Why Unilever's Argument that a Stronger Standard will Harm the Ecology is Incorrect

CHENNAI SOLIDARITY GROUP
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Hindustan Unilever Ltd, Unilever Plc and the latter's CEO Mr. Paul Polman have responded defending their move to dilute soil mercury clean-up standards in Kodaikanal from their originally proposed 10 mg/kg to 20-25 mg/kg. In its defence, Below, we present a point-by-point clarification of the false claims made by Unilever and its CEO Paul Polman.

UNILEVER CLAIMS	**REALITY**
"HUL did not dump any mercury in Kodaikanal"	In its consultant's report of 2002, Hindustan Unilever Ltd admits to having discharged more than 1.3 tonnes of mercury just into the Pambar Shola Reserved Forest which is now part of the Kodaikanal Wildlife Sanctuary. It also disposed off other wastes illegally, including by selling it to scrap merchants Between 1992 and 1999, the company had illegally sold 43.6 tonnes of mercury-bearing wastes containing nearly 440 kg of mercury to unsuspecting scrap merchants. This includes the 5.3 tonnes that were found dumped in a scrapyard in a crowded part of Kodaikanal town. Unilever's report prepared by URS Dames & Moore can be found at: http://kodaimercury.org/environmental-site-assessment-report-urs-dames-moore-2002/
UNILEVER CLAIMS	**REALITY**
In a letter to several international NGOs, Unilever CEO Paul Polman has claimed that: *"The ceasing of operations in March 2001, the removal of all mercury-bearing material in 2003, and subsequently the decontamination and safe disposal of plant, machinery and materials used in thermometer manufacturing in 2006,* ***have removed any risk of contamination to the ecologically sensitive region."***	By the company's own admission, 1.3 tonnes of mercury has been discharged into the Pambar Shola Reserved Forest. This mercury has not been and cannot be recovered. It will remain in circulation within the senstive forest ecosystem harming wildlife and building up in foodchains. The Pambar Shola is a submontane tropical evergreen forest with a vibrant arboreal ecosystem. Prof. Sultan Ahmed Ismail, a soil biologist whose opinion on the matter of Unilever's proposed remediation, was sought by the TNPCB explains: "It is well known that significant life activity within the shola happens at the upper canopy level. All studies presented only deal with ground-level mercury and impacts, and no attention has been paid to arboreal movement and dynamics of the toxin." Further, the contaminated factory site is an active source of mercury discharge into the Pambar Shola watershed. The URS Dames & Moore 2002 report notes elevated concentrations of mercury (0.031mg/L

	or 31 ug/L and 0.085 mg/L or 85 ug/L) for two surface water samples that were collected on site following a heavy storm. The samples mentioned in the 2002 report are 40 and 110 times higher than the levels recommended by US Environmental Protection Agency for freshwater, and between 3100 times and 8500 times higher than USEPA recommendation for water quality if humans consume fish from the river segment in question. In 2015, HUL submitted a report by its consultant NEERI on offsite mercury contamination. That report found that 3 out of 5 sediment samples taken from streams in Pambar Shola forests contained elevated levels of mercury. The Pambar Shola watershed receives waters draining from the HUL site, indicating that silt-bound mercury was leaking from the contaminated factory grounds. This is in line with previous company-sponsored studies, and studies by government and non-government laboratories. For instance, a 2002 study by a Department of Atomic Energy laboratory of the Government of India found that mercury levels in air near the factory were above nominal levels by between 132 and 660 times. See http://kodaimercury.org/backdoor/wp-content/uploads/2014/09/DAE_Study.pdf Far from not posing “any risk of contamination,” the HUL factory site is an active source of mercury loading into Pambar Shola's ecologically sensitive forests. See NEERI's 2015 study at: http://kodaimercury.org/interim-report-assessment-of-mercury-levels-in-soil-sediment-and-water-samples-from-the-offsite-area-of-hindustan-unilever-limited-factory-hul-kodaikanal-tamilnadu-india/ See news coverage of this issue at: http://kodaimercury.org/report-shows-elevated-mercury-levels-outside-hul-factory-claim-activists/
UNILEVER CLAIMS	**REALITY**
In a letter to international NGOs, Unilever CEO Paul Polman has written: “Some countries use an ‘Intervention Value’ (Netherlands), ‘Guideline Value’ (UK), or ‘Regional Screening Level’ (US) that allows the Regulator to determine whether a site is potentially contaminated or not and whether it poses a risk to humans or the environment. The Screening Level, once exceeded on a particular site, indicates that some	The term “Screening Level” and “Intervention Value” cannot be used interchangeably. *Screening levels* are defined as “generic concentrations of hazardous substances in soil and sediments, groundwater and surface water at or below which potential risks to human health or the environment are not likely to occur and where no further investigation and assessment is needed.” *Intervention values* are much higher, as they “indicate when the functional properties of the soil for humans, plant and animal life, is seriously impaired or threatened.” A definition of Intervention Values can be found in Page 2 of “Dutch Target and Intervention Values”, 2000, Environmental Database Management Software, http://www.esdat.net/Environmental%20Standards/Dutch/annexS_I2000Dutch%20Environmental%20Standards.pdf

