blamed the thick smog observed over the NCR region today to rising to polluted and urged the Centre to notify proposed new air quality standards at the earliest. Even as the government agencies maintained that smog was a routine phenomenon observed during the winter season, CSE felt its presence reflected that Delhi’s air was increasingly becoming more polluted and unbreathable, bringing back the pre-CNG days. Based on its latest analysis of recent air quality data in Delhi, the environmental organisation said that in 2001, when the CNG programme was on, the annual average level of respirable suspended particulate matter (RSPM, or PM10) in residential areas stood at 149 microgram per cubic metre.

“After registering a drop in 2005, the level has shot up to 209 microgram per cubic metre in 2008. The concentration is, thus, around three times higher than the safe levels,” it said. Eight-hourly maximum current level of carbon monoxide (CO) is touching 6,000 microgram per cubic metre — way above the safe level of 2,000 microgram per cubic metre — though the annual levels have registered a drop. “Way back in 2007 we had said Delhi would wake up every winter to more smog and pollution; more wheeze and asthma. Air pollution is on its way back up. It is high time our regulators sat up and set new nation-wide air quality targets,” said Anumita Roychoudhury, head of CSE’s Right to Clean Air campaign.

Source: *The Times of India, New Delhi*
Nov 9, 2009

Greenspeak

"Copenhagen will be judged on the social justice embodied in it, and within a financial framework. I am looking forward to that debate, but I hope that I will have the key to the door so that I do not let the buggers out until they have done a deal."

John Prescott, UK politician and Rapporteur for Climate Change for the Council of Europe, presents his unique approach to the forthcoming talks to Parliament.

"We will try to make the summit successful and we will not accept that it ends with an empty and so-called political declaration."

"The diversity of the phenomena of nature is so great, and the treasures hidden in the heavens so rich, precisely in order that the human mind shall never be lacking in fresh nourishment."

Johannes Kepler

"Nature is always wise in every part."

Edward Second Baron Thurlow

"The system of nature, of which man is a part, tends to be self-balancing, self-adjusting, self-cleansing."

Not so with technology."

E F Schumacher

"Nature favours those organisms which leave the environment in better shape for their progeny to survive."

James Lovelock

"There's so much pollution in the air now that if it weren't for our lungs there'd be no place to put it all."

Robert Orben

"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

Aldo Leopold

"Because we don't think about future generations, they will never forget us."

Henrik Tikkanen

"We do not inherit the earth from our ancestors, we borrow it from our children."

Native American Proverb

"We never know the worth of water till the well is dry."

Thomas Fuller



Toxics Link

for a toxics-free world



E-toxic listserve

Toxics Link coordinates an electronic discussion group for sharing and disseminating information. If you would like to join the group, please e-mail us at tl Delhi@toxicslink.org

If you have suggestions or require information, please contact:

Toxics Link – Delhi

H2 (Ground Floor)
Jungpura Extension
New Delhi 110 014
T: +91-(0)11-24328006, 24320711
E: tl Delhi@toxicslink.org

Toxics Link – Chennai

9/5 (2nd Floor), Second Street, Padmanabha Nagar, Adyar,
Chennai 600 020
T: 91-44- 42607642
E: tl Chennai@toxicslink.org
info@toxicslink.org

/: www.toxicslink.org