



CSE' s

Pollution Monitoring Laboratory: Achievements and Challenges



CSE' s Pollution Monitoring Lab

- Set up in 2000, with state of the art equipment for trace organics (pesticide, antibiotics etc.), heavy metals, water and air pollution monitoring.
- We set it up to:
 - **investigate issues of public health concern**
 - **respond to community requests**
- Need independent science for health and ecological security. Need information publicly.
- Concerns our health. Our bodies. Our children.



Endosulfan Residues in samples from Padre Village in Kasaragod district of Kerala



- CSE lab finds endosulfan in human blood, milk, food, water, fish...
- Industry fights back. Hires “accredited” lab. Says no endosulfan found. But NIOH confirms endosulfan.
- Kerala government bans pesticide spraying.
- 2011: **Supreme Court of India issues order banning the use, sale, production and export of endosulfan**
- Industry still fighting.

Analysis of Pesticide Residues in Bottled Water



- Tested bottled water samples from Delhi and Mumbai.
- Found high levels of pesticides...
- But also found poor regulations
- Within 3 months, BIS notified new pesticide norms for bottled water

Analysis of Pesticide Residues in Soft Drinks



- Tested all brands of soft drinks
- Found same pesticides as bottled water and at same level as bottled water.
- But no regulations
- Results much debated; Joint Parliamentary Committee (JPC) formed to investigate
- JPC vindicates our findings; recommends overhaul of food and pesticide regulations
- FSSAI established because of JPC

Analysis of Pesticide Residues in Blood Samples from Villages of Bhatinda and Ropar, Punjab



- Tested blood samples of farmers in Punjab for pesticides; the first study of its kind
- Found a cocktail of 6-13 different pesticides in each sample and in high levels.
- This study gave impetus to more research on pesticides and cancer in Punjab.
- We had also demanded regular biomonitoring of the population to assess chemical exposure – no action on this

Analysis of Pesticide Residues in Soft Drinks



- Despite JPC recommendations, government refused to set standards for soft drinks
- Again tested all brands of soft drinks from across the country
- Found pesticides in higher levels in some samples than 2003 study.
- Finally in August, 2008 Ministry of Health notified standards for soft drinks – the first in the world – but at a level which is 10 times higher than bottled water



Community monitoring of Heavy Metals in Pali, Rajasthan



- Tested and found high levels of heavy metals in groundwater, river water and effluents from textile factories
- **Community water pollution monitoring** programme launched in Bandi river basin in Pali, Rajasthan. Sixty farmers from 20 villages trained to monitor water pollution using simple test kits.
- Community testing has ensured that CETP is operating better

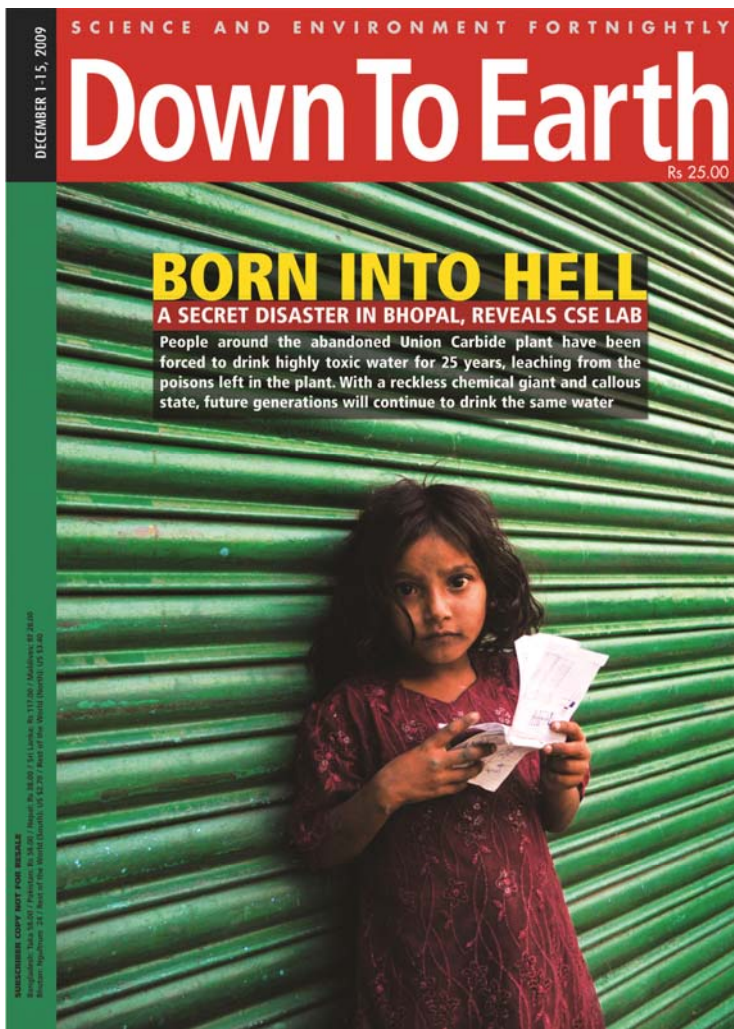
Fatty Acid Profile of Edible Oil



- Conducted study on presence of transfats in leading brands of edible oils. First of a kind study in India.
- Found high levels of transfats in hydrogenated oils, but no regulations.
- Within a month, the Oils and Fats sub-committee of CCFS recommended a ceiling of 10% transfats in hydrogenated oils immediately and bring this level down to 5% in next three years
- Recommendation still not implemented



