

## Deniyaya Projects

*By Ajith Tennakoon, Sevalanka Foundation*

Sevalanka Foundation's work in Deniyaya started in 2002. It all began with the willingness to conserve the surrounding environment. Due to many tea plantations and the use of fertilizer, the soil and friendly creatures began to be harmed. This resulted in the yield of the tea plantations to decrease. Furthermore, deforestation occurred to leave place for tea plantations. Therefore, Sevalanka Foundation needed to convince the community to shift their practices to environmental friendly ones, and thus was introduced organic tea cultivations. After the booming of tea plantations, certain livelihood activities decreased, such as the collection of palm tree sap to make syrup that is not harmful to diabetes. Sevalanka Foundation is trying to promote and rebuild

these livelihood activities, as well as working with schools on bio-monitoring programs. These programs entail children going and studying the forest system and the neighboring tea plantations, analyzing and testing the soil and the water, comparing the results, and making diagrams which create awareness of the damage that excess fertilizer does.

In 2010, there were only 25 farmers in the program. Each farmer converted a quarter acre of their land to organic tea. They only converted a quarter acre at the time, because if one converts the entire field at once, the yield will go down drastically. It will take time for the yield to increase again, which will affect the farmer. Farmers were also given a cow to make their own organic compost, and milk it for additional income. However, some have found it difficult to take care of the cow and have given it back. If they do not make their own organic com-

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**Tea plantations**

*Toxics Link in India is the IPEN Regional Hub for South Asia. [toxicslink.org](http://toxicslink.org) / [piyush@toxicslink.org](mailto:piyush@toxicslink.org)*

*In this region, IPEN has a total of 72 Participating Organizations in the following countries: Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka.*

post, they have to buy it from the same group of farmer, as they know for sure what ingredients went into it, and can therefore certify that it is organic. The 25 farmers practicing organic farming have seen economic benefits and a more fertile soil, which means a sustainable production of tea. Even during the drought season, the organic tea plantations produce the same quantity of tea. Due to the program's success, another 25 farmers have joined the project. There are now a total of 60 farmers, and Sevalanka Foundation is targeting a total of 100 farmers by the end of 2014. PARCIC facilitates the process in the tea factories, the marketing of the product and they send the final goods to Japan as a fair trade item. The Japanese organization in collaboration with Sevalanka Foundation visit the farmers weekly for quality check, and to make sure the tea is not filled with water, either due to heavy rain or farmers wanting to earn extra income.

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**Organic compost**

## Zero Waste Village

*By Environment and Social Development Organization- ESDO*

Bangladesh is a village based country with agro economy. It should be noted that with a small landscape

and large population caused immense waste generation in every day. In the village large proportion of organic and inorganic waste doesn't create much attention to proper management. As result organic waste also is the threat to human health and environment. As an environmental organization ESDO has long experience on nature conservation and community development. So by achieving the organizational goal towards "Toxic Free Bangladesh" has been focused on "Zero Waste Village".

ESDO has initiated the Zero waste village project since some years and from 2011, we went through several FGDs and Open Discussion with people that how ESDO can start working for making Zero waste village at a community level. After a brief research, finally ESDO started its work on managing solid wastes to make those wastes as a resource and build a "Zero waste Village". ESDO has chosen a village named Mohalan in Rajshahi District to make it a model village for all. Besides that, ESDO hosted a three days organic tour with GAIA from 13th June to 15th June, 2013 in Dhaka. Total 11 participants from different countries were present in the program along with the members of ESDO team. Our vision is to build a model of organic and environmentally safe and sustainable village that will be called "Zero Waste Village".

The zero waste village projects have four major components, which are:

- Promoting total waste collection & management
- Composting
- Collecting & selling recyclable materials
- Up-cycling materials for new uses & sale



**Zero Waste Village Campaign**



**Organic composting**

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## Blood Lead Level Testing Program in Nepal

*By Dhiraj Pokhrel, LEADERS Nepal*

Society for Legal and Environmental Analysis and Development Research (LEADERS Nepal) is an NGO working in the field of legal and environmental issues since 1987. With the support from QSP/ UNEP, LEADERS Nepal is currently working on lead in paint issue. The major task of this project is to support the Ministry of Environment, Government of Nepal to formulate standard in lead in paint to support its commitment on GALEP (Global Alliance for Eliminating of Lead in Paint). Lead is a chemical found in many products. However, it can harm children's

learning, growth, and hearing abilities. As a part of this project, LEADERS Nepal in partnership with Siddhi Memorial Hospital, Bhatpur and OK International had conducted a research on relationship between blood lead levels (BLLs) and environmental exposures to lead among urban children in Bhatpur municipality. About 118 children, living in traditional (none painted) and modern houses (painted) were recruited under this study. We believe, this study will help understand how bad the problems are and what needs to be done to protect children from lead poisoning. This research also aims to test the children's hemoglobin level in their blood to better understand its associations with their BLLs. The USA (Boston) based Lead Care company had provided a LeadCare machine on loan to conduct this research.

