



Environmentalists denounce toxic waste dumping in Asia

Industrialised nations such as the USA, Japan and South Korea were strongly criticised by environmental activists from several Asian countries at the Waste Not Asia (WNA) conference held in Seoul in June 2004. More than 150 activists from 14 countries had gathered for the conference, which was organised by the Korea Zero Waste Movement Network (KZWMN) and the Global Anti-Incinerator Alliance (GAIA).

The activists pointed out that the continued dumping of electronic scrap and other kinds of waste in Asia by these nations not only contravenes the Basel Convention on the trans-boundary movement of hazardous waste, but also allows electronic manufacturers to evade their responsibilities over the ultimate fate of the products

they put out in the market.

Recent investigations by environmental groups like Greenpeace, the Basel Action Network (BAN), Toxics Link and KZWMN confirm that significant quantities of highly polluting hazardous electronic waste still illegally pour into China, the Philippines and India.

The activists called on the governments of the US, Japan and South Korea to control their toxic exports rather than have poor Asian nations deal with the massive environmental liabilities involved in the dismantling and recycling of electronic scrap.

WNA also appealed to the global manufacturers of electronic appliances to practice Extended Producer Responsibility

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Time to unite!

More than 60 environmentalists and social activists came together recently to express concern about the gradual but relentless dilution of various public participatory processes in environmental decision-making. An open letter to the Ministry of Environment and Forests (MoEF) stated, "The role of the MoEF seems increasingly to be that of simply a clearing agency for unsustainable and destructive economic and commercial activities. To make matters worse, the MoEF appears to be systematically undermining the participation of citizens in its decision-making process, and has become more and more closed in its functioning. Lack of transparency not only reduces public participation, it is also a way to avoid serious scientific scrutiny."

Clearly, in the new aggressive economic policy of the government, the environment is getting the short end of the stick, with dilutions of existing acts and EIA norms, and reduction of opportunities for taking on board public opinion, especially those of local communities. The draft National Environment Policy that was released recently claims that it underwent a process of extensive consultations with people. However, as 60 people who represent the breadth of the environmental movement in India claim, not one of them was consulted. So, who was? As has been pointed out, even the Common Minimum Programme of the present government has almost nothing on the environment, which is not much more heartening than the previous government's systematic whittling down of environmental norms.

Ravi Agarwal

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(EPR) and assume the liabilities associated with the final fate of their products. In the European Union, the same companies are being required to phase out a number of hazardous substances in electronic products and take back discarded products for recycling.

It is unacceptable that these electronic discards are being collected in industrialised countries and then dumped in poorer nations. The developing economies of Asia have become the dustbins for hazardous and toxic waste generated in rich countries, which have high-consumption lifestyles.

Their respective national laws of China, India and the Philippines have, for several years now, forbidden the import of hazardous waste. The Basel Convention also bans the export of toxic waste from Organisation for Economic Cooperation and Development (OECD) to non-OECD countries, even for recycling purposes. However, despite these prohibitions, electronic wastes continue to arrive into these target nations. For example, estimates show that South Korea exports about 1.8 million used computers to China each year, to escape paying the steep recycling and disposal costs within its own borders.

In January 2003, the European Union adopted two directives:



Environmental activists at the Waste Not Asia meeting in Seoul.

the Waste from Electrical and Electronic Equipment (WEEE) and the Restriction on Hazardous Substances (RoHS). Over 90 percent of electronic scrap, instead of being reused or recycled, goes to incinerators and landfills creating hazardous emissions. The WEEE and RoHS directives aim to substantially reduce the amount of electronic scrap entering incinerators and landfills and to eliminate the hazardous substances these products contain (for example, lead, cadmium, mercury, hexavalent chromium and certain brominated flame retardants) by July 2006. The directives cover a broad range of electronic products ranging from computers to hair dryers, refrigerators, and electronic toys.

In India, the Central Pollution Control Board has been made aware of the gravity of the issue. A similar directive is called for at the earliest. WNA has called on the USA to sign and ratify the Basel Convention.

It has also urged the Indian Government to ratify Basel Amendments and has sought its proactive support for the victims of the Bhopal gas disaster. At a press conference of the WNA, Korean journalists expressed avid interest in the aftermath of the disaster. An update on the Bhopal issue is provided below.

Justice continues to elude Bhopal victims

The Supreme Court of India, on July 19, 2004, directed the disbursement of Rs 1,505 crore which had accrued over the years in the Reserve Bank of India account that was opened for depositing the compensation of US\$ 470 million paid by Union Carbide Corporation in 1989. The Welfare Commissioner, appointed under the Bhopal Gas Disaster (Processing of Claims) Act 1985, had settled 5.5 lakh claims earlier and, coincidentally, disbursed approximately the same amount, Rs 1,500 crore.

The RBI has confirmed that the realisable value of securities was Rs 578.9 crore and that the difference in the exchange value of the dollar between 1989 and 2004 worked out to Rs 926.5 crore. This adds up to Rs 1,505 crore. A bench comprising Justice Shivraj Patil and Justice B N Srikrishna directed the disbursement of this amount after the Centre agreed 'in principle' that it was entirely the property of the victims. The bench asked the Welfare Commissioner to work out the modalities of paying the fresh compensation in proportion to what had already been paid.

