

**DOUBLE STANDARDS:
Unilever's Mercury Fever &
Kodaikanal's Ecological Time Bomb**

**Tamilnadu Alliance Against Mercury
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(TAAM is a coalition of organisations and community groups from Kodaikanal and Chennai committed to ensuring the highest levels of remediation by Hindustan Unilever Ltd of the mercury contamination in Kodaikanal)

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Introduction

Hindustan Unilever Ltd, a majority owned subsidiary of Anglo-dutch multinational Unilever, wants to leave behind a ticking ecological time-bomb atop the Pambar Shola – one of the most biodiverse forest ecosystems in South India. The company's now-closed mercury thermometer factory is a toxic hotspot with elevated, even dangerous, levels of mercury recorded inside and outside the factory site. Between 1984 and 2001 – the period of its functioning – the factory admits to having discharged more than 1.3 tons of toxic mercury into the Pambar Shola. It also admits that the soil inside the premises is contaminated with at least 366 kgs of mercury.¹ The factory was shut down by the Tamilnadu Pollution Control Board (TNPCB) in March 2001 after residents and ex-workers exposed the company's illegal dumping of mercury wastes inside Kodaikanal town and in the forests behind the factory.

Environmentalists and ex-workers have argued that the mercury release data provided by the company are gross underestimates, and that there is a need for an independent assessment by an agency other than the company or its paid consultant. No such independent assessment has been conducted or commissioned by the Tamilnadu Pollution Control Board.

Further, Kodaikanal residents and NGOs have demanded that remediation of the contaminated sites inside and outside the factory needs to adhere to the most stringent standards owing to the special and sensitive location of the factory site. The factory is located adjoining a protected Reserve Forest containing an ecologically unique tropical montane ecosystem. [See box: "Pambar Shola: Biodiversity Hotspot Or Toxic Hotspot"]

The entire premises of the factory falls within the water catchment area of the Pambar Shola. In other words, every drop of water that falls in the factory premises drains into the Pambar Shola, and eventually to the Pambar River and River Vaigai.

A recent paper published by scientists with the Universite Paris observes that "the risk of soil pollution by mercury is a major environmental hazard, especially in tropical areas where soil microflora plays a major part in soil functioning, major bio-geochemical cycles and carbon turn-over."² The Universite Paris study concluded that adverse impacts occurred to soil microbes even at 20 mg/kg.

European Commission guidelines, and the target value recommended by Dutch regulatory agencies indicate that level of mercury in soil would have to be brought to between 0.03 to 0.7 mg/kg to prevent ecosystem damage and retain the integrity of forest soils and ecosystems.³

Since 2002, Unilever has publicly declared that it will clean-up the factory site to the Dutch residential standard of 10 mg/kg. Indeed, as of 5 March, 2010, the company's website declares that "HUL sought permission as early as 28 June 2002 for the clean up or remediation of the land within the premises of the factory to a high, residential standard known as the "Dutch standard" (10 mg/kg)." The Dutch Government would consider mercury contamination upto these levels as acceptable for residential purposes, and levels above 10 mg/kg as requiring remediation or further investigation for risks depending on the specifics and sensitivities of the site in question. Unilever's consultant carefully avoids mentioning that the United Kingdom, which is the country where Unilever's business is

¹ "Environmental Site Assessment and Risk Assessment for Mercury HLL Thermometer Factory Site Kodaikanal, Tamilnadu, India" URS Dames & Moore. For Hindustan Unilever Ltd. May 2002

² Jennifer Harris-Hellala, Tatiana Vallaeybs, Evelyne Garnier-Zarlia and Nouredine Bousserrhine (Januar 2009) "Effects of mercury on soil microbial communities in tropical soils of French Guyana" *Applied Soil Ecology*, 41(1):59-68

³ Curlic J., Sefcik P. and Viechova Z. (eds) 2000. Proceedings from meeting of the ad hoc international expert group on effect-based critical limits for heavy metals. Report from Soil Science and Conservation Research Institute, Bratislava.

registered, has notified a residential soil standard of 1 mg/kg.⁴

A Working Committee, including representatives of Kodaikanal's residents, was constituted by the TNPCB after the factory was shut down in 2001. The minutes of the Working Committee meeting held on 11 October, 2002, notes as a decision that "all soil containing more than 10 mg/kg of mercury is removed." Additionally, the Committee also noted that further remediation may be required upon receipt of relevant documents supporting the claim for more stringent site-specific standards. On 5 September, 2005, the Supreme Court Monitoring Committee's (SCMC) sub-committee also notes the 10 mg/kg figure.

