

T O X I C S DISPATCH



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FOR PRIVATE CIRCULATION ONLY

Toxics Link
for a toxics-free world

DECODING THE TOXIC COCKTAILS OF YOUR FOOD

Green foods, be it vegetables or fruits and milk are traditionally considered to be the healthiest of all food options. The list of healthy diets in any recommendation always starts from fruits, vegetables, milk, fish, enough water etc. They provide the very essential nutrients in the form of vitamins, minerals, antioxidants, unsaturated fats and proteins. While our food is a choice that we make for good growth and a healthy body, does it really come as healthy as believed to be? In this article, we will be addressing the concerns of 'food toxicity' – the giant which operates from behind your eyes as a silent poison. It is about the harmful chemical contaminants in our food which might occur from a number of different sources and is essentially a part of food safety. We practically

have very less control over these undesired toxic contaminations unless informed and regulated. It is important that we make that choice being informed and help in raising the regulatory bars as well.

There are some hundreds of such toxins we are exposed to through our food. They differ in their chemical compositions, origin and impacts. They can be added intentionally, generated as byproducts or cross-contaminants during processing, packaging or transport, contacted from various environmental routes or produced naturally. It is often said that the health impacts they bring in are proportional to the amount absorbed and time, life stage of exposure, physiological conditions, etc. Otherwise they are not supposed to be lethal or harm-



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EDITORIAL

It gives me great pleasure in reaching out to you with another edition of the newsletter, just around the time the country is gearing up for general elections and the political discourse and campaigning is at an all-time high. Am anxiously waiting to hear some of the commitments our leaders make towards environmental protection and the text in their election manifestoes- a critical need for general wellbeing of the society. Many of our cities continue to be poorly ranked on multiple environmental parameters and are known to be seriously impacting health of citizens leading to public debate and discussion on issues related to air quality, waste and water though very little on issues of food safety.

Citizens today appear to be extremely concerned and apprehensive about the quality of food they consume since they firmly believe that food contamination and adulteration is compromising their health. The general perception is that the food being grown and processed is not adequately safe for the table on account of excessive use of chemical pesticides during the production process. It's not only the agricultural practices but also use of the chemicals in the food processing, transportation, storage and packaging that could be the reasons for making food unsafe. Hard to believe that we continue to use many of such chemicals that have been banned or placed under watch both globally and nationally!

Food adulteration and use of additives that are known and recognised as highly toxic is another area of concern. The government has brought in Food Safety and Standards Act, 2006, a comprehensive legislation that is expected to regulate all issues around food quality. FSSAI has promulgated standards and labelling norms for various kinds of food products being produced and consumed. The lead article does discuss some of the standards for contaminants as prescribed and compares it to other global standards highlighting the compromises made at many such levels which is perhaps hard to answer since the impacts of low dose toxicity is so well established today. The biggest challenge perhaps is the absence of any effective mechanism to ensure the implementation of the standards as prescribed which creates this fear and apprehension in the minds of people. Citizens today are just unsure of what they are consuming and will continue to be so till a credible mechanism for quality assurance is established and it reposes faith and confidence in them that food on the table is safe and will provide them necessary nutrition without any adverse health impacts.

Satish Sinha
Associate Director

ful within a certain limit. But how about getting slowly poisoned with daily doses (from staple food, milk, vegetables, fruits or water)? Should we not care about how many of such contaminated food items we intake daily (and with how many toxins, from how many sources)? And which of them are at all regulated and tested (None of the raw foods certainly in India)? Though a deal breaker for your mental peace, yet something that must be known about for a better living is the potential harm that can be caused by these toxins. The plethora of diseases and adverse health impacts they cause is certainly not something to be debated or ignored.

'Contaminants' are defined by the International Food Code (Codex Alimentarius) as 'substances not intentionally added to food or feed for food producing animals, but which is present in such food or feed as a result of the production (including operations carried out in crop husbandry, animal husbandry and veterinary medicine), manufacture, processing, preparation, treatment, packaging, transport or holding of such food or feed, or as a result of environmental contamination'. The definition itself talks about the variety of origins of food contaminants. Depending on their usage and the roots of exposure these contaminants are broadly classified into five categories, namely, agro-chemicals, veterinary drugs, environmental contaminants, packaging derived chemicals and natural toxins. A detailed impact-exposure chart for each of these toxin categories is provided in Table 1.

India had several acts and rules separately for safety of different aspects and types of food. In 2006, the Food Safety and Standard Act was introduced as a single reference point for all matters relating to food safety and standards from multi-level, multi-departmental control. The Food Safety and Standards Authority of India (FSSAI) was set up as an independent statutory authority and along with State Food Safety Authorities became responsible for laying down science based standards for food articles and enforcing the provisions of the Act & concerned standards. Foods that the Act is supposed to regulate are "processed, partially processed or unprocessed, which is intended for human consumption and includes primary food to the extent, genetically modified or engineered food or food containing such ingredients, infant food, packaged drinking water, alcoholic drink, chewing gum, and any substance, including water used in the food during its manufacture, preparation or treatment but does not include any animal feed, live animals unless they are prepared or processed for placing in the market for human consumption, plants, prior to harvesting, drugs and medicinal products, cosmetics, narcotic or psychotropic substances". The Act has several specific regulations, including those for Packaging (2018) and Contaminants, Toxins and Residues (2011), etc. Packaging requirements have specific migration limits of heavy metals from plastics and standards for paper, board, metal, metal alloy of food contact materials. The Contaminants, Toxins and Residues regulations have specified maximum concentration limits for 10 heavy metals, several naturally occurring toxins, 149 insecticides, some antibiotics and veterinary drugs.

