



THE (UN)SILENT WOMEN

A toxic tale of chemical impact on women's health

Women, representing almost half of our global population are still struggling to find an equal place for themselves, at their homes, workspaces, countries and a world which understands their needs and vulnerabilities equally as men's. Gender equality is one of the most talked about issues in today's time, in fact it is one of the Sustainable Development Goals (SDG5), which means that in order to have a sustainable planet, we need to bridge the gender divide. Despite that, there is a huge gender gap that considers women as inferior to their male counterparts, denying them equal rights, opportunities and putting them at the receiving end of social and environmental injustice. It is thus imperative to understand the relationship between gender and environmental issues as it is the key to address environmental challenges in an equitable and sustainable way.

Women and Chemicals though a subject of serious concern has not been given due attention mainly due to lack of comprehensive data over the impact of chemicals on women's health. Historically, most of the studies on health impacts of chemicals have been conducted on men. Though there is some data on impacts of certain chemicals on pregnant and lactating women, (and hence the foetus) yet the recognition and translation of the entirety of the issue at the policy level is not up to the desired level.

Let's begin with understanding what makes women vulnerable to impacts of chemicals. Well, women are differently susceptible to chemical exposure and health outcomes primarily, because of their physiology, biological makeup, different types of occupational exposures, and differential exposures

to chemicals in personal care and household products and also different social situations. They are particularly vulnerable during critical windows of development: in utero, early childhood, adolescence, pregnancy, lactation, and menopause. Not just the exposure, the risks also vary; biological factors— notably size, physiological, hormonal, and enzyme differences between women and men, and between adults and children—also influence susceptibility to health damage from exposure to toxic chemicals¹.

Another reason to look and act upon the issue of chemical toxicity in women is also because of the transgenerational effects. Once a chemical enters the body of a woman, it increases the probability of the chemical also targeting the future generations. In 2010, a study by the

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The pandemic has had a very profound and deep impact across nations and the situation continues to be highly unpredictable. We all have made adjustments and are attempting to adapt to this new normal situation with very deep-seated optimism that this will blow over and life would return to near normal. In the interim we continue to work from home and have on occasions responded to the needs of the society providing relief to the poor migrant labour and also contributed to the efforts of the officials and staff of the Delhi government by providing them with much-needed hygiene kits and PPEs for distribution. The organisation also responded to the critical need of disseminating credible and practical information on managing COVID waste among citizens and healthcare workers. Generation of medical waste has certainly surged, posing serious challenges in its management across the country. Our on-the-ground research on the issue suggests that there is inadequacy of information among citizens on handling and disposal of such waste like masks, gloves, tissues, napkins etc which could have been easily addressed by the regulators and implementing agencies through use of print, electronic and social media.

The amendment to the EIA Rule in the pandemic period has been a matter of serious discussion since it does shift the balance and creates more relaxed conditions thus placing the environment at risk. On the other hand the Government has also taken the decision to ratify the inclusion of seven additional POPs (highly toxic chemicals) of the Stockholm Convention. This will further strengthen chemicals management and its governance in India and is in the larger interest of public health. Chemical issues are highly complex and these have very deep and long-term impacts on human health, many health disorders are now being linked to chemical exposure perhaps even in very small dosages. The society is at serious risk to exposure from multitudes of chemicals that abound us today on account of our lifestyle and habits, it's perhaps hard to protect ourselves in the current scenario. While we all could be at risk these can be disproportionate in case of women and we are now getting evidence of these impacts. Women are more susceptible since they also bear children and have different hormonal secretions, work in very different conditions and are probably more exposed to chemicals; also perhaps

their bodies have a different ability to cope with chemicals thus making them more vulnerable. Different genders have varying abilities to absorb chemicals in their bodies and for women that can be passed on to the children too. Pregnant and lactating women are certainly at much higher risk on account of chemical exposure hence the need for additional protection. Chemicals management are highly complex issues and governments will need to create suitable policies by consultative means to protect human lives especially women thus improving overall health of the society and reducing cost for healthcare services. Investment towards health and wellbeing of society is a long-term investment and a critical input to nation building that needs to be high on priority.

We have not been able to send out hard copies of our previous newsletter due to the prevailing conditions but we continue to reach out to you with soft copies and hope to receive your valuable comments and feedback.

With best wishes and happy Diwali.

Satish Sinha

Associate Director, Toxics Link

University of California confirmed that pregnant women carry multiple chemicals in their bodies that can be passed onto their fetus². One of the most prominent cases proving multigenerational effects is the continued tragedy of diethylstilbestrol (DES). Studies show that daughters of women who took the drug during their pregnancy, (as they were said that it would reduce the risk of pregnancy complications and losses) developed a rare type of vaginal cancer at a very young age. They also suffered from other reproductive tract abnormalities, decreased fertility, increased breast cancer risk, and early menopause. Even the granddaughters of women who took the drug DES have a higher incidence of menstrual irregularities and potential infertility³. Over the years, multiple studies have detected chemicals such as BPA, phthalates, PFCs, PBDE flame retardants in pregnant women.

Women are exposed to a number of chemicals at home, at their workplace and in the environment. Many women

in countries like India are working in the agricultural fields; they are either directly spraying pesticides or just washing pesticide-soaked clothes, exposing themselves to many toxic chemicals. Pesticides, are capable of causing endocrine disrupting impacts and even cancer particularly breast cancer in women. Women are also more susceptible to pesticides than men. They absorb pesticides through their skin more easily than men. For example, dermal absorption of the organochlorine Lindane is three times greater for women than for men⁴. Some are stored in the fatty tissues and since women have more fatty tissues, they carry a higher burden. Thus, the chances of women acquiring cancer after being in close contact with pesticides is definitely higher.



Did you know ?

Pesticides such as Endosulfan, Chlorpyrifos, hexachlorocyclohexane, malathion and aldicarb can cause breast cancer!!