The court has corrected its estimate of 1989 about the settlement and compensation for the victims. Earlier it had assumed

that only about 3,000 human lives were lost and about 102,000 others had sustained injuries in the tragedy.

According to the 2003 Annual Report of the Bhopal Gas Tragedy Relief and Rehabilitation Department, as on October 31, 2003, the total number of cases awarded compensation by the Claim Courts under the category of death was 15,310 and the number of cases awarded compensation for injury was 554,895. The apex court's latest order approves these new figures of the dead and injured.

What is further required is to take note of the fact that the number of those who were to be compensated as per the terms of the US\$ 470 million settlement was only 105,000. In reality over 570,000 claimants have actually been paid compensation out of the Settlement Fund.

What has been lost sight of is that, de-



Bhopal gas tragedy survivors staging a dharna at Jantar Mantar, New Delhi.

spite five times the number of victims being paid compensation from the amount that had been awarded to 105,000 victims, half the amount in the Settlement Fund remained undisbursed. It is this undisbursed amount of Rs 1,503 crore that is being released for disbursement on a pro-rata basis as per the court order.

Although the increase in the number of

victims by an order of five has been acknowledged, the original Settlement Fund was never augmented at all. In such a situation, the issue of shortfall in the Settlement Fund is yet to be addressed. The court has posted the matter for further hearing after two months.

The Indian government continues to pursue criminal charges against Warren Anderson, former chairman of Union Carbide, who now lives in New York. The United States has rejected India's request to extradite Anderson on technical grounds.

Bhopal city court had ruled last year that Anderson should face charges of culpable homicide (under Section 304 IPC). The Press Trust of India has reported that the legal department of the Central Bureau of Investigation is studying the possibility of a fresh extradition request.

Gopal Krishna

FEATURES

Sarita Vihar's D-Block: a 'dream block' for waste management

A clean city is not a mere accident but is the result of the concerted efforts of citizens, city managers, the state and civil society. The challenge of dealing with municipal waste in urban India is best illustrated by some figures: it is estimated that the total solid waste generated by 300 million urban Indians is 38 million tonnes per year. About 100,000 MT of Municipal Solid Waste is generated daily in the coun-

try. Urban local bodies spend about Rs 500 to Rs 1,500 per tonne on the collection, transportation, treatment and disposal of solid waste.

Without the support of citizens who generate this waste, it seems unlikely that the waste situation could be controlled. One such example of a participative approach to waste management is the Sarita Vihar project of New Delhi.

In late 2003, Sarita Vihar, a middle-income residential settlement in south Delhi, had been chosen as a test case for creating a zero waste colony. This was done after a series of meetings with the members of the Residents' Welfare Association (RWA). Waste management was identified as a priority issue by the RWA.

Representatives of various interest groups



Area councillor, Mr. Hemchand Goyal, inaugurating the composting site at D-block, Sarita Vihar.

(the Mahila Mandal, Kitchen Garden Association and Senior Citizens' Council), general residents, the local councillor, site and zonal level municipal staff of the sanitation and horticulture departments, waste contractors, private waste collectors and domestic help were encouraged to participate in the programme.

Capacity-building workshops played a key role in raising awareness of waste issues amongst the varied audience, and making them aware of their responsibility towards the city's cleanliness programme.

For the first time, stakeholders got the opportunity to come together and plan for an effective waste management programme. After the interest groups made their points of agreement and disagreement clear to each other, group members made a list of avail-



MCD Deputy Commissioner, Ms Punya Srivastava (third from left), discussing the various aspects of the Sarita Vihar MSW programme with residents and other stakeholders.



The compost pit at the Sarita Vihar neighbourhood park.

able alternatives. The economic and environmental consequences of each alternative were discussed and, finally, a combination of source segregation and on-site composting was considered the best option by the representatives of the D-Block RWA.

For more than a month, a door-to-door campaign was undertaken to enlist the support of the 230 households of the block. This was done through the circulation of attractive IEC materials which outlined the importance of source segregation.

Once implementation started, continuous assistance was provided to the residents to overcome difficulties involved in source segregation. Land for on-site composting was selected with the consensus of the residents and with equal participation from site-level municipal staff. The Municipal Corporation of Delhi (MCD) permitted the digging of two natural pits in one of its neighbourhood parks, as the location for aerobic composting. In addition, 250-litre barrels were placed to promote barrel composting. The site was fenced in order to prevent access by stray animals.

The process, as set in place by the programme, begins with the collection of segregated waste from each household by a private waste collector in two separate bins. After covering all the households, the private waste collector brings the collected waste to the composting site where, after secondary segregation, the total amount of organic waste generated for the day is weighed, recorded and spread in the pits. Cow dung slurry is poured over this along

with effective micro-organisms, and the pit is covered with jute sheets. The municipal sanitary staff member, after finishing his daily chores, turns the pit every alternate day for better aeration.

Excited by the month-long trial (and by managing approximately 2,000 kg of organic waste in the neighbourhood pits), the residents of the block decided to continue with the project and set an example for other residential complexes. The programme began with only four families, but by the end of the first month, one-third of the colony had joined the initiative. By the end of the second month, two-thirds of the colony were participating in the programme.

An important aspect of the programme was the continuous monitoring and evaluation of each other by the stakeholders. The residents of the block are now aiming to make the pocket 'dustbin-free', thus creating another headline in the national dailies.