TABLE 1: TYPES, USAGE ROUTES, IMPACTS OF TOXINS IN FOOD

FOOD CONTAMINATION	Types	Routes	Impacts
	Agro-chemicals Organo-phosphates (OPP), Organo-chlorines (OCP), heavy metals	<ul style="list-style-type: none"> Used for plant protection as pesticides, insecticides, fungicides, herbicides 	<ul style="list-style-type: none"> Pesticides: neurotoxin, xenobiotic substances, exerts acute toxicity and reproductive toxicity (endocrine disruption, infertility, fetal malformation), liver, lung, skin & blood diseases, carcinogenic, lung cancer (arsenic based pesticide), ovarian cancer (herbicides). Not bio-degradable & bioaccumulates in food chain. Vet Drugs: Genotoxic, immunotoxic, carcinogenic, endocrine effects, impairs intestinal microflora, develops antibiotic resistance, hypersensitivity and anaphylactic shock, damages kidney Lead: neurotoxin, reduce RBC, impairs cognitive development & intellectual performance, lethal in high dose Cadmium: Renal tubular dysfunction, high risk of lung and breast cancer, osteomalacia and osteoporosis Arsenic: damages dermal, respiratory & nervous systems, mutagenic & carcinogenic Nickel: dermatotoxicity, lowers body weight, and fetotoxicity among pregnant women Mercury: exerts cardiovascular, reproductive & developmental toxicity, neurotoxic, nephrotoxic, immunotoxic & carcinogenic Mycotoxin: carcinogenic, teratogenic, haemorrhagic, dermatotoxic, leads to immunodeficiency, primary hepatocellular carcinoma, liver cirrhosis, nephropathy, impaired intestinal integrity, hyperestrogenism, reproductive dysfunction, esophageal cancer and birth defects Dioxins: Language delay, disturbances in mental and motor development. Persistent and bio-accumulative PCBs: Neurological disorders, impaired immune response, neurobehavioral alterations observed in newborns and young children of women with PCB. Persistent and remain in environment. BPA: Endocrine Disruptor, developmental toxicity. Nonbiodegradable, persistent & bioaccumulates Phthalate: Endocrine disrupting chemical, epigenetic modulation (alteration of cellular phenotype without altering the genotype), reproductive toxicity in women and men; insulin resistance and type II diabetes; overweight and obesity, skeletal anomalies, allergy and asthma, cancer, etc.
	Veterinary Drugs Antibiotics & antiparasitics (Tetracyclines, Sulfonamides and quinolones), Hormones & hormone analogs, Steroids, β -Agonists, Stilbenes, Sedatives, Nonsteroidal anti-inflammatory drugs	<ul style="list-style-type: none"> Used to treat disease, promote growth, improve quality & reduce production cost in fisheries and animal husbandry. Residual amounts remain in edible tissues, milk and eggs 	
	Environmental Contaminants Heavy metals (lead, mercury, arsenic), dioxins, polychlorinated biphenyls (PCBs), bisphenol A (BPA) and phthalates, OCP & OPP, marine biota pollution including microplastics, radioactive elements, etc.	<ul style="list-style-type: none"> Metals from mining, pesticides & other industrial activities, PAHs & other toxic chemicals from incomplete combustion during industrial processes, food processing, unintended byproducts, chemical dispersants used during oil spills, end-of-use contamination from and personal care products & other sources of air, soil and water pollution finding their way to open foods & vegetables 	
	Toxins from Industrial Processing <ul style="list-style-type: none"> Polycyclic aromatic hydrocarbons (PAHs), Polybrominated diphenyl ethers, Phthalates disinfectants nitrosamines chloropropanols, acrylamide, furanes metals, naphthalene, methylbromide, toluene, ethylbenzene, and ortho- and paraxylenes 	<ul style="list-style-type: none"> Used in technological processing, as flame retardants industrial plants & processes Food contamination throughout product life (collection of raw materials, cleaning phase, processing, storage, transport and consumption) Formed during food processing methods (heating, roasting, grilling, baking, canning, fermentation, or hydrolysis) During transportation from vehicle exhausts of petrol and diesel or from the release of high barrier wrapping materials 	
	Packaging derived Chemicals Bisphenol A (BPA), semicarbazide (SEM)	<ul style="list-style-type: none"> Used in a) food contact materials (packaging, containers, kitchen equipment, cutlery and dishes) as inner liners to prevent corrosion, b) production of polycarbonate plastics in food containers and migrate into the food 	
	Natural Toxins Mycotoxins aflatoxins, ochratoxins, trichothecenes (deoxynivalenol, nivalenol), citrinin, zearalenone, fumonisins, tremorgenic toxins and ergot alkaloids	Fungal, bacterial, viral, parasitic growth on raw or unprotected processed food resulting into toxin production in food and agricultural products. These can be natural, due to agro-climatic conditions, storage condition, transferred from infected animals, contaminated soil, water, sewage, human handling, etc.	

While India has a long list of pesticide standard limits for raw vegetables, cereals and fruits, there is no widely followed or standard practice of regulating them for the items sold in open markets. Many of these pesticides listed are already banned nationally and internationally to be used in agriculture but are still listed with maximum

limits which shall immediately be zero in their acceptable concentration limits in all food items. When it comes to heavy metals, India's stands (standard limits) are often very high than that of the international standards and most importantly there are no prescribed limits for rice, raw vegetables and fruits in the country while 'unprocessed'

or 'primary foods' very much fall under the Food Safety Act. Also, packaging derived chemicals are never addressed anywhere. Let's have a comparative look at some of the maximum limits in Indian standards and International 'Food Code' (International Food Standards by FAO and WHO).