Environmental contamination in and around the Union Carbide factory



- A joint study of CPCB and CSE to assess the status of pollution in Bhopal 25 years after the disaster
- Tested water and soil from within the factory and outside
- Found soil and water samples contaminated with chlorinated compounds and pesticides
- Profile of chemicals found within the UCIL factory matched the chemicals found in the groundwater sample outside the factory premises
- Established that factory is still a source of contamination

Antibiotics in Honey



- Tested 12 brands of honey, including two popular International brands. Found to contain antibiotics from the banned Chloramphenicol to the broad spectrum Ciprofloxacin and Erythromycin.
- Found that we regulate antibiotics in the honey we export, but not in the honey sold domestically.
- FSSAI issued an advisory stating that no antibiotics and pesticide residues are allowed in honey. The advisory has also specified maximum limits for heavy metals in honey.
- BIS still in the process of revising the Indian Standard Specification for extracted honey.

Environmental Contamination and its Association with Chronic Kidney Disease of Unknown Etiology in North Central Region of Sri Lanka



- North central Sri Lanka has been facing high rates of kidney failure (chronic kidney disease due to unknown etiology) for last two decades; reasons unknown, cases on rise
- Common belief: arsenic and cadmium in drinking water responsible
- CSE requested by Sri Lankan Ministry of Water Supply to test water quality

Our findings

- Water quality poor; soluble solids, calcium, hardness, alkalinity and fluoride levels very high
- But no arsenic and cadmium.
- Recommended supply of treated water and health support.

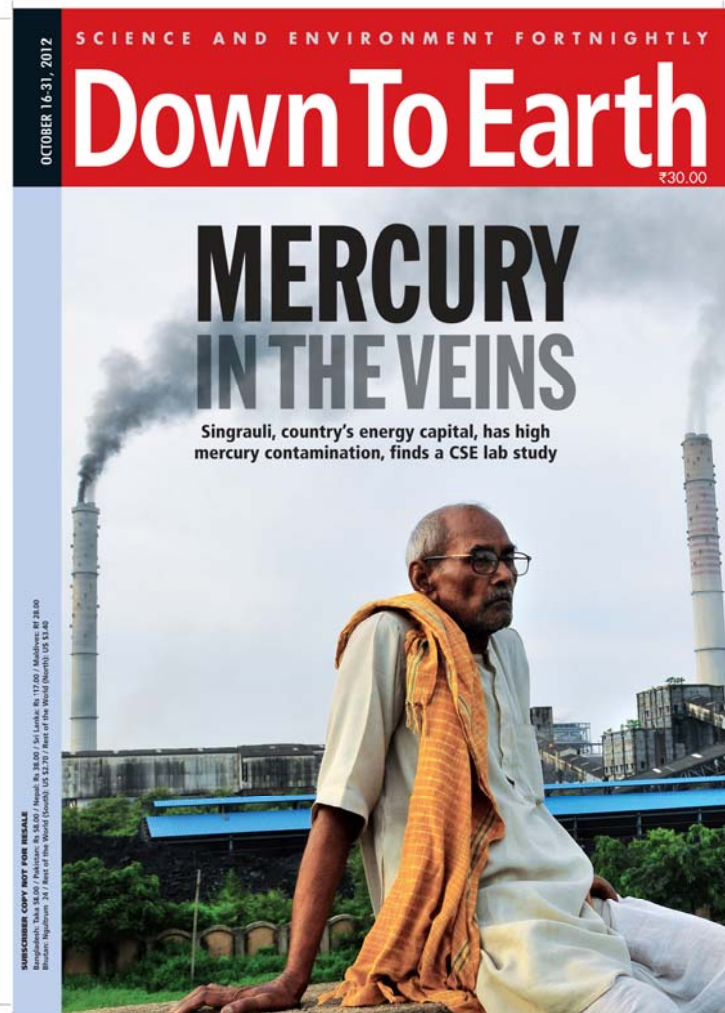
Nutritional Analysis of Junk Food



- Tested 37 samples of most popular branded junk food for total fat, trans fat, salt and total carbohydrate content.
- Found very high levels of salt, sugar, total fats and transfats; also found misleading labeling and advertisement practices
- Double standards being followed by companies in information being provided in India and western countries.
- Found our labeling laws to be inadequate
- No regulation yet to check false claims and aggressive marketing to kids



Mercury pollution in Sonbhadra, UP



- More than 10% of India's coal based power production
- Declared critically polluted area in 2009
- Approached by community to assess pollution and health issues
- Tested blood, hair and nails of people and samples of water, soil, cereals and fish from the district
- Found mercury everywhere and in very high levels
- Have demanded setting of mercury standards for thermal power plants



Challenges

- From supporting communities to doing independent scientific studies, need for independent labs is undeniable.
- In fact, as we grow and become more resource intensive society, we will need more independent science for ecological and health security
- The challenge is how do we:
 - establish more such labs
 - fund them so that they remain credible, independent and accountable



Centre for Science and Environment

Science for ecological and health security