The involvement of an NGO (in this case, Toxics Link) as a facilitator is important in the initial stages. Ongoing incentives in the form of better cleanliness on streets, drains and parks should be ensured by the municipal department to keep participation levels high.

The programmes need to be institutionalised so that they are sustainable even after the NGO pulls out. The municipal department and resident associations should then take ownership of the programme, and jointly shoulder the responsibilities of supervision and maintenance.

Tanya Sengupta

Mercury: the murderous metal

The country has been working on improving medical waste management for around a decade; during this long journey, it has witnessed many policy changes and some positive on-the-ground transformations in the way waste is managed by the healthcare sector.

During this process, infectious waste in healthcare establishments (which constitutes around 10 percent of hospital waste) has been addressed. The remaining 5 percent (the hazardous portion) now needs to be dealt with. The hospitals, which handle and generate a lot of hazardous elements and chemicals, have never been made accountable to the Hazardous Waste (Management and Handling) Rules. In the case of mercury, which is used in large amounts by hospitals, even the basic standards for its safe use, issued by the Indian Standards Institute, are not in practice in most places.

A report by Toxics Link, 'Lurking Menace: Mercury in the healthcare sector' documents the usage of mercury instruments and products in the healthcare sector. It presents a very grim picture of the way mercury is handled and disposed of by hospital staff. Mercury equipment breaks very easily, but the staff is rarely trained or equipped to deal with any such event. Dental amalgam (which contains about 45-55 percent mercury) is widely used in India, though it is banned in many countries.

Mercury is handled without any protective gear and is disposed of either with incinerable waste, general waste or via



PHOTO: P. MADHAVAN

Dental clinics release mercury in large quantities through dental fillings.

drains, all of which carry it into the food chain. The problem is compounded as all the generation sources are scattered and non-regulated.

Data shows that an average-sized hospital can release, conservatively, around 3 kg of elemental mercury in the environment each year. By very conservative estimates, a city like Delhi would be releasing around 51 kg of mercury through dental practices alone. Several scientific studies have proven that mercury in the healthcare sector also affects the health of the workers in this area.

Mercury is a very potent neuro- and nephro-toxic substance. The two properties that make mercury extremely unmanageable are bio-accumulation and bio-magnification. Bio-accumulation is the retention of a toxic substance in the tissues, especially muscles. Bio-magnification is the process by which the toxic metal increases in concentration as it moves up the food chain (up to 100,000 times the original levels, in some cases). Nursing infants are the highest in the food chain and can be exposed to dangerously high levels of this element.

The health impacts of this heavy metal have been widely documented. Mercury is very toxic; it is harmful if absorbed through the skin, and may be fatal if inhaled. It may cause harmful effects on the nervous, digestive and respiratory systems, and on the kidneys. Mercury may cause lung injury, is a skin sensitiser and a reproductive hazard.

Though viable alternatives exist for most of its applications, yet mercury use continues in the country without any regulation. The use of mercury-free products is a cost-effective choice when the direct and indirect costs of the products are considered. Indirect costs to hospitals include the costs associated with training, clean-up of spills, and storage and disposal of mercury. Indirect environmental and health costs to the public and wildlife may also be significant.

Internationally, there is a shift towards mercury-free alternatives and strict regulations are in place on mercury emission. In India too, there is an urgent need to bring in some policy for a gradual shift from mercury to safer alternatives.

Toxics Link has brought this subject to the fore in India, and has commenced training and awareness programmes on mercury in different hospitals in Delhi.

Priti Mahesh

Asbestos roofs in schools of Tamil Nadu: out of the fire, into the frying pan

AS A RESULT of the fire tragedy in a private school in Kumbakonam, 350 km from Chennai, thatched roofs of schools in Tamil Nadu are being replaced with asbestos sheets.

On July 16, the Tamil Nadu government had banned classes under thatched roofs. As per the government order, a private school in Kailasapuram area had decided to replace the existing thatched roof with asbestos roofing. Non-compliance could cost the school their recognition.

There are 300 high schools and higher secondary schools, and 2,000 primary schools (run by the government, local bodies and private managements) spread across 22 blocks in the Thanjavur district.

Parents are opposed to the school management's move to switch over to asbestos roofs and have insisted on concrete roofing for the safety of their children. However, the school management has refused to concede to their demands and has suggested that the parents transfer their children to another school instead.

Parents are deeply concerned about the health of their children as asbestos is a poisonous material as inhaling its dust causes mesothelioma, cancer of the cells lining the lungs. The recent issue of the *International Journal on Occupational and Environmental Health (IJOEH)* quotes estimates by the Chennai-based Cancer Research Institute suggesting that 3 to 4 percent of all lung cancer cases in India are asbestos-related.

On July 12, the Supreme Court had issued notices to the Centre and the



States on a public interest litigation that sought a ban on the use of asbestos, alleging that more than 100,000 workers have fallen victim to its carcinogenic effect.

The world over, countries are responding to the dangers of asbestos by replacing it with alternatives such as glass fibre, carbon fibre, cotton, organic fibre, man-made mineral fibres and particulate mineral fillers.

The Ministry of Agriculture is sponsoring research by the Central Building Research Institute (CBRI) into alternative vegetable fibres and wastes as reinforcements for fibre. CBRI has developed roofing tiles and blocks using coir fibre and cement. These can be used in place of asbestos by developing cement-building materials incorporating by-products of oilseeds, pulses and maize.