Other than agriculture, developing countries such as India are the major producers of many of the products that the world consumes. These countries use the most chemicals in agriculture, produce most medicines, textiles and many other consumer products, in turn making them severely polluted. The consequences of this pollution are borne by the most vulnerable groups including women majorly because of their living conditions, occupation, lack of knowledge, limited or no access to clean water and food. Women are also prone to a number of occupational hazards. The women working in textile industries for example are exposed to a number of chemicals like formaldehyde which is a carcinogen. Women working in other industries such as plastics are exposed to a wide variety of toxic chemicals such as Styrene, Phthalates, BPA, BFRs, heavy metals and other chemical compounds. Similarly, the healthcare sector is another area where women are exposed to chemicals such as BPA, Triclosan, Phthalates, Mercury and PFCs. Waste pickers are one of the most affected

² Women and Chemicals, The impact of Hazardous Chemicals on Women, WECF

³ Women and Chemicals, The impact of Hazardous Chemicals on Women, WECF.

⁴ Women and Chemicals, The impact of Hazardous Chemicals on Women, WECF

Most of the chemicals that women are exposed to are known Endocrine Disrupting Chemicals. Women-related diseases linked to EDCs include breast cancer, infertility, early puberty, aneuploidy, miscarriage, premature birth, preeclampsia, menstrual irregularities, polycystic ovary syndrome, polyovular follicles, uterine fibroids, endometriosis, shortened lactation, and early menopause.

groups, as they are exposed to a cocktail of toxic fumes and other chemicals in the dump and from open burning.

Cosmetics, which are majorly consumed by women are found to be laden with a number of chemicals including mercury, which is a neurotoxin. They are also at a greater risk of exposure from chemicals in the personal care products (PCPs) and cleaning agents (soaps, detergents). These chemicals are present in most of our everyday products ranging from clothes, toys, furniture, kitchen utensils, paint, cosmetics, hygiene products, personal care products, food packaging, vegetables and fruits. Many chemicals are present in so many different products which were never tested for their impacts on women's health. Chemicals such as phthalates, parabens, pesticides, BPA and much more are now evidently linked to breast cancer and infertility.

The US Center for Disease Control and Prevention (CDC) reported that adult women have higher levels of urinary metabolites than men for those phthalates that are used in soaps, body washes, shampoos, cosmetics, and personal care products, which are linked to birth defects. The World Health Organization estimates that around 1.7 million women will be diagnosed with breast cancer in 2020. This is an increase by 26 per cent from current levels⁵.

It is rather conclusive that since this group of population is being exposed the most, is most vulnerable and is capable of transferring the chemicals to the next

generation, they must be aware about the consequences. Sadly, that is not true. In fact, most of the products that women use, are either not labelled correctly or are not readily available or affordable for them to make an informed choice. There are no choices with women to choose chemical-free products due to ample reasons:

- **Mislabelling:** Most of the companies do not list out all the chemicals that they are using in their products.
- **Lack of regulation:** A large number of countries do not have the required regulations to restrict the usage of toxic chemicals in different products.
- **Lack of alternatives:** Even with increasing information on the presence of hazardous chemicals in consumer products and their impacts on women's health, lack of suitable alternatives act as a major barrier for the consumers who want to switch to non-toxic products.

Due to gender inequality, in most of the countries across the world, the onus of choosing everyday products for their families lies on a woman. Apart from making the choice, cleaning the house using these toxic products also falls upon the women. Many chemicals contained in these products are the same as those used in industrial cleaning agents. They can contain strong irritants, sensitizing and allergenic substances and fragrances, phosphates, carcinogenic and neurotoxic solvents. Some of the most observed effects are skin irritations, allergies and respiratory problems. The ILO states "Some large population-based epidemiological studies have found high cancer rates among cleaners". Among women, invasive cervical cancer is almost five times more common among cleaners than other women. These results are attributed to chemical exposures, particularly solvents⁶.

Gender equality cannot be achieved and women cannot be empowered if they are being exposed and poisoned by this cocktail of toxic chemicals. It is prudent to acknowledge their role in building a healthy and a sustainable future for

all. This cannot be achieved unless we understand the gender differences in risks and impacts of the toxins.

It is imperative to integrate gender aspects into national priorities for chemicals management. Another step in this direction is to ensure the representation of this issue in international conventions (BRS, CEDAW, SAICM, GEF) and develop strategies for its redressal. Along with the representation of the issue, women

leaders should be encouraged and promoted to participate at the policy level discussion to result in more equitable policy solutions which are gender-responsive. It is necessary to strengthen legislations to protect women from the chemical-related risks; most countries including India do not have any policies taking this issue in account.

It thus becomes important to empower women in order to realize SDG5 and to achieve a toxics-free future for everyone. Their vulnerabilities, needs should be understood and their roles should be promoted and enhanced at local, national and regional levels.

Together, we need to close the gender gaps. Start at your homes, treat women equally, encourage them to take wider steps in reaching our global goal of gender equality, where all women, men, girls and boys are not denied of any opportunities or not treated differently based on their gender. Let everyone be a human first.

*As Dr. Martin Luther King, Jr said
"Whatever affects one directly, affects all indirectly".*

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⁵ Women and Chemicals, The impact of Hazardous Chemicals on Women, WECF

⁶ Women and Chemicals, The impact of Hazardous Chemicals on Women, WECF

GUEST ARTICLE

GLOBAL PLASTICS POLLUTION: AN EMERGING THREAT

By Dr. Mahua Saha, Senior Scientist, CSIR-NIO



There is now widespread acknowledgement that we are facing a global plastic crisis, what is not agreed upon are the solutions to this problem. The amount of waste generated by growing urban populations is estimated to increase at an ever-faster rate in Low and Middle Income Countries (LMICs). The World Bank estimates that by 2025, 4.3 billion urban residents globally will produce approximately 1.42 kg/capita/day of municipal solid waste, which equates to 2.2 billion metric tonnes of waste per year. Such an increase in solid waste creates significant environmental and economic challenges, with its management often representing the single largest communal expenditure in LMICs. Conversely, efficient waste management provides multiple benefits, including creation of employment (e.g. around collection and recycling), reduction of greenhouse gas emissions and improvement of public health and wellbeing. Of particular concern is how we deal with plastic waste. A substantial increase in the worldwide production of plastics, from 2 million tons per year in 1950 to more than 335 million tons in 2016 have now led to plastics representing an increasing proportion of solid waste. With no effective global plastic waste management or mitigation mechanisms in place, and largely inadequate waste handling in many LMICs, the resulting globally increasing levels of plastic pollution are now identified as a key cause of environmental and public health risks in LMICs. Up to 12.7 million tons of mismanaged plastic entered the world's oceans in 2010 alone and is predicted to increase by an order of magnitude by 2025 if no action is taken. The impacts of plastic pollution on environmental and public health is of particular concern in many Asian LMICs that represent pollution hotspots. This is in part because they have for decades also received millions of tonnes of plastic waste from industrialized nations that themselves still lack viable plastic waste solutions and an only slowly emerging circular economy. In an LMIC such as India, the burden of plastic waste and the associated environmental pollution

and health risks are disproportionately borne by those who are socio-economically marginalized and are engaged in activities such as litter picking, plastic waste burning for fuel and lack of access to municipal waste management systems.