Another committee, the Local Area Environment Committee (LAEC), was set up at the behest of the SCMC in December 2004. Both committees – the LAEC and the Working Committee – have active local residents and representatives of ex-workers who raised relevant questions to ensure that remediation activities truly protect human health and the environment. However, both committees were allowed to idle after September 2005 despite repeated requests by residents' and ex-workers representatives to activate it.

Denial and secrecy

Transparency in TNPCB's proceedings on the Unilever matter ended in September 2005, when a Scientific Experts committee was formed ostensibly to approve the clean-up protocol. All subsequent meetings were behind closed doors. Reports were not shared, and decisions were taken without ever officially dissolving the two other oversight committees.

Indeed, the October 2007 Detailed Project Report titled "Soil Remediation at HUL Factory site, Kodaikanal, Tamil Nadu, India" by Environmental Resource Management Pty Ltd has a stakeholder matrix that does not include the local community, or elected representatives of the local Government. The only stakeholders considered are the TNPCB, Hindustan Unilever and Unilever's consultants, namely ERM and NEERI.

This is in direct violation of the order of the Supreme Court dated October 14, 2003, which cites the Rio Declaration's Principle 10, and the Section 3(2)(12) of the Environment Protection Act, 1986, to underline the importance of collection and dissemination of information in respect of matters relating to environment pollution, and the "right to receive information and community participation with particular emphasis on hazardous materials."⁵

Paid science

Let alone cleaning up to the stringent standards demanded by residents and warranted by the eco-sensitive site, Hindustan Unilever has now obtained permission to dilute the clean-up standards to levels far more relaxed than the Dutch intervention value of 10 mg/kg it proposed in the first place. The appointment by Unilever of National Environmental Engineering Research Institute – a member of the SCMC – as its paid project management consultant to advise and oversee its remediation is a blatant conflict of interest that has predictably worked in Unilever's favour.

In arguing for relaxing the clean-up required to be done by its client, NEERI relies on an assessment of risk posed by leaving behind different levels of mercury in the soil. This assessment too was not done by the TNPCB or an independent agency, but by ERM India, another paid consultant to Unilever.

⁴ "Soil Guideline Values for Inorganic Mercury Contamination" Department for Environment, Food and Rural Affairs. The Environment Agency. March 2002.

⁵ Order of the Supreme Court of India dt/14 October, 2003. Research Foundation for Science Technology and Natural Resource Policy v. Union of India and others. Writ Petition No. 657 of 1995

According to Dr. Mark Chernaik, toxicologist and staff scientist at ELAW-US, “The Site-Specific Target Level of 25 mg/kg was established only with regard to the protection of public and without regard to protection of ecological values.”⁶

The SCMC member and Unilever consultant NEERI trots out a curiously perverse argument: “. . .the entire site of HLL is covered with thick vegetation and population of trees. It may, therefore, be mentioned that, if a clean-up criteria of 10 mg/kg is selected, an additional 3881 MT of soil will have to be excavated and treated, which may disturb the ecology of the site.”

Even worse, rather than worry about the fate of the sensitive shola forests that are being condemned to receiving mercury, NEERI's preoccupation for the welfare of its client is particularly visible. NEERI says: “In addition to the above, techno-commercial aspects are also to be considered while deciding the screening level for remediation. The benefits likely to accrue out of stricter norms are to be compared against the additional cost that may be incurred while undertaking such projects.”

The diluted clean-up criteria was never revealed to either the Local Area Environment Committee or the Working Committee. Both these committees were reconstituted pursuant to SCMC directions of September 2004, and entrusted with the task of overseeing the implementation of remedial action plans approved by the Tamilnadu Pollution Control Board.

In September 2005, the SCMC itself directed TNPCB to appoint a new “Experts Committee” of pliable scientists.

In February 2007, NEERI submitted a protocol for remediation of the mercury contaminated site based on a risk assessment by another Unilever consultant – ERM India Private Ltd. Neither the Experts Committee, nor the TNPCB, thought to question the lack of independent data. All data regarding this subject have been generated only by Unilever's consultants – URS Dames & Moore and ERM. Validation of these data were done by another Unilever consultant, NEERI.