In India, asbestos use is growing at a rate of 12 per cent annually. With developed nations banning and phasing out asbestos, developing countries like India have become the dumping ground of asbestos from countries like Russia and Canada.

The decision of the Tamil Nadu government to use asbestos in roofs is a grave threat to the health of the children in the state. Delhi too prohibits all new schools from using asbestos.

Gopal Krishna

POPs and NIP process – India's plan to combat POPs

The Ministry of Environment and Forests, Government of India, is carrying out a project titled 'Preliminary Assessment to Identify the Requirements for Developing a National Implementation Plan in India as a First Step to Implement the Stockholm Convention on Persistent Organic Pollutants (POPs)'.

India is a signatory to the Stockholm Convention on POPs – a global treaty that aims to protect human health and the environment, and calls for urgent global action to eliminate the release of these chemicals.

India now looks forward towards developing a National Implementation Plan (NIP) on POPs. It is under obligation, as per Article 7 of the Convention, to develop and transmit a NIP to the Conference of Parties (CoP) within two years of entry into force of the Convention. To that end, India is committed to start compilation of the NIP.

A preparatory project, to identify the requirements for developing the NIP, has been implemented during 2002 by the Ministry of Environment and Forests (MoEF), with the assistance of the United Nations Industrial Development Organization (UNIDO) under the Project Development Facility Block B (PDF-B) grant from the Global Environment Facility (GEF). The MoEF has entrusted the Industrial Toxicology Research Centre (ITRC), Lucknow (a constituent laboratory of the Council of Scientific and Industrial Research, New Delhi) to carry out the project.

The objective of the project is to develop the NIP for India in order to implement the Convention. The project involves interaction with the stakeholders in developing the NIP, which the project implementing authority plans to accomplish through workshops and visits to the stakeholders. Ten such workshops have been organised.

To facilitate its full participation in the Inter-governmental Negotiating Committee for an international legally binding instrument for the implementation of international action on certain POPs, India has established a National Steering Committee with the MoEF and the Ministry of Agriculture

to harmonise the interests and standpoints of the different sectors involved, and to determine the position of the Indian government with regard to the POPs issue and the negotiation of the Convention. The MoEF intends coordinating activities across its divisions and departments. A Convention Compliance Office will be formed to administer activities towards compliance and oversee the national implementing agency.

India has invited UNIDO to act as GEF Executing Agency with opportunities for the development of NIP. India has opted to undertake this work in two phases through the full GEF project cycle rather than taking up the enabling activities. During the proposed full project, UNIDO would continue with MoEF to coordinate the component work packages in its capacity as Executing Agency.

During the PDF-B phase, a coordinating mechanism drawing together India's international development partners was established to ensure that NIP development can take full advantage of the findings and experience of associated projects and programmes executed by inter-governmental organisations and bilateral donors. This will continue with UNIDO providing advice and guidance.

India has been successful in attracting considerable co-financing assistance to support NIP development and to undertake capacity-building, case studies, etc, of possible approaches in priority areas.

Groups working in the areas of the environment and health feel this NIP process to be a half-hearted effort to combat the ill effects of chemicals on health and the environment. Environmental groups which are part of the International POPs Elimination Network (IPEN) have called for disclosure of information and public participation at all stages of the NIP process, especially the participation of farmer groups because they have information on the adverse effects of pesticides on the environment and on humans and animals.

At present, there is very little scope for public participation in the NIP process – the process appears to be very much industry-driven. Civil society groups are concerned that without the proper participation of the public, the purpose of the NIP will be defeated.

Papiya Sarkar

Electricity at what cost?

Industrial development in India is dependent, to a large extent, upon the availability of power generated by thermal power plants. Over the years, it has become the most preferred form of energy generation in India. There are around 75-80 thermal power plants in the country, which currently generate around 72 percent of its power.

But this process of power generation entails significant environmental and health risks. The by-products of thermal power generation – ash, dust, fumes, gases and heavy metals such as mercury and lead – make a lethal chemical cocktail. They not only affect the health of workers employed at the power plants but also threaten the well-being of communities living in the vicinity of the plant.

Since the installed capacity of thermal power plants is set to grow over the years (the installed capacity of coal-based power generation has increased from 800 MW in 1973 to 60,000 MW in 1999 and is expected to go up by another 50,000 MW in the next 10 years), it is imperative to take a close look at the ill effects of these plants on humans and habitats.

Thermal power plants are significant contributors to environmental pollution. Fly ash is the main discharge from a thermal power station, creating a dusty atmosphere that adversely affects the health of workers. Proper protective equipment should be made available to all workers exposed to dusty workplaces.

Energy production by fossil fuels, such as coal used for combustion in thermal power stations, leads to various types of environmental pollution such as air, water, noise, etc, that adversely affect the health of the neighbouring community.

Emission of sulphur dioxide could cause injury to the respiratory system. Carbon monoxide adversely affects human health. It also reduces the quantity of oxygen in the air by converting it into carbon dioxide.

Water is contaminated by chemical waste produced in thermal power plants. Chemical waste is discharged into nearby water bodies, which causes irreversible damage to aquatic life.

The noise produced by thermal power



Power plants are significant contributors to environmental pollution of all types – air, water, land and noise.

plants can have an adverse effect on health of workers as well as communities residing near the plants. Though it can be reduced, it cannot be eliminated.