Preliminary analysis of this research has shown that only 5.08% of the tested children have BLL level less than 5 µg/dl. About 13.5% have BLLs 5-10 µg/dl, 27.9% have BLLs 10-15 µg/dl, 22.8% have BLLs 15-20 µg/dl, 16.9% have BLLs 20-25 µg/dl and 13.7% of the children have BLLs more than 25µg/dl. Among the children, the highest amount of lead was found to be 46.2µg/dl and the lowest was 4.1µg/dl. The amount of hemoglobin was also measured in the blood. The range of hemoglobin was found between 9 gm/dl and 14.5 gm/dl.

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## Issue of Bisphenol-A in Baby Feeding Bottles in India

*By Toxics Link*

Bisphenol-A (BPA) or 2,4-isopropylidenediphenol is a carbon-based synthetic compound with chemical formula  $(\text{CH}_3)_2\text{C}(\text{C}_6\text{H}_4\text{OH})_2$  belonging to the group of diphenylmethane derivatives and Bisphenols. BPA was first synthesized in 1881 and is primarily used as a monomer for the manufacture of polycarbonates.

At present two kinds of BPA based plastics are available in the market: one is Polycarbonate (PC), and the other one is Epoxy Resins (ER). The polycarbonate is commonly used in baby feeding plastic bottles. However after the health impact of Bisphenol -A came into lime light, many countries across the globe have phased out or restricted its use in baby feeding bottles. The health impacts of BPA has now been an accepted fact and a number of research findings have concluded that BPA has the potential to cause harm to human health; especially the children are most prone to the impact of BPA. BPA has been associated with heart diseases, liver toxicity and metabolic syndrome, further

BPA has the ability to disruptive effects in androgen or estrogen responsive tissues, within the immune system, the thyroid, and the developing nervous system, that is why BPA has been put in the category of EDCs.

Further there are number studies that have linked the presence of BPA with depression, anxiety and abnormal behavior among children. Even low dose of BPA in children are found to be harmful. BPA ex-

posure of children is perhaps also due to higher daily intake of food/ beverages per body volume unit than adults. So, many countries across the globe have phased out and banned the use of BPA in baby feeding bottles.

### BPA in baby feeding bottles in India

Feeding bottles in India are regulated by the Infant Milk Substitutes, Feeding Bottles and Infant Foods (Regulation of Production, Supply and Distribution) Act, 1992 as Amended in 2003 (IMS Act). The act mandates that all the baby feeding bottles to be sold in India will be subjected to the standard IS-14625 specified by the Bureau of Indian Standards (BIS). The IS-14625 was adopted in 1999 and has been revised in 2002 and 2004 considering certain environmental parameters. According to the 2002 amendment of IS-14625, only virgin Polycarbonate is allowed for the baby feeding bottles.

The Bureau of Indian Standards (BIS) has revised the standard for baby feeding bottle in 2013. The draft notification has stated that BPA will not be used in the baby feeding bottles. However the draft has not been notified yet. Toxics Link recently conducted a study on BPA in baby feeding bottles sold in Indian market. Fourteen samples



**Plastic Feeding Bottles in India**

were taken randomly from three cities across the country. The study found that most of the samples contain BPA and the max. BPA concentration was detected as 9.8 PPM in one of the samples. In half of the samples BPA was detected above the EU threshold limit of 0.68 ppm. Ironically BPA was detected in a sample that was mentioned as BPA free.