Table 2: International and National Standards for Chemicals/Contaminants in Food

International and National Standards for Chemicals/Contaminants in Food	Maximum Level: International (WHO-FAO)	Maximum Level: India
<ul style="list-style-type: none"> Ochratoxin A Aflatoxin Aflatoxin M₁ 	<ul style="list-style-type: none"> Wheat, Barley, Rye: 5 µg/kg Different nuts: 10-15 µg/kg Milk: 0.5 µg/kg 	<ul style="list-style-type: none"> Wheat, Barley, Rye: 20 µg/kg All articles of food: 30 µg/kg Milk: 0.5 µg/kg
Arsenic	Edible fats, oils, fat spread: 0.1 mg/kg Rice husked: 0.35 mg/kg Rice polished: 0.2 mg/kg Salt food grade: 0.5 mg/kg	Milk: 0.1 ppm Soft drink: 0.5 ppm Infant Milk substitute and Infant foods: 0.05 ppm Turmeric whole and powder 0.1 ppm Juice of orange, grape, apple, tomato, pineapple and lemon: 0.2 ppm Foods not specified: 1.1 ppm
Cadmium	Brassica (broccoli, cauliflower, cabbage, etc.), Bulb (garlic, onion, etc.), Fruiting vegetables (corn): 0.05 mg/kg Leafy vegetables: 0.2 mg/kg Pulses, Legume, root & tuber, stalk & stem vegetables, Cereal grains: 0.1 mg/kg Rice polished: 0.4 mg/kg Wheat: 0.2 mg/kg Salt food grade: 0.5 mg/kg	Infant Milk substitute and Infant foods: 0.1 ppm Turmeric whole and powder: 0.1 ppm Other foods: 1.5 ppm
Lead	Fruits: 0.1 mg/kg Brassica, Bulb, Legume, Root & Tuber vegetables, Pulses: 0.1 mg/kg Fruiting vegetables: 0.05 mg/kg Leafy vegetables, mushrooms: 0.3 mg/kg Cereal grains: 0.2 mg/kg Fish: 0.3 mg/kg Meat: 0.1 mg/kg Milk & milk products: 0.02 mg/kg Fruit juices: 0.03 mg/kg Edible fats & oils: 0.8 mg/kg Infant formula, formula for special medical purposes intended for infants and follow-up formula: 0.01 mg/kg	Canned Fish, meat, dried or dehydrated vegetables: 5.0 ppm Fruit & vegetable juice: 1.0 ppm Soft drinks: 0.5 ppm Edible oils & fats: 0.5 ppm Infant milk substitute & infant food: 0.2 ppm Turmeric: 10 ppm Food colouring other than caramel: 10.0 on the dry colouring matter Foods not specified: 2.5 ppm
Mercury	Salt food grade 0.1 mg/kg	Fish: 0.5 ppm Other foods: 1.0 ppm
Methylmercury	Certain fish species: 1.2-1.7 mg/kg	All foods: 0.25 ppm
Acrylonitrile (C ₃ H _{3.5} N)/2-Propenenitrile/vinyl cyanide (VCN)/cyanoethylene	Food: 0.02 mg/kg	---

The Codex Alimentarius, or ‘Food Code (International Food Standards) is a collection of standards, guidelines and codes of practice adopted by the Codex Alimentarius Commission. The Commission, also known as CAC, is the central part of the Joint FAO/WHO Food Standards Programme and was established by FAO and WHO to protect consumer health and promote fair practices in food trade.” - <http://www.fao.org/fao-who-codexalimentarius/en/>

Food poisoning is a concern worldwide and some of the high priority global health concerns, like, malnutrition, diarrhea are associated with food contamination. Instances of heavy metal contamination including cadmium, cobalt, lead in raw foods have been reported in several researches from the coun-

try. Studies have also shown that rice and maize as grains act as hyper-accumulators of chromium and copper and when taken via food crops, cobalt and chromium pose the highest health risk to non-cancerous and cancerous diseases respectively. A recent study has detected micotoxin contamination in 100% of the samples from 29 major infant food product brands of the Indian market. Extensive use of pesticides and their presence in our daily used fruits and vegetables at levels exceeding far from the prescribed standards have been reported time and again. Even a 2019 study has detected residues of methyl parathion and triazophos (organophosphate insecticides) in fruits and vegetables at concentrations posing health risks. There is enough scien-

tific evidence available for occurrence of all kinds of food contaminations in India and it is high time that we take a note of them for paving our path towards food safety.

With all these uncertainties of toxic exposures of our food, we are left with almost zero choices for our food safety other than just clean cooking practices. What is needed is for the government to come up with better regulatory measurement and implementation of food safety, to promote good agricultural practices, to implement good manufacturing practices during the handling, storage, processing, and distribution of cereals for human food and animal feed, to educate producers regarding the environmental factors that promote infection, growth and toxin production in crops, etc. After all, nutrition, standard of living and improved health are our constitutional rights (Article 47, Directive Principle of State Policy, Indian Constitution) and duties of the State to fulfill.

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Source:

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BATHING IN TOXINS: ARE WE REALLY CLEANING OURSELVES?

Pampering yourself is the mantra of this consumerist generation. Who does not want to smell like strawberries or water lilies when they come out of the washroom? This exquisite routine includes using a surplus of cosmetics. With time the number of products we use each day is increasing and so are chemicals present in our products. From just a soap and shampoo, only may be a decade or two back, we have moved on to body wash, hand wash, soap, shampoo, conditioner and serum, which have become a necessity. The principle of social class plays an important role in deciding the number of products we use. Having a comprehensive skin care regime is considered a mannerism of the higher social class, a class that people want to associate themselves with. However, we seldom think about the countless chemicals we are exposing ourselves to on a daily basis.

The companies claim that the chemicals that are present in cosmetics are in small quantities, then how could they possibly harm us? The rhetoric used in the image below is the same. But the question to ask is if these companies go beyond their individual product and evaluate the concentration of chemicals the consumer is exposing themselves to in its entirety, with the innumerable chemicals they use every day. What is more startling is the carefully designed ingredients section in cosmetic product packaging and its small font size. The seemingly harm-

less ingredient 'Fragrance' often found in almost every cosmetic product indicates a possible combination of over three thousand chemicals, information which remains hidden in the garb of a product which makes us smell like flowers. Phthalates is one of the possible ingredients of fragrance which is a neurotoxin, reduces sperm count in males and can possibly cause liver damage.

Many of the chemicals used in these products are also bioaccumulative in nature, including parabens which are widely used in bathing products. This means that in addition to an increased concentration of exposure, we are also accumulating these chemicals in our bodies. Parabens have potential carcinogenic, mutagenic and reproductive toxicity and potential endocrine disrupting properties and this is just one of a many toxic chemicals that are being used. Triclosan, a chemical used as an antimicrobial agent is lipophilic in nature, it binds and accumulates in the fatty tissues. It is an endocrine disrupting chemical and yet many products are advertised for having Triclosan. The harm caused by it far outlives its advantages.

The lather and foam created while using a shampoo and body wash gives us satisfaction while bathing. The chemical behind this lather is sodium lauryl sulphate (SLS) or Diethanolamine. SLS is often contaminated with a byproduct of its manufacturing process 1,4-dioxane which is a carcinogen.

SLS in itself is a neurotoxin and an irritant. If present in more than 1 percent concentration it can cause severe allergies. Diethanolamine is also a neurotoxin and affects the male reproductive organ adversely. Formaldehyde used in many products as a preservative, can also cause cancer with long term exposure.