The study

Given the diversity of adverse health effects as a result of power generation by thermal power plants, and with its potential harmful impact on the environment, a study was conducted by the Occupational Health and Safety Association (OHSA), Ahmedabad. The study focussed on two thermal power plants:

- ▲ Ahmedabad Electricity Co (AEC) at Sabarmati, Ahmedabad, and
- ▲ Gujarat Electricity Board (GEB) at Gandhinagar.

The main objective of the study was to understand the safety, health and working conditions within the operation area of thermal power plants and their polluting impact on the environment as well as communities living in their vicinity.

In the two thermal power stations under study, there had been no systematic work done regarding labour problems, such as reduction of accidents, enhancing safety and improving occupational health and welfare of the workers. The study found that major improvements were needed in the working environment, such as noise levels, airborne dust, water pollution, lighting, ventilation,

personal protective equipment, etc.

A thermal power plant is a complex organisation. All components are arranged in an orderly manner and they are inter-dependent. They do not operate in isolation. A failure or malfunction in one component can affect the performance of the entire power plant. Component parts of a thermal power plant may contribute and produce pollutant effects which end up polluting the atmosphere and can also contaminate the water and generate abnormal levels of noise if proper and effective actions are not taken to control them.

In view of the hazards at the workplace, several Acts have been passed to protect workers and common citizens. The Constitution of India guarantees health and safety under the directive principles. This is achieved through the Factory Act, 1948.

Several amendments have been made after the Bhopal gas tragedy to widen the scope of the Factory Act. The safety, health and welfare provisions constitute the core of this Act. The Act has been further amended to ensure the safety and health of not only the workers employed at factories but also of the larger public. Similarly, there are several acts and regulations, such as the ESI Act, the Environment Protection Act, the Boiler Act, the Boiler Regulation, the Workmen's Compensation Act, etc, that are meant to ensure the safety and health of

workers, plants and the general public.

The working conditions and environment in the premises of thermal power plants are a major issue regarding health and safety at the workplace. Proper, meaningful and adequate attention is not given to occupational health in India, as most of the victims are from relatively weaker sections of society. There are about 1.6 million workers employed in thermal power plants in India who are not aware of the dangers around them. The surrounding communities are also ignorant about the hazards of the thermal power plants.

Unfortunately, statistical data on the health and safety records of thermal power plants is not readily available. Information regarding accidents at thermal power plants is sketchy, since records are not maintained systematically for the purpose of analysis and prevention. The accident report mechanism concentrates on describing the effect, rather than the cause of an accident.

Single-minded pursuit of energy generation by thermal power plants is self-defeating, because it has created conditions that are harmful to living organisms. The aim should be to create an environment conducive to the physical, mental and social well-being of communities. Surprisingly, little money and effort is spent in the field of the inter-relationship of health and environment.

Even the trade unions in the thermal power plants do not have occupational health and safety on their priority lists. They have the capability to play a vital role in understanding the occupational health and safety needs of the workers and negotiating these with the management.

The preventive approach in the field of environmental health is the most efficient route. This approach does not necessarily impede the efficiency of thermal power plants. On the contrary, it can contribute to safer power plants by minimising the damaging and negative effects on man, flora and fauna.

Kishore Wankhade

MSW UPDATE**MCD to privatise waste management services**

According to a news article published in *The Hindu* (Delhi, July 19, 2004), the Municipal Corporation of Delhi (MCD) is all set to hand over the collection, storage and transportation of garbage to three private companies. To start with, the city, central and south zones will be handed over. As per the news report:

- ▲ Subhash Projects Marketing Limited, Dooars Transport and Tetratex India Limited would be responsible for collection, segregation, storage and transportation of waste in the city, central and south zones, respectively.
- ▲ These companies will be paid on the basis of the amount of garbage collected and transported to the designated sanitary landfills. To begin with, MCD will pay Rs 600 per metric tonne of garbage transported to the landfill site.
- ▲ The companies have made a commitment to invest Rs 27 crore for setting up the necessary infrastructure.
- ▲ A third party will monitor the working of these companies and verify the expenditure, and only on their approval will the MCD pay these companies.

In order to preempt any anti-privatisation lobbying, the MCD has ensured that no sanitary worker will be retrenched in the process.

Though the project raises hopes of efficiency, it is questionable on several grounds. For example, what will happen to segregated waste, especially organic waste? Who has the ownership over dry rejects? Are there any provisions to involve communities in the waste management of the city? Are there any incentives for these private companies to promote the 'reduce, reuse and recycle' principle of waste management?

As far as private waste collectors are concerned, more waste would result in more profits, which would be paid by the taxpayer. A holistic approach to waste management needs to involve communities in reducing and recycling waste.

Indrajeet Rai

E-WASTE UPDATE**UNEP recognises e-waste problem in Asia-Pacific**

An expert group meeting on e-waste management in the Asia-Pacific region was held from June 22 to 23, 2004, at the United Nations Environment Programme (UNEP) Regional Office in Bangkok, Thailand. The meeting was organised by UNEP and attended by experts from governments, institutions, the Basel Convention Secretariat, civil society organisations and UNEP, from the United States, China, India, Thailand, Japan, etc.

UNEP, in collaboration with the various governments, expert institutions, and relevant agencies in the region, has planned to promote e-waste management in the Asia-Pacific by initiating regional-level activity for the exchange of knowledge. The main objectives of the meeting were to assess e-waste at the national and sub-regional levels, and to discuss a strategy towards promoting its management in the region.