### **BIS is dragging its feet to phase out BPA from the baby feeding bottles**

It has been accepted by the Bureau of Indian Standards (BIS) that BPA can be harmful to the new born child, while preparing the draft to phase out BPA from the baby feeding bottles. Though the draft notification has been issued in 2013, however the final notification has not been published yet. The position of BIS is quite strange considering the importance of the issue and playing with health of the children. It seems that BIS is protecting BPA industries at the cost of health of the children. Finally BPA has been well accepted as an endocrine disrupting chemical and many countries have taken steps to phase out BPA not only from baby feeding bottles but also from other products. Stringent regulations are in place especially on the presence of BPA in children products. Even the countries are monitoring the daily intake of BPA in food and have notified advisory on TDI limit of BPA. However in India, there is very little headway in this direction. Ironically there is hardly any awareness among the policy makers and other stakeholders on the issue. In fact no research studies are being conducted in India, linking the use of BPA with the health impact. Moreover in cities, various products are now being available that have been labeled as BPA free.

### **BPA was also detected in a bottle that was marked as 0% BPA**

This shows the level of awareness among the consumers, but as there is no monitoring mechanism in place, one cannot guarantee that these products are BPA free. Toxics Link study is an example, how BPA has been detected in the product that has been labeled as 0 % BPA. In this scenario, there is an urgent need of action among the regulators to develop a policy and suggest suitable regulation on BPA use in the products, to minimize impact on human health and environment.

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### **Mercury Amalgam Use in Dentistry**

*By Sustainable Development Policy Institute*

UNEP Global assessment on mercury reports assesses mercury as toxic to humans, wildlife and environment. Higher levels expo-

sure to mercury can damage brain, nerves and kidneys. The developing fetuses, infants and young children are most susceptible to harmful impacts of mercury exposure because their brains and nervous systems are still forming. Mercury use in dentistry can add up to mercury contamination of air, water and soil. Waste is also generated by mercury containing medical equipment/devices such as thermometers, blood pressure gauges, and its use in operative dentistry.

Very few investigations on mercury related issues have been reported in Pakistan. According to preliminary reported data in 2009, the estimated maximum & minimum emission and transfer of mercury in Pakistan is about 36,900 & 10,800 kg/year, respectively. At present, there is no mercury specific legislation in the country. However, development of a mercury management national action plan is in the making.

In 2010, a study in Pakistan, evaluating the amalgam use by dentists in the country and its waste management, indicated that 92% dentists use amalgam often/always, whereas 56% of the study samples



**Dental Hospital in Pakistan**

did not agree that amalgam should be phased out and replaced with non-mercury fillings. 92% dentists of the selected number of samples perceived amalgam a health risk, whereas 46% considered it an environmental hazard. A similar study carried out in Karachi indicated 94% of dentists performed dental amalgam restoration, 57% using hand mixing for dispensing and 55% disposing of mercury waste in the sink.

SDPI had carried out mercury monitoring in air at selected dental sites in five main cities of Pakistan. At each site, sampling points were operative dentistry ward/section, adjacent corridor and open air. Among all the thirty four visited/monitored dental sites in Lahore, Peshawar, Abbottabad, Rawalpindi & Islamabad, eleven (11) sites were most contaminated with mercury level in air many times higher than the recommended limit of 300ng/m. Mercury levels in air of operative dentistry (OPD) at 15 out of 17 dental teaching institutions was found to be higher than the recommended limit, whereas, similar higher mercury levels were observed in 5 out of 7 general hospitals and all the 10 private clinics visited. Highest mercury levels in OPD air at teaching institutions, general hospitals and private clinics were found to be 44, 067,17.

It has been observed that general unawareness regarding appropriate handling of mercury/mercury amalgam, mercury containing wastes, improper and inadequate ventilation system are main cause of health hazards of mercury to human health and its impact on the environment.

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## Workshop on Working Together for Toxic Free Future in Bangladesh

*By Jagrata Juba Shangha (JJS)*

JJS had conducted workshop on toxic free future in Bangladesh on 19th October 2014. More than 30 personnel from Government officials from Agriculture Extension Department, Upazila Fisheries Officer, District Relief & Rehabilitation Officer, Academicians from Khulna University, Journalists, NGO representative and grassroots level farmer and fishermen participated in the workshop. Dr. Masudur Rahman, Assistant Professor, Environmental Science Discipline, Khulna University and ATM Zakir Hossain, Executive Director, JJS facilitated the workshop.



**Workshop for Toxic Free Future**

ATM Zakir Hossain initiated the workshop by giving an overview of the IPEN Global Meeting held in Kunming, China. He informed that about 100 personnel from 30 countries over the globe participated in the meeting. The meeting discussed and shared on different covered issues related to IPEN's global operation including chemical treaty implementation activities, campaigning opportunities, operational updates and others.