As highlighted above, plastic pollution is thus a pressing global challenge. However, solutions to reduce the impacts of legacy plastic pollution and to prevent future pollution by further waste mismanagement are still limited. A key reason for this lack of progress is the complexity of the problem. Plastic material properties are highly varied, thus their persistence in the environment and the cocktail of potentially harmful additives that may be released into the environment are also highly variable and not well understood. Furthermore, as plastic is transported in the environment, it degrades from predominantly macroplastic waste stocks into microplastics (MP) of particles < 5 mm in size and further into nanoplastics (NP) with particle sizes < 100 nm.

The development of effective solutions to plastic pollution thus requires acknowledgement of this complexity of plastic waste and the fact that it changes form and function once released into the environment. Our project therefore considers the entire size spectra of plastic waste and pollution, from macro- to micro-, and where possible even nanoplastic, including the dynamic property changes in the environment. Plastic production is one of India's fastest growing industrial sectors, employing around 4 million people, 85-90% of which are small- to medium-sized enterprises meaning solutions need to be easy to implement. The informal waste-based economy is estimated to employ 0.4% - 2.7% of the urban population (~1.5 - 9.8 million people) meaning solutions also need to be equitable and account for the needs of this mostly marginalized population. The growing economy will inevitably lead to further urbanization, manufacture and use of plastics, thus exacerbating the waste problem. Systemic solutions are thus needed now if the scale of the problem is to be managed. In India waste generation is ~ 0.2-0.3 kg/capita/day in small towns and cities with a population below 200,000, rising to

~ 0.4-0.6 kg/capita/day in cities with a population > 1,000,000. In India 8 million tons of plastic products are consumed every year and 11kg plastics per capita is consumed (CPCB, 2015-16). India's plastic consumption has increased from 10.2 MTs in 2013-14 to almost 16 to 20 MTs by 2015-16 (PlastIndia Foundation). As per a 2013 estimate by the Central Pollution Control Board (CPCB), Indians throw out 15,342 tones of plastic waste every day, of which about 60% is recycled, most of it in the informal sector. While the recycling rate in India is considerably higher than the global average of 14%, there are still over 6,100 tones of plastic which are either landfilled or end up polluting streams or groundwater resources.

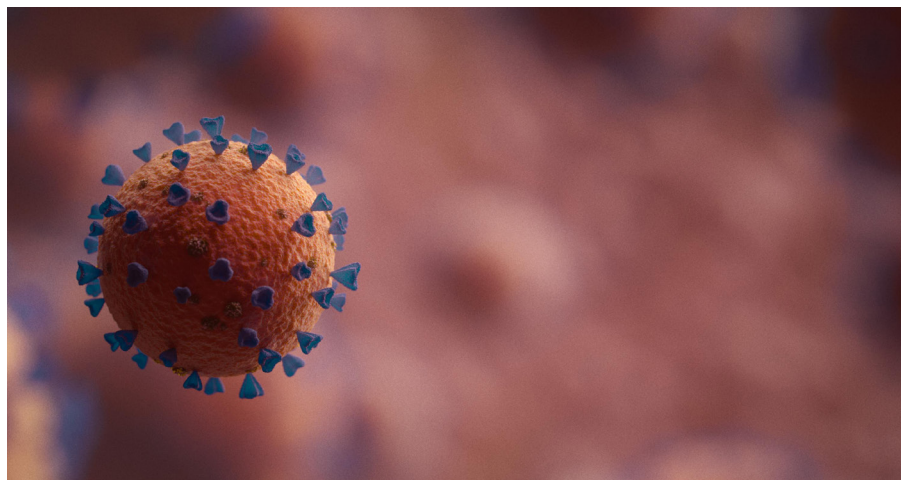
To find a solution to marine litter/microplastics, there is a need to firstly quantify it, identify the route/transportation system and also analyze the effects it can have on marine biota. This is essential as hydrophobic surface of the plastic litter promotes chemical interactions and microbial biofilm formation thereby making them dispersal agents of hazardous chemicals and biota (POPs, invasive species, pathogens) and can bioaccumulate endangering the biodiversity. Moreover, alterations in the ecosystem services are caused due to marine litter. Microplastic ingestion has been observed in a range of animals of commercial interest that are consumed by humans as food, including fish, bivalves etc. Microplastic ingestion and their potential to increase the concentration of harmful chemicals in species destined for human consumption, raises concerns also on human health.

To understand the impacts of environmental plastic pollution requires detailed understanding of the system-specific vulnerabilities and resilience, both, for environmental as well as public health. Opportunities for mitigation strategies vary significantly in India, based on social, cultural, gender and political contexts. Hence, understanding of plastic pollution impacts and risks requires an integrative assessment of vulnerabilities, resilience and coping mechanisms and analysis of exposure considering a suitable size spectrum of plastic waste.

COVID-AMR LINKAGES IN THE CONTEXT OF INDIA

Since December 2019, the world has experienced an outbreak of coronavirus disease (COVID-19), caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Viral infections may damage our cells so badly that it becomes easier for certain bacteria to cause secondary infections which can only be treated with a broad range of antibiotics¹. These bacterial co-infections are a significant cause of morbidity and mortality during viral infections and are already being reported as having a significant impact in the context of Covid-19². While COVID-19 has infected more than 3.3 million and killed nearly 235,000 people globally, Antimicrobial Resistance (AMR) is believed to be exacerbating the already fragile situation. AMR is the ability of a microbe to resist the effects of medication that could once successfully treat the microbe. Antibiotic resistance occurs naturally, but the misuse of antibiotics in humans and animals is accelerating the process³. AMR, according to WHO, had already reached epidemic proportions before the outbreak of COVID-19.