Toxics Link participated in the meeting, and presented the organisation's viewpoint on the e-waste issue in India. The situation in India was described, and special emphasis was laid on the illegal import of e-waste through the ports of India. TL illustrated the hazards of open burning of computer components.

Discussing the different responses to this problem, TL mentioned that while Indian industry tends to show much ignorance in these matters, the multinationals are largely silent. TL recommended the implementation of legislation, ban on imports, hazard-free and long-lasting designs, more technologies for recycling and its collaboration with 'take-back product' responsibilities.

Kishore Wankhade

POPS UPDATE**Toxics Link designated regional hub for IPEP**

Toxics Link has been selected to function as the regional hub for the South Asia Region for the implementation of the International POPs Elimination Project (IPEP). As a hub, Toxics Link will be responsible for the implementation of this project in at least four other countries of the region. It will develop ideas for project activities for the region, and will assist NGOs in the region to secure expert international help and build the capacity that may be needed to carry out the agreed activities.

IPEP is a project of the International POPs Elimination Network (IPEN), a network of 350 NGOs and community-based groups around the world working towards the elimination of Persistent Organic Pollutants (POPs). Many NGOs were highly engaged in the negotiations of the Stockholm Convention and the Inter-governmental Negotiation Committee. These NGOs formed IPEN in 1998 to create a framework for NGO collaboration to promote a strong and effective POPs elimination treaty. This Declaration has become IPEN's new platform, and it provides the new basis of collaboration for NGOs that participate in the IPEN network.

In 2001, IPEN adopted the Stockholm Convention and proclaimed a new mission to facilitate the active participation of NGOs in the process of elimination of POPs. The two-year IPEP stems from IPEN's objective of creating and funding International Working Groups to facilitate international NGO collaboration in three broad areas of POPs policy: pesticides; community monitoring; and dioxins, polychlorinated biphenyls (PCBs) and wastes. It will be implemented across the globe in eight regions: Anglophone Africa, Central Europe, Francophone Africa, Latin America and the Caribbean, the Middle East, Russia, South-east Asia and South Asia.

As part of the hub activities, Toxics Link intends to create a core group of experts from the region that would support the identification of NGOs from the region to take up this project and would also provide support and guidance to the implementing agency.

Satish Sinha

SCMC unravels DPCC's false claims on hazardous waste management in Delhi

The disposal of hazardous waste generated by industrial activities in Delhi has been discussed and studied by various environmentalists, planners and policy-makers in the capital. The issue of its disposal/dumping continues to pose a serious challenge to civic authorities.

The Supreme Court of India, in its historic ruling on October 14, 2003, had directed the government to take steps to manage the hazardous waste generated by the industrial units as per the Hazardous Waste (Management and Handling) Rules, 2003.

The Court had also constituted a monitoring committee under the chairmanship of Dr G. Thyagarajan to oversee the implementation of its order. The monitoring committee at present is travelling and inspecting the implementation of the Supreme Court's order in various states across the country. The committee is meeting the State Pollution Control Boards, civil society groups and industry associations, and looking at the implementation plans.

The Supreme Court Monitoring Committee (SCMC) visited Delhi in July 2004 and observed that the Delhi Pollution Control Committee (DPCC) had failed to implement the order, and that there is no site available for the disposal of hazardous waste in the industrial areas of Delhi, thus resulting in illegal waste dumps. The committee also observed that the industrial units in Delhi have failed to comply with the norms prescribed in the Hazardous Waste Rules.

As no place is available for its disposal, waste is found lying in vacant plots, and along roads, drains and railway lines. Hazardous waste can also be seen at municipal waste *dhalaos*.

The fault lies as much with the industries as with the state agencies responsible for the management of solid waste, such as the Delhi State Industrial Development Corporation (DSIDC), the DPCC and the Delhi Development Authority.

Spot surveys regarding waste management in industrial areas of Delhi have revealed that the units, due to the lack of storage or disposal facilities, dispose of waste:

- ▲ in open drains;
 - ▲ on roadsides within and outside industrial areas;
 - ▲ in low-lying areas (vacant or abandoned plots around industrial areas);
 - ▲ in the *dhalaos* (municipal waste collection points) constructed by municipalities (Municipal Corporation of Delhi, New Delhi Municipal Corporation and Cantonment Board); and
 - ▲ in unscientifically designed sanitary land dumps.
- Waste with burning properties, such as plastics manufacturing units, oily sludge, etc, are sold to other units (operating furnaces) as fuel supplement.

Waste dumped in the municipal *dhalaos* are collected by municipality trucks and carried to the municipal waste dumps. DPCC's own records show 24 illegal dumping sites for the disposal of waste. The details regarding the location of these sites and plans for cleaning of these illegal sites have not been disclosed.

Under the 1996 order of the Supreme Court, 15 Common Effluent Treatment Plants (CETPs) were to be constructed in

Delhi, but till date only four such plants have been operational, even those only sporadically. Besides many other flaws, the planning, design and operation of the CETPs did not take into consideration storage and disposal of sludge generated during the treatment of the effluent.

As per the 2003 order, every unit generating hazardous waste has to display information publicly on a board in front of the factory gate showing the quantum of hazardous waste being generated, the types of wastes, authorisation under Hazardous Waste Rules, and information on its disposal facility. The committee's visits to the industrial areas in Delhi revealed that no units displayed such information.