Masudur Rahman shared aspects of Toxic Substance and Toxicity,

Major Toxic Substances, Sources of Toxic Substances, Toxic Substances in Natural Waters, toxic substances in Air, sources of poisons in agriculture, genetically modified crops, effect on human health. Presentations were followed by open discussion and all participants actively took part on it. Workshop was ended with the note to take some strict actions on regulation and do more awareness campaigns for masses.

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## Heavy Metals in Children Toys and Campaign for Safe Play in Nepal

*By Center for Public Health and Environmental Development (CEPHED)*

Toys are one of the most favourable things for children to play. Playing with toys is an enjoyable means of training the young ones in society. A variety of colourful toys such as dolls, balls, pencil boxes, toy cars, backpacks etc. are available in the market. Children use toys and play to discover their identity help their bodies grow strong learn cause and effect, explore relationships, and practice skills.

The forms and design of children playing sets have been changed according to time, situation and development of people. The literature shows that the history of children toys begins from ancient Greek and Roman civilization. With the time the materials from which children toys are made have also changed. There are evidences that toys used to be made from clay, fabric, animal bones, stones, wood, etc. With the use of plastic came into action by



**Toys for heavy metal analysis**

1940s, More toys were made with plastic after 1945. Since then plastic toys covered the world market along with few wooden toys, metal toys and Barbie dolls. These days, most of the toys and dolls found in market are colourful along with addition of several life threatened chemicals like lead, cadmium, etc. to give additional features and attraction to children toys and dolls. These chemicals can cause severe health problems on children and even causes to death on long term exposure.

The study is carried out with help from fellowship under UNEP Eco-Peace Leadership Program, Yuhan-Kimberly University of South Korea by Center for Public Health and Environment Development (CEPHED) in Nepal to know the existing scenario of heavy metal presence in children toys and dolls. Also the study is carried out to know about the perception and awareness level, buying behaviour, label inspection habit among children toy's consumer i.e. parents, retailers and school with the help of set of questionnaire. In total 100 toys were purchased from market consisting of composition material plastic (63%), metal (11%), wood (9%), rubber (7%), fabric (4%), clay

(3), foam (2%) paper (1%). Toys were coded and sent for test at Nepal Handicraft Testing Laboratory, A public Private Partnership model laboratory operated by Federation of Handicraft Associations of Nepal (FHAN) and Nepal Bureau of Standard and Metrology, Ministry of Industry, Government of Nepal for heavy metal content with help of X-Ray Fluorescence (XRF).

The result from set of questionnaire shows none of the school, retailer or parents are aware about the chemical presence in children products. Though there was clear information and warning to not to sale product for children below 3 years of age, parents and retailers were shown carelessness on such critical information during toy purchase or sale. Very few (10%) check labelling during sample purchase let aside the chemical presence in children toys. There is not any authorized governmental body working on particular issue. Most of market (63%) is covered by plastic toys while dolls are made up of fabric and cotton. There was very little variety of wooden and magnetic toys available in market. During product purchase, 38% of school opt for plastic toys while 19% and 15% goes for animal re-

lated product and wooden product respectively. During toy purchase, 41% of parents opt for plastic toys while giving preference on attraction (26%), color (16%) and durability (11%) but none of parents inspect about chemical presence which sound surprising.

Majority of product are imported from Chinese market giving some priority (34%) on Indian product as well. Last year only, children product of above NRs. 70 Cr. is imported where Chinese and Indian contribution ranks up as 54% and 36% respectively. Few children products are imported from countries like Sri Lanka, Thailand, Taiwan, Hong Kong, USA etc. Study shows there are not any government procedure/requirement which retailers need to fulfill during import or sale of toys and dolls.

A laboratory result shows that 54% of the samples have one of the toxic heavy metals i.e. lead, mercury, cadmium, chromium and bromine. 40% of samples have bromine content ranges from 3.6 ppm to 3923.00 ppm whereas 28% of samples have lead content ranging from 15.2 ppm to 8305.8 ppm among which 46.42% of samples have lead content higher than US guideline value i.e. 90 ppm. 9% of sample has cadmium contain ranging from 16.2 ppm to 409.5 ppm. 33.33% of sample has cadmium contain higher than US Standard i.e. 75 ppm. 1 4% of sample has chromium contain ranging from 9.6 ppm to 2052.2 ppm among which 42.86% has chromium contain higher than the US Standard of 60 ppm. 64.29% of the samples purchased from retailer shop contain toxic chemical whereas very few 1 6.67% purchased from educational enterprises contain toxic chemical in children play-set. Children play-set composed of foam and

paper have 100% toxic chemical in them whereas clay (66.67%), metal (54.55%) and plastic (50.79%) play-set contain toxic chemical.