In this grim situation where these chemicals are continuously being used in making our daily products one needs to be vigilant before buying them. Cosmetic products in India are regulated under the drugs and cosmetics Act 1940 and Rules 1945 and Labeling declarations by Bureau of Indian Standards (BIS). The disclosure of "active" ingredients has to be 100%, along with the quantity. The International Nomenclature of Cosmetic Ingredients guidelines which state that the ingredients have to be in decreasing order of their quantity has to be followed. This order has to be followed up to 1% concentration and below that the ingredients can be in any order. Nonetheless, compliance of this rule is in question. Many people prefer to buy products which have the words 'natural', 'herbal', 'botanical' or 'free from harsh chemicals'. The market share of these 'herbal' products is rising exponentially. However, there is no regulation or definition of what constitutes 'herbal' in India. We need to rationally check the ingredients and make a sound judgment on whether the company is disclosing its entire range of substances used. One has to analyze the ingredients of a particular product as well. Albeit, a tedious task, there are now applications available in the play store to make our lives easier. Many applications allow you to take a picture of the ingredients and then analyze them from its large data repository. It notifies about the harmful chemicals in it, their nature and thus helps make an informed choice.

The forces of marketing and the blindfold of consumerism have put us in a delusion that our skin needs toning, cleaning and moisturizing everyday. Using these products is also a matter of convenience as they are easily available and the price

"THE DOSE MAKES THE POISON"

APPLE SEEDS



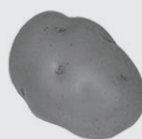
CONTAIN AMYGDALIN
~0.6g/kg of seeds

PEARS



CONTAIN FORMALDEHYDE
~0.06g/kg

POTATOES



CONTAIN SOLANIN
~0.2g/kg
(higher in green potatoes)

COURGETTES



CONTAIN CUCURBITACIN E
Variable
(higher in bitter courgettes)

ALL OF THE FOOD ITEMS ABOVE CONTAIN NATURAL CHEMICALS THAT ARE TOXIC TO HUMANS. HOWEVER, THEY ARE USUALLY PRESENT IN VERY SMALL AMOUNTS, FAR BELOW THE HARMFUL DOSE.

JUST BECAUSE A CHEMICAL IS PRESENT, DOES NOT MEAN THAT IT IS HARMFUL IN THE AMOUNT PRESENT.

Source: <http://www.awakeorganics.co.uk/wp-content/uploads/2017/03/ToxicChems.jpg>

The Ugly Truth of Cosmetics

All are possible carcinogens

Triclosan

Used As: Antimicrobial Agent
Possible Effects: disrupt thyroid and reproductive hormones, bacterial resistance development

Parabens

Used As: Preservative
Possible Effects: Hormone Disruptor, Rashes, Allergies

Formaldehyde

Used As: Preservative
Possible Effects: Rashes, Allergies, carcinogenic impurities

Phthalates

Used As: Plasticizer, solvent, fragrance ingredient
Possible Effects: Reduce sperm count in males, liver damage

Sodium Lauryl Sulphate

Used As: Cleansing and Emulsifying agent
Possible Effects: Hormone Disruptor, cataract, irritant, gastrointestinal effects

Diethanolamine

Used as: pH adjuster, foaming agent
Possible Effects: skin irritation, possible organ toxicity, contamination concerns

EVEN “HERBAL” PRODUCTS CAN HAVE HARMFUL CHEMICALS!

EUREKA!



Fragrance/ Perfume

Beware of this ingredient. This could refer to a possible chemical composition or over 3000 ingredients. This could include carcinogens, allergens, reproductive toxins. Phthalates is one of the possible ingredients

GUESS WHAT?

This is not inclusive of all the harmful chemicals in cosmetics

range is such that it caters to many classes. As much as quick and ‘whitening’ results they might have, they have long drawn effects. We have several natural alternatives to soaps and scrubs, even to moisturize our skin. Milk, honey, oatmeal, rice powder and lemon can be used to naturally exfoliate and cleanse our skin. Diluted apple cider

vinegar can be used as a toner and what better way to hydrate your skin than to use aloe vera gel? Coconut oil can be used for the same and it even has sun protection factor (SPF). The industrial standards are allowing these toxins to surface in our bathrooms and thence in our lives. A transition back to primitive ages of using only

natural products is not plausible especially with the altering environment. The idea is to make a conscious choice and choosing a combination of products which is safe and suitable for your skin.

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HIGH LEAD FOUND IN PAINTS, WHO IS RESPONSIBLE?

Lead, a toxic heavy metal is being used in enamel paints to enhance the beauty of that paint (such as durability, glossiness, antifungal and antibacterial properties, etc.). But its wide usage may cause many human and environmental health hazards. Being a cumulative toxicant, it causes Lead poisoning in humans, thus accumulating in the body and specially targeting our neurological system, putting young children and pregnant women at a higher risk.

Research studies have shown that many paint manufacturers in India phased out lead from enamel paints in 2009 but still there were some paints which were having very high lead levels and that was specifi-

cally produced by small and medium paints manufacturers.

The government of India notified the “Regulation on Lead contents in Household and Decorative Paints Rules, 2016” on 1st November, 2016 which came into force from 1st November, 2017.

In a research study conducted by Toxics Link in 2018¹ for the SMEs enamel paint samples manufactured after the date of commencement of the lead in paint rules 2016 showed very high amount of lead in 17 of the 20 tested samples. A paint can (SMEs) labeled with ‘no added lead’ also

showed the lead level to be 60 times more than the prescribed standard of 90 ppm. This left us with the question as to why after the compliance of lead in paint rules there is still production of lead-based paints in the country, why and **who is responsible?**

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¹ <http://www.toxicslink.org/docs/Lead%20in%20Paints%202018.pdf>

INTERVIEW



"We all need the environment to survive, yet it is the most neglected and abused"

-Mike Pandey

Mike Pandey is an Indian film maker specializing in films about wildlife and the environment. He has won over 300 awards for his work to spread awareness about biodiversity and species conservation. Born in Kenya, the Nairobi National Park, which was at the back of the Pandey household proved a rich source of inspiration for both Mike and his brother Ishwar. Trained and educated in the UK and US the brothers experiences have been wide and varied from training in Hollywood as interns, to Director of special effects and war scenes in films like Razia Sultan, Betaab, Gazab etc. in India. But the call of the wild was strong and Mike's passion and care for the natural world pulled him back to Indian wildlife. With over three decades of filmmaking experience Mike has produced over 600 films and won scores of awards both national and international. He is thrice winner of the Wildscreen Panda Award, also known as the Green Oscar: The Last Migration – Wild Elephant Capture in Surguja (1994), Shores of Silence: Whale Sharks in India (2000) and Vanishing Giants (2004). Shores of Silence also won a National Award for Best Film in the "Exploration & Adventure" Category, 2005. Mr Pandey in an interview with Toxics Link talks about films, environment and how each one of us can contribute our bit towards conserving the environment.