Given the haphazard development of the industrial areas, many of the units were operating without proper licence and authorisation, as pointed out by the Industrial Association members themselves.

In most industrial areas, the number of units operating is far higher than allotted or originally planned; clearly, many of these units do not even have an authorisation/licence under DDA, let alone authorisation under the Environment Protection Act (EPA) and Hazardous Wastes Rules.

Of the total 1,777 industries in Delhi that produce 20,000 tonnes of hazardous waste annually, 1,142 have submitted applications to DPCC for the disposal of waste. Action is being taken against those which have not, although DPCC has yet to look into the industries which have applied.

The SCMC fined the Delhi State Industrial Development Corporation (DSIDC) Rs 10 lakh for failing to construct the CETPs on time.

Kishore Wankhade



'Plastic' roads – travelling down a dangerous path

The word 'recycle', a traditional ally of the environmentalist, has now found new friends in government and, surprisingly, in industry. A typical example is a new technology independently developed by two innovators, which attempts to use plastic waste in roads. This technology was first developed by Bangalore-based K K Popyflex Pvt Ltd and then by Professor Vasudevan of Thyagaraja College of Engineering in Madurai, Tamil Nadu.

This article is an attempt to look at this technology critically – the process, the claims, the myths and the dangers – given that several stretches of roads have already been laid using plastic waste.

The technology

The technology mixes post-consumer plastic waste with bitumen for better roads. Waste plastics soften when heated around 150°C or more, and exhibit favourable binding properties. This can then be blended with bitumen to lay roads.

The claims

Plastic roads are claimed to create a superior road surface that is more elastic and longer lasting than traditional asphalt roads. According to the innovators, plastic binds better with bitumen and prevents the development of cracks, which are a bane of conventional roads. The technology, thus, kills two birds with one stone: it gives us better roads and takes care of plastic waste at the same time.

The reality

In reality, the first step of sourcing the right kind of plastic as raw material is going to be difficult because India lacks waste segregation. The plastic industry itself is partially responsible for this since they do not label the plastic.

In such a situation, several kinds of hazardous plastics such as PVC, and not merely polythene carry bags, can get included in the system leading to toxic emission problems.

Secondly, very little scientific evidence is available with respect to the performance



Plastic in roads: a useful innovation or a quick way of sweeping plastic waste under the carpet?

of such roads. In the absence of concrete science, it would be jumping to conclusions to claim superiority for the process.

Finally, and most significantly, the repercussions on the environment and health from the use of this technology has not been studied before implementing what is a potentially harmful process.

Apart from the threat of dioxin release, the melting of chlorinated plastics releases noxious gaseous HCl, an acidic gas. The flexible plastics that are likely to constitute a major portion of the waste stream has plasticisers such as phthalates which can be released when the mixture is heated to 150°C or more. Collectively, the gaseous emissions not only pose a threat to the immediate environment but also expose workers to serious occupational hazards.

The problems continue even after the road has been laid because the components of the road are not fully inert. According to polymer science experts, mechanical abrasion once the road is put to use will cause the release of fine polymer particles (polymer dust), which, when air-borne, will cause a particulate problem. With the first rains, the threat of leaching would be pronounced.

The need of the hour, therefore, is to examine the claims thoroughly before any more stretches of road are laid. Absence of evidence dictates a precautionary approach.

As such, this is seen as another attempt at what activists would call 'burying the evidence' – be it roads, or landfills in the guise of roads!

*Sanjay K. Gupta (New Delhi)
and Rajesh Rangarajan (Chennai)*

Factory fire – criminal action recommended against HIL

A fact-finding team comprising members of the Thiruvananthapuram-based NGO, Thanal, and New Delhi-based The Other Media, which inquired into the fire at the Hindustan Insecticides Limited (HIL) at Eloor on July 6 this year, have recommended criminal action against the company for its failure to take steps to prevent the fire.

The team has made this recommendation in its report prepared on the basis of the inquiry conducted into the incidents leading up to and following the industrial fire at HIL. The team has recommended that senior executives of the company should be charged with criminal negligence for having failed to take adequate steps to prevent the fire.

"Criminal action should be taken against the occupier and manager under section 92 of the Factories Act for violating the provisions of the Act," the report says.

The team has also criticised the district administration, the Kerala State Pollution Control Board (PCB), the Factories Inspectorate and the Controller of Explosives for their failure in preventing the disaster.

The PCB, the report demands, should submit a report on pollution control measures and evolve short-term and long-term environmental monitoring plans. HIL, as part of its liability for the fire, should be required to bear the cost for preparing the report on pollution control measures.

The report has pointed out that companies should be asked to disclose onsite and offsite emergency plans for the safety of workers and members of the public within a specified timeframe.

The team has also asked the district administration to explain why it has failed to prepare people for an appropriate response in the event of such emergencies.

The district administration, they have stipulated, should prepare a comprehensive disaster response plan for such incidents. It should include components dealing with mass evacuation, disaster containment, emergency environmental response, emergency medical response and short- and long-term medical and environmental monitoring and rehabilitation.