It is important to consider that in countries like India where patients have been using high levels of antibiotics may also now face further complications during co-infection by antibiotic-resistant bacteria. While the problem is global, it is nowhere as stark as in India—where poor public health infrastructure, high burden of disease, and inexpensive, unregulated sales of antibiotics, combined with lack of awareness among patients has created ideal conditions for a rapid rise in resistant infections. In addition to the direct impact on AMR as a result of increased antibiotic consumption, the transmission of AMR beyond the medical system should be considered and assessed like untreated wastes from hospitals, pharmaceutical industries,



etc and indiscriminate use of antibiotics as pesticides. This has led to a growing number of bacteria in humans, animals and the environment in general, that are resistant to commonly used antibiotics that have been called 'Superbugs'.

A recent study published in The Lancet found that of 99 COVID-19 patients with secondary infections were identified with five types of bacteria in their systems, one of which—*Acinetobacter baumannii*—was antibiotic-resistant^{4,5}. This particular superbug can cause septic shock, resulting in severe organ damage and, in some cases, death. In the past few years, diseases like pneumonia and typhoid have become difficult to treat, and in 70% of the cases, treatment begins with more expensive, third-generation drugs, which are administered for a longer duration than before. Due to extensive use in humans and the poultry or livestock industry, the window of effectiveness for new anti-bacterial drugs is decreasing. Solving the challenge of antibiotic resistance requires a two-part solution. Firstly, we need to make sure patients are receiving the right antibiotics for their particular infections—but only when appropriate. Otherwise, we give bacteria more chances to mutate and grow immune.

Secondly, we need to develop new, more potent antibiotics. Unfortunately, that does not seem to be happening right now⁶.

The Covid-19 pandemic has had an immense impact on public understanding of infection prevention and control. Throughout the world, people are practicing improved hand-washing techniques and social distancing, and other measures to prevent infection. Improved interventions in healthcare systems have been implemented worldwide that will surely impact the levels of other infectious agents and AMR and should have positive impacts on global health. Momentum on improved public knowledge regarding infection prevention and control should be maintained through education and advertising. The Covid-19 pandemic has highlighted the importance of vaccination and proper sanitation, the need for functional antimicrobials, as well as the necessity for supporting research into the understanding and control of infectious agents.

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INTERVIEW

"I DO THIS PURE, EMOTIONAL-BASED STORYTELLING THROUGH ANIMALS. IF I DO A PROJECT ON ANY ENDANGERED BIRD THERE IS NO BUYER EVEN TODAY. THE ONLY THING PEOPLE ARE FASCINATED ABOUT IS ON TIGERS. SO I STARTED CONSIDERING TIGERS BECAUSE AT THE END OF THE DAY YOU NEED TO SELL, RECOVER YOUR COSTS."

Subbiah Nallamuthu is a leading wildlife filmmaker from India. He has worked with some of the industry's best networks from National Geographic Channel, BBC, Channel 4, Discovery, Animal Planet, ZDF, and Doordarshan. His oeuvre includes firsts of many: the travel show 'Off the Beaten Track', automobile show 'Wheels and reality show 'Hospital' for BBC, 'Soul Searching' & 'Body Shock Specials' for Channel 4, 'Life Force II' -India Section for Discovery, a hindi feature film titled 'Dharm' in full HD for theatrical release, and he was one of the first to use 4K resolution for wildlife filming in India. Since 1987, he has made a range of films including 11 series and 55 documentaries, mostly centred on Indian wildlife. His passion for the Royal Bengal Tiger has translated into five tiger-centric international documentaries for National Geographic Channel and BBC which he has produced, filmed and directed. His ability to add a theatrical touch to factual story-telling and his technical skills combined with a poetic visual style have won him several awards including four prestigious Indian National Film Awards for Best Cinematography and Best Environment Films. Through his films, Nallamuthu hopes to bring to life every second of the raging struggle for survival that persists in the unpredictable wild and gives conservation a fresh perspective. In a candid chat with Toxics Link's Ipsita Baishya he talks about his filmmaking journey, experiences and more.



Q: HOW DID YOU GET INTO WILDLIFE FILMMAKING?

I am a cinematographer who studied professionally from the MGR Government Film and Television Training Institute, Chennai (FTIT). I was working with Indian Space Research Organization which was next door. The idea of me joining was to understand the technology, which is helping me now. I am talking about the nineties. After that I moved to Ahmedabad and from there to Delhi. I managed to get some projects in Delhi and there was one show called 'Living on the Edge' which is the first environment series in the country. There I started travelling all over India and started working for the camera and the environment, tried to tell a story for the common audience. I thought that let's not get into this preaching mode but the storytelling mode. Finally it started from one place to another place and there was always a link of environment and wildlife. I thought why don't we do something on our own and that's the reason I stopped working for others. I do this pure, emotional-based storytelling through animals. If I do a project on any endangered bird there is no buyer even today. The only thing people are fascinated about is on tigers. So I started considering tigers because at the end of the day you need to sell, recover your costs. I started focusing on tigers and

whenever I invest money, I do films on tigers. However if and when there is funding I also do projects on other creatures like projects for Discovery. But we are on our own, we independently produce without taking money from anyone. I start working randomly till we get a story, plot, spend money. But there is no guarantee and it's like gambling.

Q: RECOUNT YOUR FAVORITE EXPERIENCE FILMING A WILD ANIMAL?

There is no such incident to dramatise and say that this happened and that happened. For 200 days you are following a family, from morning to evening but we don't disturb them and the animals also avoid conflict. We need to save and protect the number of tigers which we have. There is no space for these tigers. If we double their numbers, I don't think we can give them space and conflicts are going to increase. I don't think we can afford more tigers. I am not a scientist but as a layman I am seeing it day in and day out. We are trying to double the numbers not only for tigers but for lions, leopards etc. It is not the right thing unless you create a corridor, a habitat for them.

Also as filmmakers we are not allowed to get off from the vehicle. Since ten years I am filming from the jeep only. We are not allowed to shoot in non-tourism zones also.

Q: WHAT IS THE FUTURE OF WILDLIFE FILMMAKING?