Q1. What are the major environmental threats India is facing?

We are in serious trouble and heading towards a disastrous situation. Tragically, wherever you look, there are challenges and issues, from global warming to waste management; from diminishing resources like water to the hazardous air and water pollution; from climate change to failing crops. The whole

world is in turmoil today and we all are to be blamed for this.

Q2. How do you see the role of government and the civil societies towards addressing the environmental concerns?

There is a need for management, be it waste management or resource management. There are sufficient laws and legislation, but their implementation is crucial. There is also the need of public participation besides the laws in place. People need to be sensitized, educated and made partners in our struggle towards restoration, management and prudent use of resources. Working together will bring the ground level change.

Q3. What changes or impacts can a film bring to the society?

Films can be a very effective tool of communication. As observed, films can play a critical role in generating awareness, educating people, sensitizing the general public and also provide many solutions that can be implemented by the general public. The whole communication system is a changing school. The future is in the hands of tablets, mobile phones and all sorts of visual communication.

Film is a strong medium to be the agent of change. If you see my film "Shores of Silence-whale sharks", the film brought legislation in India within a month which would otherwise have taken ten years to bring in a law. It also brought legislation globally, protecting a species from extinction.

Similarly, "Broken Wings" brought ban on production and manufacture of the lethal drug Diclofenac all over India within weeks.

Q4. What led you to be an environmentalist and an environmental film maker?

I think it's a way of life for me... a very precious part of the universe and perhaps the most neglected one.

We all need the environment to survive, yet it is the most neglected and abused. We are the most intelligent species on earth and with all the intelligence we have failed to see that we have systematically destroyed the very source of life on this planet. Everything around us has been shattered by greed and miserable desire and greed for power. Somebody has got to speak out and tell the truth. The way I

have been brought up and educated, I believe that the earth is the mother of all mothers- a giver of life. A voice has to be raised for this mother like your own mother. Can you all stand by and watch it getting destroyed? We are the only species that can restore the damage done to the planet- our only Home. We all speak about it but these are merely words and hot air.

Q5. How has your life changed after receiving Green Oscar Award?

The Green Oscar was a great humbling event which brought the plight of the whale shark to the global platform. It was also satisfying to see that a small voice from India was being heard by global communities at a global forum and the Green Oscar was an indicator that I was going to the right direction. It was an endorsement and acknowledgement that conservation was the need of the day. It also helped in bringing about national and global conservation and protection for the whale shark which was till then an "Indeterminate" category of the Red book. The film was effective in conserving and protecting a critically endangered species from extinction.

Q6. What an individual like me can contribute to save the environment and make the earth a better place to live in?

Everyone of us can start from home. Cut down the use of plastic, be minimal when ordering food. Pour out only as much water as you need. Switch off all electronic articles including your phone when not in use especially at night. The stand-by mode consumes electricity and even emits injurious radiations. Carry on your own cloth bag and avoid totally one time use plastic, cling film, straws and plastic cutleries, cups at parties or everyday use.

Your efforts however small will make a huge difference. Let us not underestimate the power of one.

The ocean is nothing but trillions upon trillions of drops of water all united to our mighty oceans - a formidable force. It is time for humanity to come together and unite in harmony and work towards a sustainable earth. Help restore and create a balance - the natural equilibrium of the earth. That is the hope for the future and you can play a part in it.

Ruby Rani

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1. INDIA'S COMMITMENT TO BEAT PLASTIC POLLUTION 'DOABLE': UNEP

Source: *Indiatimes, New Delhi, Oct 3, 2018*

NEW DELHI: Calling India's commitment to beat plastic pollution "doable", UN environment chief Erik Solheim said Wednesday there is enormous energy from its states to fulfil its promise to eliminate single-use plastic by 2022.

He suggested a three-pronged approach to beat plastic pollution and said the first step is elimination of plastic products, such as plastic straw and cups, that do not serve any purpose.

"Then there are plastic products that are very useful and those we need to recycle, and the third is innovation where we can use straws made from hay, from bamboo," he told PTI.

Talking about India's commitment to beat plastic pollution, Solheim said it is a "doable" challenge to eliminate single use plastic by 2022.

"I can see enormous energy in India from various states to beat plastic pollution who have made very very strong commitments (to beat plastic pollution). It is doable," he said.

Read more at: http://timesofindia.indiatimes.com/articleshow/66058829.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

2. MORE RIVER STRETCHES ARE CRITICALLY POLLUTED: CENTRAL POLLUTION CONTROL BOARD

Source: *The Hindu, New Delhi, September 17, 2018*

The number of polluted stretches of the country's rivers has increased to 351 from 302 two years ago, and the number of critically polluted stretches — where water quality indicators are the poorest — has gone up to 45 from 34, according to an assessment by the Central Pollution Control Board (CPCB).

While the 20,000 crore clean-up of the Ganga may be the most visible of the government's efforts to tackle pollution, the CPCB says several of the river's stretches — in Bihar and Uttar Pradesh — are actually far less polluted than many rivers in Maharashtra, Assam and Gujarat. These three States account for 117 of the 351 polluted river stretches.

Based on the recommendations of the National Green Tribunal, the CPCB last month apprised the States of the extent of pollution in their rivers.

Mithi among the worst

The most significant stretches of pollution highlighted by the CPCB assessment (which is yet to be published) include the Mithi river — from Powai to Dharavi — with a BOD (Biochemical Oxygen Demand) of 250 mg/l; the Godavari — from Someshwar to Rahed — with a BOD of 5.0-80 mg/l; the Sabarmati — Kheroj to Vautha — with a BOD of 4.0-147 mg/l; and the Hindon — Saharanpur to Gaziabad — with a BOD of 48-120 mg/l.

In its compilation of polluted stretches in Uttar Pradesh, the Ganga, with a BOD range of 3.5-8.8 mg/l is indicated as a 'priority 4' river.

"The cultural significance of the Ganga is such that there's been greater focus on it but many more rivers are far more polluted," said an officer in the Union Water Resources Ministry, who didn't want to be identified.