remediation may be done. The remediation criteria for that site is then arrived at following a site-specific risk assessment."	If mercury levels are found at or above "Intervention Values," the site would need to be cleaned up so that levels of mercury are brought down to a number at or below "Screening Level." In the Netherlands, the Intervention Value is 36 mg/kg, but the Target Value is 0.3 mg/kg. This is considered to be a sustainable level with negligible risks to the ecosystem, which allows soil to fully recover functionality for human, plant and animal life. Source: Ministry of Housing, Spatial Planning and Environment (1994). Intervention values and target values soil quality standards. Directorate-General for Environmental Protection, Department of Soil Protection, The Hague, The Netherlands. A Draft "Guidance Document for Assessment and Remediation of Contaminated Sites in India" currently under consideration by the Government of India prescribes a *screening level* of 6.6 mg/kg for residential/agricultural and parkland soils, and an *intervention value* of 36 mg/kg. The screening level or a lower value, if the specificities of the site so dictates, is the target to which clean-up should be achieved. Unilever's lack of understanding of crucial terminology is evident in the following statement: *"If a contaminant is present at a site at a concentration above the established generic screening level, a remedial program needs to be developed to address that contaminant."* See https://www.unilever.com/Images/soil-remediation-note-update-on-7-april-2016_tcm244-479921_en.pdf The Draft Guidance Document mentioned above fixes the Screening Level for soil mercury at 6.6 mg/kg. Unilever's statement suggests that it treats 6.6 mg/kg as the level above which "a remedial program needs to be developed to address that contaminant." But in Kodaikanal, the envisaged remedial program will leave up to 20 mg/kg of mercury in soil. In other words, even after Unilever completes its remedial program, if one were to test the site and apply Unilever's definition of "Screening Level" of 6.6 mg/kg, the site would require remediation. That is exactly our point.
UNILEVER CLAIMS	**REALITY**
Unilever Claims that the current clean-up standards have been arrived at based on several independent scientific studies: • A risk assessment study done by NEERI in 2007 as directed by the Supreme Court Monitoring Committee • A Site Specific Human Health &	Not one of the studies cited by Unilever is an independent scientific study. The listed, and other studies such as the Detailed Project Report, have all been commissioned by Unilever. Just for the first-mentioned Risk Assessment report in 2007, Unilever paid Rs. 35 lakhs ($52,000) to NEERI, according to documents unearthed using Right to Information Act, 2005. This is contrary to the directions of the Supreme Court Monitoring Committee on Hazardous Wastes (SCMC) which had expressly indicated that Tamil Nadu Pollution Control Board (TNPCB) should direct Unilever to deposit an advance amount, and that this amount should be used for all studies and remediation efforts.