The reason behind this uncontrolled and alarming level of toxic chemical presence in children toys is mainly due to lack of standard, guidelines and regulations. So it is recommended that there should be authorized governmental body to monitor and develop the standard. Also since the majority of market is covered by imported products, there must be strong enactment during import period. Finally, it is duties for all of us to keep hazardous chemicals away from children's toys and ensure their right to play safe.

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**Participants preparing bio-pesticides as alternative to chemical pesticides**

## Organic Agriculture

*By Royal Society for the Protection of Nature (RSPN)*

RSPN has carried out a pilot project on sustainable and organic agriculture in Wamrong and Thrimshing in Tashigang District. The one year project which was implemented by RSPN field office in Wamrong benefited at least 40 households in Moshi and Khaimanma villages

under Lumang Gewog in Wamrong, and Passaphu and Madhuwa villages under Kangpara Gewog and was carried out together with National Organic Program, National Soil Service Center, and National Plant Protection Center, Department of Agriculture and Livestock and local stakeholders. It was intended towards fostering environmentally, socially and economically sound food production by promoting alternative option to chemical farming and slope agriculture.

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## Promotion of Organic Pesticides to Counter of Chemical Pesticides

*By Centre for Innovation in Science and Social Action (CISSA)*

Present day Agriculture has become highly polluted and hazardous due to indiscriminate use of pesticides, chemicals and fertilizers. This situation has resulted in severe health problems in people who consume the agricultural produce. CISSA has launched a series of programme during a last couple of years to promote use of organic pesticides. The major programmes undertaken are given below.

### Field trials and popularization of biopesticide developed by CTCRI

To reduce the use of synthetic pesticides, CISSA has joined hands with CTCRI to popularize biopesticides developed by them among farmers in Thiruvananthapuram, Malappuram and Kasargod Districts of Kerala state involving more than 150 farmers.

### Organic Terrace Farming

CISSA has been organizing regular training programs for various residents associations in Thiruvananthapuram on production of biopesticides and other organic inputs at home and on terrace farming. A total of 1800 farmers have been trained.

### Organic Agro Technicians training programme

CISSA started providing organic farming training to Agro Technicians. Around 30 candidates are getting trained but has been deployed in the community with the task of promoting and give technical support for use of organic inputs and pesticides in farming.

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## Phase Out of Lead Paints in South Asia

Lead in paints is an important issue in SAICM and a plan of action has been created to phase-out lead in paints globally. In this context, the initiative to eliminate lead in paint in South Asian countries can be seen as a positive development for the Global South. However, the success of eliminating lead paints in South Asian countries should clearly be attributed to the role that NGOs have played in this direction. Toxics Link kicked up the study of Lead in Paints in India in 2007, followed by the issues that were raised by the Center for Environmental Justice in Sri Lanka, CEPHEd in Nepal and ESDO in Bangladesh. Later, with the support from IPEN's Asian Lead Paint Elimination Project, these NGOs



*Lead Free Campaign in Bangladesh*

have been able to generate a number of research studies and build a sustained campaign with the industries and policymakers to create mass campaigns in their countries. The efforts of these NGOs have had a significant impact with the paints industries, and some have switched to lead-free paints voluntarily. Most importantly, the governments of Sri Lanka and Nepal have adopted mandatory standards for lead content in paints. The Bureau

of Indian Standards, the standard making of Govt of India agency has also notified a voluntary standard of 90 ppm and the policymakers are contemplating a mandatory standard for lead content in paints. In Bangladesh the industries have responded to the call of ESDO and are moving towards lower lead content in paints, and the policymakers are also looking towards a mandatory standard soon in the country.

IPEN's global network is comprised of more than 700 public interest, non-governmental organizations in 118 countries. Working in the international policy arena and in developing countries, with international offices in the US and Sweden, IPEN is coordinated via eight IPEN Regional Hub Offices in Africa, Asia, Central / Eastern Europe, Latin America and the Middle East. IPEN works to establish and implement safe chemicals policies and practices that protect human health and the environment around the world.

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**IPEN**  
a toxics-free future