Read more at: <https://www.thehindu.com/news/national/more-river-stretches-critically-polluted-cpcb/article24962440.ece>

3. KOLKATA, MUMBAI RELEASE LEAST TOXIC EMISSIONS AMONG 6 MEGA CITIES: CSE

Source: *Express News Service, Kolkata, August 26, 2018*

A study undertaken by the Centre for Science and Environment (CSE) to assess emissions and air quality in 14 cities across the country has concluded that Kolkata

releases the least emissions per trip made by a commuter. Bhopal recorded the lowest overall emissions among the cities studied. According to the report — 'The Urban Commute' — Kolkata and Mumbai emit the least among India's six mega cities because of the wide use of public transport. The study ranks 14 cities on the basis of emissions of heat-trapping carbon dioxide and toxic pollutants like particulate matter and nitrogen oxides, as well as energy guzzled through urban commuting. The 14 cities studied are Delhi, Mumbai, Kolkata, Chennai, Bengaluru and Hyderabad (mega cities); and Ahmedabad, Pune, Jaipur, Lucknow, Kochi, Bhopal, Vijayawada and Chandigarh (metropolitan cities).

While Kolkata ranks sixth among the 14 cities in overall emissions, it wins among the six mega cities and does better than even some metropolitan cities like Pune and Ahmedabad.

Anumita Roychowdhury, executive director (research and advocacy), CSE, said, "This review has become necessary as greenhouse gas emissions from transport — though the third highest currently among all sectors — has recorded the steepest increase. This is also responsible for health-damaging toxic exposure..."

"Though Kolkata generates the third highest volume of trips due to its large population, it still has the lowest average trip length for different modes because of compact urban form. The average distance travelled by different modes in Kolkata is lowest among all mega cities. Kolkata also has the lowest vehicle stock among the mega cities and second highest share of public transport. Its public transport culture, compact city design, high street density, short travel distances and restricted availability of land for roads and parking are among the good practices...", says the report.

Read more at: <https://indianexpress.com/article/cities/kolkata/kolkata-mumbai-release-least-toxic-emissions-among-6-mega-cities-cse/>

4. GANGA WATERWAY PROJECT CLEARED AFTER OVERRULING EXPERT PANEL

Source: *The Hindu*, New Delhi, Nov 18, 2018

India's longest waterway project, one terminal of which was inaugurated by Prime Minister Narendra Modi earlier this week, was made possible only after a high-power Committee of Ministers and senior officials from multiple Ministries overruled the recommendations of experts appointed by the Environment Ministry. The latter had recommended public consultations and a full-fledged environment clearance, documents made available through the Right to Information (RTI) Act show.

As part of the the Modi government's ambitious plan to make stretches of the 2,500-km-long Ganga suitable for transporting containers, it decided to make navigable a 1,390-km stretch of the river between Varanasi in Uttar Pradesh and Haldia in West Bengal. The project entails construction of 3 multimodal terminals (Varanasi, Sahibganj and Haldia); 2 intermodal terminals; 5 Roll On–Roll Off (Ro-Ro) terminal pairs; a new navigation lock at Farakka; assured depth dredging; an integrated vessel repair and maintenance facility; a Differential Global Positioning System (DGPS); a River Information System (RIS); and 'river training' and river conservancy works.

The 5,369 crore project is partly funded by the World Bank. However, to enable container barges and ships to carry at least 2,000 tonnes, the project requires the river bed to be dredged to enable a minimum draft of three metres along the river, as well as to make the river channel at least 45 metres wide.

Since early 2016, the Union Ministry of Environment and Forests and the Inland Waterways Authority of India (IWAI), which is attached to the Union Shipping Ministry, have been at odds over whether this dredging required environmental clearance (EC). This is a detailed process that involves a consultation with locals likely to be affected by the project and residing at locations along the river, where major constructions would be executed.

Read more at: <https://www.thehindu.com/news/national/ganga-waterway-project-cleared-after-overruling-expert-panel/article25528142.ece>

5. FSSAI MUST ENSURE FOOD REGULATIONS AT SCHOOLS ARE MANDATORY

Source: *Down To Earth*, New Delhi, Dec 27, 2018

Recent news reports show that the Delhi Commission for Protection of Child Rights (DCPCR) carried out an inspection at some private schools in Delhi to examine the food being served in the canteens there.

"The commission conducted the inspection to understand what kind of food is available in school canteens. I personally visited most of the schools and it was depressing to see foods high in fat, salt and sugar (HFSS) mostly available in schools," says Ranjana Prasad, member, DCPCR.

Although there is no report or press release on the study by DCPCR, this development highlights the crucial issue of availability of junk food to children in and near schools.

In 2016, New Delhi-based non-profit organisation Centre for Science and Environment (CSE) conducted an online survey—know your diet—to understand food habits of school children in urban areas. Over 13,200 children in the age group of 9-17 from 300 schools across the country participated in the survey and provided information related to their daily food habits.

The results showed that 93 per cent of children eat packaged food, 68 per cent consume packaged sugar-sweetened beverages more than once a week, while 53 per cent consume these products at least once a day.

It also showed that a large percentage of children, who consume packaged food more than twice a week, eat it at schools and buy the product from school canteens or stores located in the vicinity.

While some steps appear to have been taken to curb the availability of HFSS foods in and near schools, not much has happened on the implementation front.

In February 2015, while hearing a case by Uday Foundation for Congenital Defects and Rare Blood Groups, the Delhi high

court had directed the Food Safety and Standards Authority of India (FSSAI) to enforce its guidelines to restrict the availability of HFSS in schools and nearby areas.

This year, the FSSAI brought out draft regulations which categorised food items into three categories and sought to levy restrictions on availability of HFSS food. However, these draft regulations, in effect, are not mandatory for schools.

Read more at: <https://www.downtoearth.org.in/news/food/fssai-must-ensure-food-regulations-at-schools-are-mandatory-62603>

6. JOHNSON & JOHNSON MOVES TO LIMIT IMPACT OF REPORT ON ASBESTOS IN BABY POWDER

Source: *DNA*, New Delhi, Dec 18, 2018

Johnson & Johnson on Monday scrambled to contain fallout from a Reuters report that the healthcare conglomerate knew for decades that cancer-causing asbestos lurked in its Baby Powder, taking out full-page newspaper ads defending its product and practices, and reading its chief executive for his first television interview since investors erased tens of billions of dollars from the company's market value.