Ecological Risk Assessment study conducted by IIT Delhi in 2010 • A study on the impact on soil and soil erosion by Indian Institute of Soil and Water Conservation Research Centre, Ooty in 2010 • A study on the impact and preservation of trees by National Botanical Research Institute, Lucknow in 2011	Pursuant to its visit to Kodaikanal in September 20-22, 2004, the SCMC directed the TNPCB to: *"Invoke action under Rule 16 (2) of the Hazardous Waste Rules, 1989, as amended, and fix the liability on to [Hindustan Lever Ltd] HLL to reinstate/restore damaged/destroyed elements of the environment. HLL being the occupier is liable to pay the entire cost of remediation/restoration to status quo ante in advance upto the amount estimated by TNPCB. To begin with, TNPCB may consider an advance of Rs.50 (fifty) crores for this programme. This amount shall be provided by HLL in the form of a revolving bank guarantee of Rs.50 (fifty) crores with a condition that at any given time, a sum of Rs.10 crores will be available at the disposal of TNPCB. Thereafter, TNPCB shall plan and cause to be executed the programme for remediation/restoration of the environment. TNPCB may consider placing an energetic and efficient officer on special duty exclusively for implementation of this programme."* It further directed that: *"Detailed feasibility report and DPR shall be prepared by engaging expert services and for implementation of the remediation programme, based on the polluter pays principle. A suitable expert agency may be appointed by TNPCB as project management consultant (PMC) for the purpose."* The need for independent study by TNPCB is reiterated in the minutes of the meeting of the Local Area Environment Committee convened by the TNPCB dated 3 May, 2005: *"Emphasis was laid on the following action points specified in the minutes of the VII meeting of the SCMC. . .TNPCB is directed to make an assessment of the extent of contamination and to calculate the costs involved in rehabilitation/remediation of the contaminated areas in Kodaikanal. . .TNPCB is further responsible for ensuring that the costs of such remediation are borne by HLL, if necessary by invoking Rule 16(2) of the HW Rules."* Rather than act independently and in line with the SCMC's directions, TNPCB allowed Unilever to directly engage consultants and never demanded any advance from the polluter. Till date it has not appointed a project management consultant. It is common knowledge that he who pays the piper calls the tune." TNPCB's lapse in allowing Unilever to engage a consultant directly did not escape the SCMC's notice. In a letter dated 16 August, 2005, a SCMC sub-committee comprising Dr. D. Boralkar and Dr. Claude Alvares addressed the TNPCB regarding rehabilitation and remediation of the HUL site. The letter states that the fact that NEERI acted in association with, and was financed by, HUL was "not in keeping with the SCMC's directions which require the work of remediation and rehabilitation be done through the board."
UNILEVER CLAIMS	**REALITY**
Unilever Claims that the standard of 20	The TNPCB has been a pliant regulator that succumbed to Unilever's influence sometime between 3 May

mg/kg was proposed by TNPCB. In a letter to international NGOs, Unilever CEO Mr. Paul Polman writes: *“Hindustan Unilever has not proposed any standard for remediation, let alone 20 to 25 milligram mercury per kilogram of soil.”*	2005 and 5 September, 2005. Since URS Dames & Moore report of 2002, Unilever had been proposing clean up to a standard of 10 mg/kg. In the LAEC meeting of 3 May 2005, NEERI's representative notes that “soil remediation will be done according to standards of 10 mg/kg or 2 mg/kg as the case may be according to the international standards.” At this time, NEERI had not yet been contracted by Unilever as a consultant, and was speaking independently. The 5 September meeting minutes mentions that Unilever had directly engaged NEERI as a consultant – an act that is contrary to SCMC's directions requiring TNPCB to conduct all studies. According to documents obtained through Right to Information, Unilever paid NEERI Rs. 35 lakhs and engaged it as a consultant for an opinion on site remediation and fixing of Site Specific Target Level for clean-up. In its report, NEERI argues the case for its client Unilever by recommending a clean-up standard of 25 mg/kg, between 2.5 and 12 times weaker than what it proposed at the LAEC meeting on 3 May 2005. The justification for the dilution is telling. NEERI has argued that: *“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.”* Despite orders of the Supreme Court and directions of the SCMC mandating public participation, the entire exercise of setting standards was carried out in secrecy by the polluter and its colluder the TNPCB. Indeed, a Detailed Project Report prepared by Unilever's consultant ERM does not even mention the public as a stakeholder. Its diagrammatic representation of stakeholders comprises only TNPCB, the Scientific Experts Committee, the Polluter and the polluter's consultants. No public.
UNILEVER CLAIMS	**REALITY**
Unilever Claims that the standard of 20 mg/kg is internationally acceptable and is safe for human health and ecology.	ERM, a consultant hired by Unilever, first derived the standard of 20-25 mg/kg based on a human health risk assessment with a future child residential user as the target receptor. It is not based on an ecological risk assessment that identifies pathways and receptors relevant to mercury's behaviour and the specificities of the contaminated factory site. The factory is located in an ecologically and hydrologically sensitive area and shares a fence with the Kodaikanal Wildlife Sanctuary. Any site specific ecological risk assessment would have had to factor in the following geographic features peculiar to the site: The factory is located on the southern side of a ridge that divides two watersheds. To the south of the ridge is the Pambar Shola Reserved Forest; to the north is the Bombay Shola and Kodaikanal lake