Youngsters always ask me what is the future of wildlife filmmaking. I would say that the future is not at all rosy. I am still struggling. Filmmaking, wildlife, award, tiger sounds good to hear but things are never easy. That's one reason I don't get into conflict and feel it's better to get into storytelling, a feel good film. I am at least happy that a percentage of people will relate to emotion. There is no platform even if I produce my film, where will I telecast. NGOs, filmmakers etc are there to create awareness for the environment but where is a platform. It is very important to talk about environment and nature but as a filmmaker if I want to commercially shoot a film in any national park the minimum filming expenditure is Rs 15000 a day. If I spend 100 days to create a quality project (I am not talking about expenditure-camera, cameraman, vehicle, food etc) I am just talking about the official filming fee, that too morning 3 hours and evening 3 hours (if you want to spend the whole day it is 40,000 Rupees a day). So how do you expect a filmmaker, environmentalist or conservationist to make a good quality film? If you do 2 days of filming and 10 interviews who is interested to watch talking heads films because they can't afford to spend that

INTERVIEW

much money. I did lots of talking heads films for environment in 1991 and 1992 and most of the time they talked about problems and some even give the solution. But where is it reaching, no one bothers. I am not criticising but this is the situation. You have just about 10 wildlife filmmakers amongst our 130 crore population. It's not easy and there is no platform. A cookery channel in my state Tamil Nadu which has recently started has got 1 lakh viewers. I also wanted to do something on Youtube-I tried to put 10 of my most outstanding clips and everyday some 50 people watched it and we had just about a 2000-3000 viewership. Why to spend so much time, I might as well do some commercial storytelling, at least some audience will be there.

Q: PLEASE TELL US ABOUT YOUR UPCOMING PROJECTS?

I am working on a film about a particular character called Maya in Tadoba, Maharashtra but because of corona I had to stop in between. Now I have to try and find a way to salvage it.

HOW BIO-MEDICAL WASTE CAN BE A DEADLY SUPER-SPREADER!

By Vinod Sharma

Through the eyes of our researchers and field workers, Toxics Link's 'Voice from the Field' presents on-the-ground perspectives and first-hand insights of our work for environmental justice and freedom from toxics.

Biomedical waste can increase the risk of covid-19 infection in its own way affecting the waste collectors and rag pickers who, in turn, can end up infecting their near and dear ones. This would negate all the efforts by health workers and the administration to curb the spread of the virus. What is the need of the hour is not just a standard operating procedure or guidelines for getting rid of such waste but also strict monitoring to ensure that it is complied with. In the wake of the pandemic it has been observed that used face masks, face shields and other kinds of hazardous biomedical waste being discarded into the garbage dump get mixed with the municipal solid waste thereby exposing trash collectors to the risk of contracting the novel coronavirus infection. The national capital Delhi is one such city where this is happening. In most cases the biomedical waste is seen to be

dumped at night or early morning by a quarantine facility or a hospital.

During a recent survey on plastic pollution by Toxics Link it was found that dumping appeared to be a large-scale violation that could not be stemming from just one medical facility. A closer look at the quantity made it imminent that it was not just coming from one hospital or a quarantine facility but from several. Either this was being done illegally or the rules about disposal of biomedical waste were being blatantly flouted. This is a serious health risk to the sanitation workers and waste pickers that could increase the chances of community transmission of covid-19 manifold.

Shocking revelations have been made by people living adjacent to the dumping sites who have reported of having spotted truckloads of hazardous waste being dumped at the dhalao. Also garbage collectors are chary about handling the trash in the dhalao as in most cases biomedical waste packed in cardboard boxes is being dumped alongside the municipal waste at the dhalao.

RETHINKING TOURISM IN GOA

The state of Goa, along the western coast of India is indeed a paradise on earth. Flanked along its length by the Arabian Sea on one end and the western ghats on the other, with about 8 rivers meandering from the hills towards the coast, it's a site to cherish.

It is hardly surprising that these scenic settings, the charming country side, a laid back lifestyle and tolerant culture is an allure to lakhs of tourists annually. While this may have its benefits in terms of contributing to the state's exchequer and providing employment opportunities to locals, if mismanaged, it could have disastrous consequences to the quality of life and the local environment.



Unfortunately that is exactly the way Goa seems to be headed. It's a rush towards low-quality, pack them in resorts kind of tourism at great environmental cost. Concretization along beaches, the boom in construction to cope with rising numbers, jammed roads, garbage strewn beaches and increased social conflicts are costing Goa big time.

Tourists arriving by jeeps or coach-loads, staying in budget hotels or in their own vehicles, cooking their own food if they can, generating huge amounts of garbage and leaving is not uncommon either.

There is, therefore, a glaring need to modify the state's tourism policy to encourage high quality, low quantity tourists as well as provide the existing captive tourists other opportunities of exploration in the state. While MICE tourism, hospital tourism, religious tourism etc. are all picking up, eco tourism has tremendous potential to lend sustainability to the current model of tourism.

One such project aptly named 'Aangan' at the picture-postcard pretty village of Verlem, in South Goa, perched on the hill slopes of the Western Ghats aims at integrating natural beauty and the daily life of rural communities and promote productive sustainable practices within its tourism offerings while ensuring the benefits are distributed evenly through the 'Verlem Eco-tourism Co-operative Society'.

Each house wanting to be part of the project was asked to provide a western style toilet for guests along with a single room with a simple double bed and mosquito net. Meals are freshly cooked food which is also consumed by the host family. Locals having knowledge in areas of local medicine, agriculture, biodiversity, cattle rearing, folk songs etc. were enrolled and trained as guides. In order to prevent commercialization and maintain local culture, one house is not allowed to host more than 4-5 individuals at a time and has a gap of 6 days before another guest is entertained.

On arrival at Aangan, the reception provides the tourists with a gist of activities which may be undertaken during the stay. One activity involved a trek to the Pokkuna waterfall which is the closest of 5 waterfalls to the village at an approximate distance of 2-3 km. Led by a local guide, well versed with biodiversity and local medicine,



trekkers are enlightened about the beauty and interrelationships of various living creatures and the role they play in the lives and livelihood of local communities.

Another trek is to Sunset Point, which provided a panoramic view of the forest-clad valley and the Selaulim dam. Various folk stories and community initiatives are explained along the way. One can only imagine the extent of damage, destruction that these gems could cause.