J&J shares fell nearly 3 percent Monday, closing at \$129.14 in New York Stock Exchange trading. That drop was on top of the 10 percent plunge that wiped out about \$40 billion of the company's market capitalization following the Reuters report on Friday. J&J also announced Monday that it would be repurchasing up to \$5 billion of its common stock.

Senator Edward Markey, a Massachusetts Democrat on the Environment and Public Works Committee, on Friday sent a letter to the head of the US Food and Drug Administration calling on the agency to investigate the findings in the Reuters report to determine whether J&J misled regulators and whether its Baby Powder products threaten public health and safety.

J&J Chief Executive Alex Gorsky, in his first interview since the Reuters article was published, defended the company during an appearance on CNBC's "Mad Money" with host Jim Cramer on Monday night.

J&J knew for decades about the presence of small amounts of asbestos in its products dating back to as early as 1971, a Reuters examination of company memos, internal reports and other confidential documents showed. In response to the report, J&J said on Friday that “any suggestion that Johnson & Johnson knew or hid information about the safety of talc is false.”

A Monday full-page ad from J&J -- headlined “Science. Not sensationalism.” -- ran in newspapers including The New York Times and The Wall Street Journal. The ad asserted that J&J has scientific evidence its talc is safe and beneficial to use. “If we had any reasons to believe our talc was unsafe, it would be off our shelves,” the ad said.

Read more at: <https://www.dnaindia.com/world/report-jj-moves-to-limit-impact-of-report-on-asbestos-in-baby-powder-2697387>

7. THE SC ORDER ON ARAVALLI IS NOT JUST ABOUT ILLEGAL MINING

Source: *Hindustan Times*, New Delhi, Oct 29, 2018

Last week, a Supreme Court Bench, comprising Justices Madan B Lokur and Deepak Gupta, directed the Rajasthan government to immediately stop illegal mining in a 115.34-hectare area in the Aravalli range, which straddles the states of Rajasthan, Haryana, Delhi and Gujarat. The apex court said the disappearance (“flying away with hills like Hanuman”) of 31 hills of the range in Rajasthan due to illegal (and, therefore, unsustainable) mining could be a reason for the rise in air pollution levels in Delhi.

In its judgment, the Supreme Court, however, did not explicitly mention another service that the three-billion-year-old Aravalli range has been providing north India for millennia: it arrests the eastward march of the Thar desert, thereby minimising the threat of desertification to the National Capital Region (NCR). Desertification is a slow process in which land productivity and resilience steadily decline due to overgrazing, deforestation and unsustainable agricultural practices, mining and climate change. In India, the main reason for de-

sertification is loss of soil cover, mainly due to rainfall and surface run-off.

The situation on the ground is changing at a rapid pace, leaving environmental experts concerned. This summer, Gurugram (Haryana) witnessed an increase in the frequency, longevity and density of sand storms, a sign of desertification. All deserts, including the Thar, are increasing, they warn. A study released earlier this year by the Dehra Dun-based Wildlife Institute of India (WII) also said the same. The threat of desertification is real for south Haryana, thanks to decrease in open forest cover in Aravalli range over the last three decades. This deforestation of the range — which leads to less moisture in the air — leads to sand storms, and they might get worse if the pace of degradation continues.

In fact, desertification is fast becoming a pan-India problem. In April, speaking at the Asia-Pacific Regional Workshop of the United Nations Convention to Combat Desertification, the Union environment minister, Harsh Vardhan, said India loses 23 hectares of dry land to drought and desertification every minute. This leads to a loss of 20 million tonnes of potential food grain production. Vardhan also spoke about achieving Land Degradation Neutrality by 2030, which means that the amount and quality of land resources to support the ecosystem and enhance food security remains stable or increases within a specified time and place.

Read more at: <https://www.hindustantimes.com/analysis/the-sc-order-on-aravalli-is-not-just-about-illegal-mining/story-8Lb-SYGrYh3P4W0Sf4GEN0L.html>

8. RECYCLERS STORING ELECTRONIC WASTE HAZARDOUSLY: ENVIRONMENT MINISTRY

Source: *The Hindu*, New Delhi, Sep 29, 2018

Many of India’s electronic-waste (e-waste) recyclers aren’t recycling waste at all. While some are storing it in hazardous conditions, others don’t even have the capacity to handle such waste, says a new report prepared by the Union Environment Ministry.

India now has 178 registered e-waste recyclers, accredited by the State governments to process e-waste. India generates more than two million tonnes of e-waste annually, and the bulk of it is processed in the informal sector.

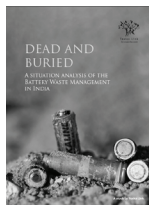
In 2017, the Centre brought into effect the E-waste Rules, which require companies that make or sell electronic equipment to collect a certain percentage of e-waste generated from their goods once they have reached their “end-of-life.” In 2017-2018, the companies were supposed to have collected 10%. This would rise to 70% by 2023. But doing this would require these firms to work with licensed e-waste recyclers and ensure that all e-waste is properly disposed off.

The Environment Ministry conducted checks at 11 registered recyclers and one unregistered recycler in May this year. The recyclers were located in Kanpur, Thane (Mumbai), Vapi (Gujarat), Kolkata, Bengaluru, and Alwar (Rajasthan). The checks led the Ministry to conclude in its report that “...a number of transgressions were seen committed by the recycling facilities such as adopting non-environmentally sound methods of storage, handling and processing of e-waste...non-compliance with guidelines of the Central Pollution Control Board (CPCB)... Certain recycling facilities were non-operational or seemed to be inadequate to handle the capacity of e-waste,” says a letter by the Environment Ministry to the CPCB.

Read more at: <https://www.thehindu.com/todays-paper/tp-national/recyclers-storing-electronic-waste-hazardously-environment-ministry/article25053053.ece>

RESOURCES

DEAD AND BURIED REPORT



Current management status of household battery waste in India and their recovery potential is traced in this recent study by Toxics Link. The study titled 'DEAD AND BURIED' reveals

that millions of the toxic pencil cell or dry cell batteries we use and discard routinely end up in landfills, poisoning our environment. This new report hints at the failure in implementation of the Solid waste Rules under which the end-of-life management of these batteries are currently covered. The study also flags up the concerns of highly valuable resources being lost on account of end-of-life batteries being landfilled. The used and dumped batteries present the potential to recycle and recover around 15 thousand tonnes of zinc and manganese each and about 10 thousand tonnes of steel every year.