Papiya Sarkar

RESOURCES

POPS REPORT - A REALITY CHECK ON SOUTH ASIA



TOXICS LINK has released a report titled 'POPs in South Asia: Status and environmental health impacts'. The report provides a comprehensive overview of sources of Persistent Organic Pollutants

(POPs) in the region, and known and suspected exposure pathways. It also documents in detail the evidence of POPs in all spheres of the environment. The report gives comprehensive compilations of all studies on the health burden of POPs.

In the overall picture, the data available shows reason for concern. The lack of focus on the environmental and health impacts of these chemicals is apparent. Industry information is either not available or impossible to obtain. Governmental policy has also not addressed the issue substantially. Also, community awareness about POPs is very low. The refrain in the scientific community is that research in the area needs to be stimulated in a systematic manner.

The report emphasises that the situation is all the more disturbing because there is very little available data on old and unused POPs pesticides in the region. There is a paucity of monitoring and regulating capabilities and a lack of testing facilities in the case of POPs like dioxins and furans.

These problems are compounded by the fact that the viability of cleaner technology options checking unintentional POPs release are not studied in the region. Neither is there any documentation of existing processes to evaluate their POPs-generating potential or remedial actions.

Papiya Sarkar

MORE ON MERCURY

ON JUNE 30, 2004, Toxics Link organised a workshop to raise the issue of usage of mercury in the healthcare sector, at the India International Centre. The panelists were Dr M. Subba Rao, Additional Director, Ministry of Environment and Forests (MoEF); Dr T.K. Joshi, Director, Centre for Occupational and Environmental Health; Dr Sudhir Joseph, Deputy Director, St Stephen's Hospital; and Ravi Agarwal, Director, Toxics Link.

The panelists and audience were mainly concerned with the lack of awareness regarding mercury poisoning in the country – while developed countries have recognised the risk involved in using mercury-filled medical instruments, and have replaced them for digital ones, several hospitals in our country still use mercury thermometers and blood pressure instruments. Toxics Link released the following publications to coincide with the event:

▲ **Lurking menace: Mercury in the healthcare sector:** the report documents the usage pattern of mercury products in five large hospitals of the city and presents the views of leading dentists in



The panelists at the mercury meeting organised by Toxics Link.

the city regarding dental amalgam.

The report presents, in the form of case studies, the annual consumption of thermometers and sphygmomanometers in an average-sized hospital based on which a conservative calculation has been made regarding the release of mercury by the hospitals and dental clinics.

▲ **Information flyer for dentists:** a four-page information sheet which highlights the dangers of mercury to dentists and their families.

▲ **Information flyer for hospitals:** highlights places at which mercury is used in a healthcare institution and suggests alternatives in each case, to allow them to move away from the deadly metal.

▲ **Poster:** this A4-sized poster titled 'Don't take mercury lightly' is targeted at nurses. It depicts



a nurse collecting mercury after a spill. The poster aims to increase the awareness of nurses regarding the dangers associated with mercury. It emphasises the correct safety procedures to be followed in the event of a mercury spill to manage and contain the hazard.

Ratna Singh

In order to avail of these, or any other publications brought out by us, contact us at info@toxicslink.org; or check out the Publications section on our Website, www.toxicslink.org

FACT FILE

24-carat toxicity

Of all the gold in use or storage today, two-thirds is newly mined. The mined ore is crushed after extraction, piled into heaps, and sprayed with cyanide to separate out the gold. However, even years later, these abandoned waste piles can release acid and toxic heavy metals into streams, rivers and groundwater.

These large-scale operations by multinational corporations not only release millions of gallons of toxic chemicals into the environment but also drive communities from their homes, devastating their lives with pollution and economic hardships.

Did you know?

- ▲ A single gold ring leaves in its wake at least 20 tonnes of mine waste.
- ▲ Open-pit gold mines essentially obliterate the landscape, opening up vast craters, flattening or even inverting mountaintops, and producing 8 to 10 times more waste than underground mining.
- ▲ Cyanide is used by large mining operations to separate gold from ore. A rice-grain-sized dose of cyanide can be fatal to humans; concentrations of 1 microgram (one-millionth of a gram) per litre of water can be fatal to fish.

- ▲ Metal mining employs 0.09 percent of the global workforce but consumes as much as 10 percent of world energy.
- ▲ Most gold is not used for essential services; more than 80 percent is used to make jewellery.
- ▲ Between 1995 and 2015, approximately half the gold produced worldwide has or will come from indigenous peoples' lands.
- ▲ Between 1990 and 1998, more than 30,000 people were displaced by gold mining operations in one district in Ghana.
- ▲ Every year, mines in the US generate an amount of waste equivalent in weight to nearly nine times the trash produced by all its cities and towns combined.
- ▲ According to World Watch Institute, the 2,402 tonnes of gold produced in 1997 resulted in 725 million of tonnes of waste, which was contaminated with metals, acids and solvents.
- ▲ In India alone, nearly 80 percent of gold is sold as jewellery. In 1998, India's gold consumption added up to 815 metric tonnes, nearly twice that of the US, making it the world's biggest consumer of gold. India produces only about 2 tonnes of gold – most of the gold consumed here is imported.

Compiled by **Ruchita Khurana**



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 tdelhi@toxicslink.org

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Quotes from the Earth

Quotes from the Earth is a compilation of films on the themes of Hunger, Water and Survival. To screen the films in your city, please get in touch with Ruchita Khurana at ruchita@toxicslink.org. The films are available against a nominal security deposit. You can view details about the films at www.toxicslink.org/earthquotes/