The evening's entertainment is folk songs and dances such as Dhalo, Khel, Goph etc. generally performed during Shigmo and other festivals, celebrating Nature and tradition. The beats of Tabla, Tal and sounds of sticks not only give you an insight into folk culture but transport you into a trance, forgetting all the problems and worries you arrived with.

Early risers are taken to milk cows at a nearby shed followed by a walk around the village post breakfast to witness the distillation of the famous Feni, by the local methods. The village is dotted with kitchen gardens cultivating local

organic vegetables and it is also famous as the only village in the state of Goa for cultivating strawberries. Branded as the Goan strawberry, it is cultivated from October – April. This hands-on experience of working along with the community enables city dwellers to get an insight of the struggles of rural people and feel at one with Nature.

Also part of the tour is a visit to the many temples in the village with Ravalnath being the main deity. There are temples of Chandreshwar- Bhootnath, Mahishasurmardini, Kalika, Shantadurga within a radius of 500m. There is also the Paik Dev temple who is supposedly the protecting deity of the village. All of these carry stories with them enabling better insights into the lives and traditions of the ancestors.

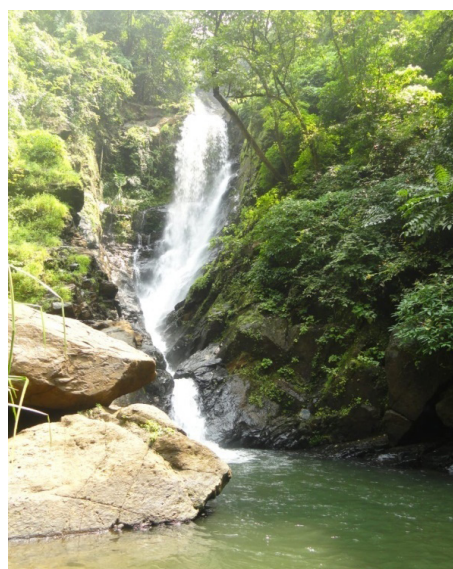
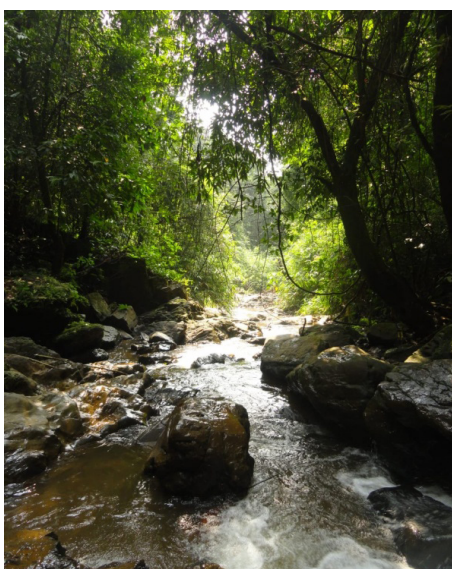
Within a trek of 2 – 2.5 km lies the Sacred Grove of the village, the Paika Pann or the Bhui-jun. This interlinkage of religion and environment is certainly food for thought.

Finally, there is a community owned shop or 'posro' where visitors are encouraged to buy local organic produce or handicrafts of locals thereby improving their incomes and leading to better standards of life.

Aangan is a perfect example of how tourism can integrate economic development, environmental conservation and social upliftment which could go a long way in conserving and preserving Goa's fast dwindling, yet precious resources.

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CHOKING THE WATER BODIES TO DEATH!

By Prashant Paul, Student at FLAME University, Pune



The far-reaching issue of water contamination is risking our well-being. Risky water murders a greater number of individuals every year than war. In the meantime, our drinkable water sources are limited: Less than 1 percent of the world's freshwater is really open to us. Without adequate steps to preserve our scant water resources, the difficulties will just compound by 2050, when worldwide interest for freshwater is relied upon to be 33% more noteworthy than it currently is.

So as to flourish, sound biological systems depend on a mind-boggling web of creatures, plants, microscopic organisms and parasites—all of which cooperate, legitimately or in a roundabout way with one another. Damage to any of these creatures can make a chain impact, risking whole amphibian situations. At the point when water contamination

causes an algal bloom in a lake or marine condition, the multiplication of recently presented supplements animates plant and green growth development, which thereby decreases oxygen levels in the water. This lack of oxygen, known as eutrophication, chokes out plants and creatures and can make "no man's lands," where waters are basically without life. In specific cases, these destructive algal blooms can likewise deliver neurotoxins that influence untamed life, from the mighty whales to the tiny ocean turtles.

Synthetic compounds and substantial metals from modern and civil waste water defile conduits also. These contaminants are harmful to oceanic life—regularly diminishing a life form's life expectancy and capacity to replicate—and advance up the natural way of life as predator eats prey. That is the means by which fish and other aquatic creatures aggregate high amounts of poisons, for example, mercury. Marine biological systems are likewise undermined by marine garbage,

which can choke our starving creatures living underneath. A lot of this strong flotsam and jetsam, for example, plastic packs and soft drink jars, get cleared into sewers and tempest channels and in the long run out to the ocean, transforming our seas into a waste soup and in some cases uniting to shape coasting trash patches. Disposed of fishing gear and different sorts of debris are answerable for hurting in excess of 200 different species of marine life.

The main path conceivable to stop this tainting is to shape a network alongside the assistance and backing from our respective governments that can contribute similarly to preserve our water bodies and the existence it awards to the living animals inside. As aptly said by a prestigious British poet Sir W.H. Auden—"Thousands have lived without adoration, however not one without water."

So it is our sole obligation to secure what Nature has favoured us with, or else the outcomes will be catastrophic.

PUBLICATIONS

FAILED OR IGNORED? THE DISASTROUS CASE OF BIO-MEDICAL WASTE MANAGEMENT IN JHARKHAND



Bio-medical waste is defined in the BMW Rules, 2016 as, 'any waste, which is generated during the diagnosis, treatment or immunisation of human beings

or animals or research activities pertaining thereto or in the production or testing of biological or in health camps, including the categories mentioned in Schedule I of the rules.' To assess the status of bio-medical waste management in Jharkhand, Toxics Link released a report titled 'Failed or Ignored?' The study covered five major districts of Jharkhand which includes Ranchi, Jamshedpur, Dhanbad, Deoghar and Bokaro.