On June 2, 2007, a meeting was convened by TNPCB where the Experts Committee listened to a presentation by Unilever's consultant. NEERI, the consultant, argued for relaxation of the clean-up standards. Hearing NEERI make a presentation on the subject seems to have been sufficient information for the Experts Committee to make up their minds on relaxing the clean-up levels. No further information, such as the Risk Assessment report on which NEERI's report is based, seems to have been shared with the Experts Committee. Indeed, in response to a Right to Information question as to what documents were presented to the Experts Committee during this presentation, the Tamilnadu Pollution Control Board tersely states that such “Information [is] not available.”

Shortly after the Experts Committee's blind consent to Unilever's proposal, Dr. Tapan Chakrabarti – SCMC member and the NEERI scientist heading Unilever's contract study – wrote to the Chairman of TNPCB warning that no mid-term revision of clean-up standards will be allowed. In other words, once approved, the clean-up standard of 25 mg/kg cannot be made more stringent.

In July 2008, the TNPCB accorded permission to Hindustan Unilever to clean up the site to the relaxed standards of 25 mg/kg.

Owing to the secretive manner in which the TNPCB has functioned in this matter, it has taken more

⁶ Dr. Mark Chernaik. “Critical assessment of documents purporting to support a site-specific target level of 25 mg/kg for the remediation of mercury-contaminated soils at the HUL factory site in Kodaikanal.” ELAW-US, Eugene, Oregon. 5 March, 2010. Private memo prepared in response to request by Nityanand Jayaraman, Chennai.

than 1.5 years of investigation using the Right to Information Act, 2005, to unearth relevant documents that lay bare the collusion between TNPCB, NEERI and Hindustan Unilever.

Debunking 'junk' science

Information available in the public domain clearly highlight that the 25mg/kg level will result in ecosystem damage to the Pambar Shola forests.

A United Nations Environment Program report of 2002 titled "Global Mercury Assessment: Overview of Existing and Future National Actions, including Legislation Relevant to Mercury" reports that *"Increased concentrations of metals in forest soils, especially in the mor layer (upper layer containing decaying vegetation), imply risks of adverse effect on vital microbial processes and indirectly, of disturbance of ecosystem functioning. Most of the decomposition of organic matter takes place in the mor layer, including the release of nutrients important for maintaining the productivity of forests. Most plant roots are also found in the mor, which moreover is the most important soil layer for organisms that form the base for food chains ending in mammals and birds. Disturbance of the functioning of the mor may therefore have considerable ecological consequences that may be difficult to prognosticate without a thorough knowledge of the entire system."*

According to Dr. Chernaik, a major flaw of NEERI's analyses to arrive at the diluted clean-up standards is that it does not "contain a thorough assessment of the potential for off-site migration of mercury from contaminated soil into the Pambar River and adjacent wetlands."

In fact, NEERI casually dismisses findings of elevated levels of mercury in surface water run-off collected from the factory site as "anomalous readings." Commenting on this conclusion by NEERI, Dr. Chernaik states: "This reflects a fundamental misunderstanding of the fate of mercury in the aquatic environment. Mercury tightly binds to small particles of silt. The fact that two surface water samples had high levels of mercury following a heavy storm strongly suggests that rainfall is washing mercury (in the form of mercury-bound silt) from contaminated soil into surface water."

By ignoring the sensitivity and proximity of the site to Pambar Shola, and arriving at a remediation standard of 25 mg/kg, Unilever's proposed clean up will leave behind a site that will leach mercury into the soil and surface waters of Pambar Shola for decades to come. Indeed, if Unilever is permitted to execute its current proposal, it will leave behind at least 100 kg of the 366 kg of mercury that is conservatively reported as contaminating the soil on site. Such a clean-up would be considered inadequate if the site were located in the Netherlands or the United Kingdom where Unilever is headquartered.

Citizens' Initiative

On October 8, 2009, Pond's HLL ex-Mercury Thermometer Employees Welfare Association along with Tamilnadu Environment Council, Environmental Scientists Forum and Corporate Accountability Desk of The Other Media organised a briefing in Kodaikanal about the clean-up scandal. More than 70 people attended the meeting, including organisational members of the Tamilnadu Alliance Against Mercury – a body formed in the immediate aftermath of the March 2001 expose to ensure full settlement of liabilities by Unilever in Kodaikanal. At this meeting, it was resolved to revive the Tamilnadu Alliance Against Mercury and to conduct a campaign to ensure proper and transparent clean-up under this banner. In February 2010, the Tamilnadu Alliance Against Mercury was revived at a meeting of constituent organisations in Kodaikanal.