TIME TO REBOOT III REPORT



E-waste is one of the most crucial waste issues globally. Its increasing volumes, along with toxicity concerns, has been a cause for concern for last couple of decades.

In a developing country like India, the concern is heightened because more than 85-90% of this waste is recycled in the informal sector, where the use of crude technology leads to health and the environmental risks.

E-waste rules in 2011 (revised E-waste Rules 2016) brought in the Extended Producer Responsibility (EPR) as a key principle to reduce some of these risks. Under EPR, the Producers or the brands selling electronic and electrical equipment are meant to set up takeback system, create awareness among consumers and ensure that e-waste is collected and treated in an appropriate manner.

Time to Reboot III assesses 54 major electrical and electronic brands in India on the waters of Extended Producer Responsibility. The third report in the 'Time to Reboot' series, like the earlier ones, goes beyond the legal mandates and also

assesses some parameters from consumer perspectives. Based on their performances, the Producers or the companies have been grouped into four categories, namely, Green, Blue, Yellow and Red- with Green as the best and Red as the worst. The study report also comes out with some recommendations to improve compliance and the systems on ground.

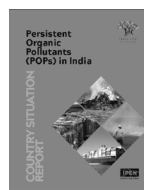
QUOTES FROM THE EARTH FILM FESTIVAL



Quotes from the Earth is a unique and one-of-its-kind environmental film festival organized

biennially by Toxics Link in collaboration with India International Centre, New Delhi. The festival is a collaborative effort that aims to bring under one umbrella thought-provoking and profound films on varied themes of environment – from dwindling bio-diversity to global climate change, sustainability, water and chemicals. Toxics Link organised the eighth edition of the film festival from Dec 6-8, 2018 where a total of 27 films by renowned filmmakers like Gautam Pandey and Doel Trivedy, Aparna Singh, Subbiah Nallamuthu etc were screened. The three-day film fiesta saw an overwhelming response and was attended by over 500 people including school children, environment-conscious people, academics, activists, researchers, and youngsters – who are agents of change in the country.

POPS COUNTRY SITUATION REPORT



India signed the Stockholm Convention on 14th May 2002 and ratified it in 2006 and subsequently submitted its National Implementation Plan to phase out the twelve POPs which are well known as the "Dirty Dozen" in 2011. In the National Implementation Plan (NIP), the government developed its strategy to deal with these chemicals and subsequently some regulations were promulgated by the MoEF & CC to act on these chemicals. Further, the MoEF & CC has come out with a new notification in 2018 to phase out seven new

POPs in the country.

In this context, Toxics Link has prepared this country situation report based on an assessment of the existing inventories, stockpiles of banned POPs and the existing regulations on POPs. This report also critically examines the institutional mechanisms and the role of various institutions for POPs management, as well as throws light on the existing gaps in the implementation of existing rules and regulations. Further the report features a compilation of all the research studies on POPs across the country post the National Implementation Plan which were completed by the Government of India in 2011.

The country situation report has proposed certain recommendations including an urgent need of updating the National Implementation Plan (NIP) for effective management of these new POPs.

LEAD IN PAINTS REPORT



Lead, a toxic heavy metal has been used in household and decorative paints for many years. Its wide usage has brought many human and environmental health hazards to notice. Being a cumulative toxicant, it causes Lead Poisoning in humans, thus accumulating in the body and targeting our neurological system specially, putting young children and pregnant women at a higher risk.

Considering the quantum of health impacts, the issue has been addressed globally and many countries have phased out lead from their paints. India decided to bring in the regulations very recently, i.e. in November, 2016 with maximum 90 ppm lead content in paints. However, even before the regulations were notified many leading brands voluntarily adopted 90 ppm limit.

Even though the leading brands had shifted, the Small and Medium scale Enterprises (SMEs) are still a matter of concern for the country. Thus, this study was conducted to assess the compliance of lead in paints regulation by SMEs and to check the level of awareness among the consumers and the paint retailers.

TRAVELING FILM FESTIVAL- "QUOTES FROM THE EARTH"

Along with the biennial "Quotes from the Earth", Toxics Link also organises travelling film festival at cities, towns and remote locations of our country. The purpose is to provide a platform for local residents/institutes to connect their surrounding issues with that of larger global environmental concerns, to further enhance awareness and strengthen the policy advocacy initiatives at all levels. The travelling film festival is organised with support of local civil society organisations or schools or any other environment based institution. If you are interested in organising "Quotes from the Earth" in your area, please write to us or call us at our office numbers.



PHASING OUT BPA!

It's almost impossible to find a product that does not have synthetic chemical added into it, and one of them is the commonly used baby feeding bottle containing the chemical BPA in it. BPA or Bisphenol-A found in baby feeding bottles play the role of Endocrine Disruptive Chemicals (EDCs) that are capable of harming infants and newborn babies. Many countries have banned it as a precautionary measure. Toxics Link has been campaigning against the chemical and released a lab tested report titled "Bottles can Be Toxic" that received considerable attention from all stakeholders including the media. The report was also discussed during winter session of the Indian Parliament. Currently, we are having dialogues with Bureau of Indian Standards to completely phase out BPA from India. Join us in our campaign against BPA.

TOXICS LINK LIBRARY-A TREASURE HOUSE OF KNOWLEDGE

The library of Toxics Link houses a variety of books, magazines and reports which are well-stocked, classified and indexed, for the benefit of the readers. One can also get the entire collection of around 520 documentary films from around the world on various issues concerning environment. It has over 4900 books and research based reports; and new books, magazines and periodicals are added from time to time. One can also find media coverage on environment that are updated on a regular basis. Besides, the library also has stock of parliament questions that are raised on the research based studies on environment done by Toxics Link. The readers can find all the studies done by Toxics Link on its website.

TOXICS ALERT (E-NEWS)

An environment news bulletin

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

KEEP YOUR HOSPITALS CLEAN & GREEN WITH TOXICS LINK

The Clean & Green Hospitals (CGH), an initiative of Toxics Link, in association with STENUM Asia Sustainable Development Society, is aimed at supporting and facilitating health care facilities in the country to provide environmentally sustainable health-care to the masses. It also offers handholding support for hospitals to implement its suggestions which includes capacity building of internal resources. Besides, CGH has an array of training and awareness materials meant at aiding the process of greening the hospital. Please write to us or call us to get detail information about the support that we provide.



Toxics Link
for a toxics-free world

STAY CONNECTED

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



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