SINGLE-USE PLASTIC

The last straw - A watershed moment in the anthropogenic era



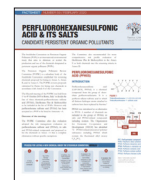
Single Use Plastic (SUP), often referred to as disposable plastic, is manufactured with the aim of using only once before disposing or recycling. With shorter

product life SUP has been identified globally as one of the key contributors to marine pollution and is amongst the most found items in global beach clean-ups. The report captures current practices, impacts, alternatives and regulations of SUPs. It attempts to understand consumer behaviour and perception on single-use plastic and identify the barriers in reducing single use plastic waste in India. The study also looks closely at the informal recycling of SUPs in Delhi, India's biggest plastic waste market and tries to identify the non-recyclable SUPs and the economics of plastic recycling. Based

on the findings, the study recommends a list of SUPs which should be on the priority for phase down or phase out. It also documents some of the best practices nationally and internationally.

PERFLUOROHXANESULFONIC ACID & ITS SALTS - FACTSHEET

Candidate Persistent Organic Pollutants



The fifteenth meeting of the POPRC was held from 1st to 4th October 2019 in Rome, Italy to decide the fate of three chemicals—perfluorohexane sulfonic acid (PFHxS),

Dechlorane Plus & Methoxychlor to be included in the list of POPs. However only perfluorohexane sulfonic acid (PFHxS) has been accepted as a POP to be listed in Annexure -A that is complete elimination without specific exemptions. There are few research studies on presence of PFHxS in the environment and human health but they

are not representative of the detailed situation and impact of PFHxS and its salts in India. In India, there is no regulation or restriction on the use of PFHxS and its salts.

HOW SAFE IS YOUR PAINT? COMPLIANCE OF LEAD IN PAINT REGULATIONS IN INDIA

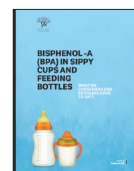


The study titled 'How safe is your paint?' raises concern on the availability of Lead containing paints across India and lack of compliance to the existing regulations in most cases. It is a well-known fact that no safe level of exposure to Lead has so far been identified. When Lead accumulates

in the body it can damage almost all organ systems and young children and pregnant women are at highest risk. It is mostly ingested by toddlers by the commonplace practice of licking doors and windows or eating dried paints. Lead (Pb) is a cumulative toxicant that poses serious risks to the environment besides human health and lead exposure has been identified by The World Health Organization as one of the top ten environmental health threats globally.

BISPHENOL -A (BPA) IN SIPPY CUPS AND FEEDING BOTTLES WHAT DO CONSUMERS AND RETAILERS HAVE TO SAY?

The survey is the first-of-its-kind after there was a proposed amendment to



the existing IMS Act in 2017 based on Toxics Link's report. The proposed amendment has broadened the purview of the feeding bottles and related

products meant for the children. However the proposed regulation is yet to be enforced. In this context the survey has reiterated that there is a large scale confusion prevalent among the consumers to differentiate between the use of baby feeding bottles and sippy cups which is jeopardizing the health of the children. The survey also inferred that most of the consumers are of the view that the sippy cups and other related products need to be regulated considering children's health.

1) CORONAVIRUS NOW POSES THREAT TO ENVIRONMENT

Hans News Service, 20 Aug 2020

Hyderabad: Despite a ban on manufacture of plastic bags of less than 50 microns in thickness and single-use plastic items such as spoons, plates and other items, the regulations are followed more in breach than in adherence. Covid-related plastic waste items are piling up across the city during and after lockdown.

Read more at: <https://www.thehansindia.com/telangana/coronavirus-now-poses-threat-to-environment-640578>

2) MANY HUMAN ORGANS ARE VULNERABLE TO MICROPLASTICS IN THE ENVIRONMENT, NEW STUDY DEMONSTRATES

Firspost, 19 Aug 2020

Microplastics have been found into every nook of the environment – the oceans, land, air, food supply and even in some marine animals. A study from 2018 found that plastics can pass through the human gut, but a new study from Arizona State University researchers indicates that human tissue and organs are capable of absorbing microplastics and nanoplastics too.

Read more at: <https://www.firspost.com/tech/science/many-human-organs-are-vulnerable-to-microplastics-in-the-environment-new-study-demonstrates-8726731.html>

3) ANOTHER TWO YEARS LOST TO CLIMATE INACTION, SAYS GRETA THUNBERG

The Guardian, 19 Aug 2020

Two years on from Greta Thunberg's first solo school strike for the climate, she says the world has wasted the time by failing to take the necessary action on the crisis.

Thunberg's strike inspired a global movement, and on Thursday she and other leading school strikers will meet Angela Merkel, the chancellor of Germany, which holds the rotating presidency of the European council. They will demand a halt to all fossil fuel investments and subsidies and the establishment of annual, binding carbon budgets based on the best science.

Read more at: <https://www.theguardian.com/environment/2020/aug/19/another-two-years-lost-to-climate-inaction-says-greta-thunberg>

4) EIA DRAFT 2020: WHAT NEXT FOR THE CONTROVERSIAL ENVIRONMENT LAW?

Livemint, 12 Aug 2020

The window for public feedback on the contentious draft Environment Impact Assessment (EIA) notification closed yesterday, 11 August. According to a report in the Hindustan Times the Ministry of Environment, Forest and Climate Change (MoEFCC) said it has received an estimated 17 lakh comments from the public on the EIA. "We are still compiling the submissions. We have been overwhelmed with the number of comments," a senior ministry official told the paper on 10 August.

This would make it quite a watershed moment in terms of public participation in environmental lawmaking. For conservationist and former Indian Forest Service (IFS) officer, Manoj Misra, this makes for a big difference since 2006, when the current EIA regime had been put in place, modifying India's first EIA notification in 1994. "This is the wonder of social media. In 2006 jangal me mor nacha kisne dekha?" he says, laughing. In a pre-social media world, says Misra, such modifications in environmental law had little chance of entering the public consciousness. "Now because of social media and its reach, this is what has happened. It is not that all of a sudden the nation has become very smart or sensitive to these issues. It is the media."