In a letter to various authorities of the Government and to elected representatives of the Kodaikanal Municipality, the Tamilnadu Alliance Against Mercury states and/or demands the following:

1. We condemn the Tamilnadu Pollution Control Board (TNPCB) and NEERI, Nagpur, for

colluding with Hindustan Unilever Ltd to keep the Kodaikanal public in the dark in order to dilute clean-up standards to levels which may pose harm to public health and environment.

2. Make public the detailed project report on soil remediation submitted by HUL to the TNPCB. Make available the copies of the report in Tamil and organise public hearing in Kodaikanal to invite public comments on the proposed clean-up.
3. Set up a Citizens' Oversight Committee to review clean-up protocol and monitor compliance.
4. The proposed Cleanup Criteria of 25 mg/kg should be made more stringent to maintain the integrity of sensitive ecosystems including forest and water catchment areas.
5. Offsite contamination, particularly in hotspots, should be remediated wherever possible. At the very least, a robust long-term monitoring plan for mercury levels and ecosystem impacts needs to be prepared and paid for in advance by Unilever.
6. Handover the factory site after remediation to forest department for restoration as part of Pambar Shola Nature Reserve and ensure the restoration by constituting a local people's committee including experts in Shola restoration.
7. Till the public hearing is held and local Citizens' Oversight Committee is constituted, stop all ongoing work in the HUL premises.

Pambar Shola: Biodiversity Hotspot or Toxic Hotspot

The Pambar Shola, located at an altitude of around 2000 metres, is a biodiverse environment with numerous rare and endangered species, including some that were believed to be extinct until recently. Shola forests are high-altitude stunted evergreen forests, peculiar to the Western Ghats of South India. Sholas (derived from *Solai* – or thicket in the Tamil) are a name given to a complex ecosystem comprising dense thickets of vegetation interspersed with grasslands. The Wikipedia entry on sholas states that sholas are home to some of the most threatened and endemic species. “Some of the species found here have close relatives only in the distant evergreen forests of northeast India or those in Southeast Asia. Some others are found nowhere else in the world,” the entry states

The Pambar Shola, described as a “treasure trove” by Greenpeace, is now a Reserve Forest of the Tamilnadu Forest Department. The Greenpeace article⁷ lists out the rare, endangered and one-of-its kind plant species present in Pambar Shola, and reports that the shola abuts another sanctuary called the “Kurinji Preservation Plot.” The Kurinji plant is unique to the Western Ghats, and is known for its gregarious, once-in-twelve years blossoming of light blue flowers painting entire hillsides blue. Urbanisation and habitat destruction have eaten into the Pambar and other sholas and Kurinji habitats across the Western Ghats.

Pambar Shola - Red Data List of plants

* Endemic means found only in the locale mentioned.

1. *Sonerila pulneyensis* : a delicate succulent herb endemic from Pambar Shola. Found nowhere else in all of the Palni hills
2. *Hoya wightii* ssp. *pulneyensis* : a succulent vine with waxy flowers endemic to “Pambar Shola”
3. *Plectranthus bourneate*: a succulent herb endemic to Pambar Shola.
4. *Trichoglottis tenera*: an epiphytic orchid. Pambar Shola is its major habitat.
5. *Phyllanthus chandrasekari* : a shrub endemic to Pambar Shola
6. *Hupezia* sp. : a fern ally endemic to Pambar Shola
7. *Selaginella* sp. : a delicate creeping fern endemic to Pambar Shola
8. *Psydrax ficiformis* : a tree, until recently thought extinct
9. *Utricularia salicifolia* : only one clump known on the Palni hills
10. *Elaeocarpus blascoi* : a tree believed extinct until this year
11. *Cyathea crinita* : tree fern, highly endangered (Botanical Survey of India)
12. *Aeschynanthus perrottetii* : known only from one other shola in the Palni hills
13. *Eulophia* sp. : a new species for the Palni hills first collected in April 2000
14. *Actinodaphne bourneae* : Laurel tree believed extinct (Botanical Survey of India). Two trees found in Pambar Shola
15. *Ceropegia thwaitesii* : vine, vulnerable, endemic to Pambar shola
16. *Pimpinella pulneyensis* : scarce
17. *Exacum anamallayannum* : gentian, only one other known location in Palni hills

⁷ “Pambar Shola: A Biodiversity Trove Under Threat.” Greenpeace.

<http://www.greenpeace.org/india/campaigns/toxics-free-future/toxic-hotspots/kodaikanal-tamil-nadu/pambar-shola-a-biodiversity-trove-under-threat>