Read more at: <https://www.livemint.com/mint-lounge/features/eia-draft-2020-what-next-for-the-controversial-environment-impact-assessment-11597153144539.html>

5) SINGAPORE-BASED NGO TO INVEST UP TO \$100M ON ENVIRONMENTAL PROJECTS IN INDIA

PTI, 31 July 2020

Singapore: Alliance to End Plastic Waste, a Singapore-based-NGO working in the environmental sector, plans to invest between \$70 million to \$100 million in India over the next five years to majorly to reduce plastic waste, according to the top official of the organisation.

Read more at: <https://www.deccanherald.com/national/singapore-based-ngo-to-invest-up-to-100m-on-environmental-projects-in-india-867982.html>

6) INDIA'S ENVIRONMENT MINISTRY WANTS TO REDUCE HUMAN-ELEPHANT CONFLICT BY ERECTING WALLS AND FENCES

Scroll.in, 18 Aug, 2020

Two days before the World Elephant Day, Environment Minister Prakash Javadekar released a document outlining best practices of human-elephant conflict management in India but the booklet has come under heavy criticism from conservationists and wildlife experts. They highlighted that the document lists out the use of concrete and iron fences among the best practices to stop the movement of elephants, even as there are examples of these measures proving fatal for India's national heritage animal.

Read more at: <https://scroll.in/article/970502/indias-environment-ministry-wants-to-reduce-human-elephant-conflict-by-erecting-walls-and-fences>

7) PLASTIC WASTE FROM POST AMPHAN RELIEF MATERIAL COULD ADD TO POLLUTION IN SUNDARBANS

Mongabay, 6 August 2020

Plastic waste associated with relief material, used in the aftermath of Cyclone Amphan in the Sundarbans, could cause damage to the eco-sensitive region, say environmentalists.

In June, following the Cyclone Amphan, one of the worst cyclones to hit the east coast, the West Bengal state government along with non-profits and volunteers were busy with relief activities in the Sundarbans region. Thousands of tons of dry ration kits loaded in four-wheelers and boats were supplied in the worst hit areas of Sundarbans along with community kitchen set-up to offer meals to the locals, many of whom had lost everything.

Read more at: <https://india.mongabay.com/2020/08/plastic-waste-from-post-amphan-relief-material-could-add-to-pollution-in-sundarbans/>

8) 'COMPOSTABLE' NOT 'RECYCLABLE' IS THE ONLY WAY OUT

Down To Earth, 10 August 2020

The novel coronavirus disease (COVID-19) has brought us to an altogether new way of life and for that, we need to think deeply

on how do we plan to move forward.

Are we to keep practicing the same old ways or do we change our way of doing things, to improve our planet and our situation?

The situation needs to be altered. COVID-19 has further accentuated this fact. We need to be much more aware about our plastic consumption and its disposal.

Most masks are plastic, all protective gear is plastic, sanitisers and disinfectants are in plastic, food packaging is plastic and even the dead bodies are disposed in plastic! We need to question this else we will end up damaging an already fragile ecosystem even more.

Read more at: <https://www.downtoearth.org.in/blog/waste/-compostable-not-recyclable-is-the-only-way-out-72750>

9) ALLIANCE AND GIZ LAUNCH PARTNERSHIP TO REDUCE PLASTIC WASTE IN GANGES

Outlookindia, 28 July 2020

Mumbai, India – Business Wire India
Coinciding with Nature Conservation Day, the Alliance to End Plastic Waste (the Alliance) and Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), launch the Aviral – Reducing Plastic Waste in the Ganga pilot project. This initiative aims to reduce the amount of plastic waste entering the environment in the northern Indian cities of Haridwar and Rishikesh. In recent years, the amount of plastic waste has drastically increased in India. More specifically, this increase is affecting the two cities of Haridwar and Rishikesh. Renowned as important Hindu pilgrimage and cultural tourism destinations, in past years the boom in visitor numbers is increasingly leading to unmanageable amounts of plastic waste. Aviral seeks to pilot an approach to address waste management challenges. In particular it will focus on strengthening an integrated plastic waste management system. Following the two-year pilot in the two cities, the partnership aims to scale this initiative across partnering cities in India. “We want a world where every community can have universal access to an environment where their plastic waste is managed. This partnership marries the ambition of both the Alliance and GIZ where we reduce plastic waste and help improve the livelihoods of communities dependent on the Ganges, India's lifeline and one of the world's most important rivers,” said Jacob Duer, President and CEO

of the Alliance to End Plastic Waste.

Read more at: <https://www.outlookindia.com/newsscroll/alliance-and-giz-launch-partnership-to-reduce-plastic-waste-in-ganges/1904373>

10) TODAY'S PPE KITS COULD BE TOMORROW'S ROADS, FUEL – CSIR'S PLAN TO TACKLE COVID PLASTIC SURGE

The Print, 10 August, 2020

New Delhi: Scientists from at least four Indian institutions are coming together to recycle the deluge of single-use plastics thrown up by the Covid-19 pandemic and keep them from polluting our environment. The National Chemical Laboratory (NCL) Pune, Indian Institute of Petroleum (IIP) Dehradun, Central Mechanical Engineering Research Institute (CMERI) Durgapur, and Indian Institute of Toxicology Research (IITR) Lucknow – all affiliated with the government's Council of Scientific & Industrial Research (CSIR) – are pooling their expertise to convert discarded personal protective equipment (PPE), and other plastic waste of the pandemic into fuel or pellets that can be moulded into automobile parts or used for road construction.

Read more at: <https://theprint.in/health/todays-ppe-kits-could-be-tomorrows-roads-fuel-csirs-plan-to-tackle-covid-plastic-surge/478760/>

11) MOST E-WASTE RECYCLE UNITS VIOLATING RULES: CPCB

The New Indian Express, 18 Aug 2020

New Delhi: The Central Pollution Control Board (CPCB) has found that the majority of registered e-waste dismantling and recycling units in the country were found violating waste disposal rules.

Computers, servers, monitors, printers, scanners, cellular phones, TVs, iPods, medical apparatus, washing machines, refrigerators and air conditioners are examples of e-waste when unfit for use. Electronic waste disposal is becoming a major problem globally and India is the world third largest e-waste generator but recycles less than 2 per cent of it.

Read more at: <https://www.newindianexpress.com/nation/2020/aug/18/most-e-waste-recycle-units-violating-rules-2184879.html>

TRAVELLING 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.



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STAY CONNECTED

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



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