	watershed. A stream_ that originates in the factory site empties into the Pambar Shola and the Pambar River. All the water that runs off the surface and subsurface of the factory site ends up in the Pambar River. The Pambar River joins the Varaha River in the plains, and empties into the reservoir of the dam on River Vaigai. This reservoir is the source of water and fish for people from at least three southern districts --- Madurai, Theni and Dindigul. The geography and the diverse lifeforms supported by the ecosystem necessitates a rigorous ecological risk assessment than has not been done in this case. Using a residential standard for an ecologically sensitive watershed forest area for a toxin that is particularly active in the aquatic ecosystem is unscientific. Soil biologist and ecologist, Dr Sultan Ahmed Ismail, who was approached by the TNPCB for an opinion on the matter found the risk assessment to be incomplete, as “The target levels have been calculated with reference to protection of human health; and without regard to protection of ecological values. In an urban setting, this may be excusable and even justifiable. However, this factory is located within an ecologically sensitive area with several ecosystem components.” Responding to complaints, in 2010, Unilever commissioned a civil engineering department with no expertise in ecology, toxicology or biology, to conduct a study whose stated purpose was ”to generate risk-based site-specific target levels (SSTLs) that are protective to human as well as ecological receptor keeping in view future uses of the site.” This report chose quails and sparrows as target species and assumed a future “residential use.” According to Prof. Ismail, “Mercury is known to accumulate in aquatic food chains. In settings such as in Kodaikanal, mercury can also be found in high levels in moss and lichen, and in hard-shelled invertebrates like cicadas. Analysis of food chains that involve these life-forms are absolutely essential to understand or rule out the impacts that mercury may already be exerting on the environment. . .The reports sent to me do not contain any such information.” Additionally, commenting on the 2010 report, Prof. Ismail writes: “The report ought to have considered piscivorous fauna prevalent in the region. Given the findings that confirm that mercury has and is migrating off-site, the target species should not be restricted to those that feed exclusively on the site. The ecological toxicity assessment to my knowledge therefore seems without relevance.” Neither quail nor sparrow is piscivorous. Quails are not found at altitudes above 1200 metres. The factory site is located at 2180 metres.
UNILEVER CLAIMS	**REALITY**
Unilever Claims that a more stringent standard will harm sensitive ecology of the region because:	The presence of heavy contamination on steep erosion-prone slopes within an ecologically sensitive area is precisely the cause for concern of residents and environmentalists. Silt-laden mercury continues to wash out of the erosion-prone slopes into the Pambar Shola watershed. Rather than inaction, the situation

• parts of the mercury contaminated areas are on steep, erosion-prone slopes, and that remediation measures may destabilise the slope and erode the [mercury contaminated] soil.	demands urgent action. Rather than laxity, the situation requires a tightening of clean-up measures and quality. Unilever should find technologies and practices that are able to remediate and rehabilitate the site with appropriate management measures to ensure that the environment is not harmed in the process. Only a small section of the contaminated site is on steep slopes. A bulk of the contamination occurs in areas with gentler slopes. By offering the excuse of the small area with steeper slopes, Unilever is attempting to avoid any commitment to cleaning up to higher standards all through the site.
UNILEVER CLAIMS	**REALITY**
Unilever claims that a stringent clean-up will harm the environment. In a letter to international NGOs, Unilever CEO Mr. Paul Polman writes: *"HUL states that the area to be excavated would be approximately 10000 m2 if the standard is 20 mg/kg. If the standard is taken to 6.6 mg/kg, the area to be excavated would be around five times more – causing significantly greater disturbance of a fragile ecosystem, and implications for soil run-off and landslides."*	Unilever claims that soil spread over 50,000 m2 would have to be treated if the standard is tightened from 20 to 6.6 mg/kg. Nowhere has Unilever presented any data to support its claim. Soil remediation is usually spoken about in terms of volumes of soil (area x depth in cubic metres or m3) treated not surface area (area in m2). However, there is sufficient data to show that the extent of area or volume of soil that will need to be treated is far less than the wild claim of five times (or 500 percent or 50,000 m2) made by Unilever. **By Volume:** According to a Detailed Project Report submitted by Unilever in 2015, for a remediation standard of 20-25 mg/kg, the total volume of contaminated soil to be excavated would total 2,968 m^3 (cubic metre). See 2015 DPR at: http://kodaimercury.org/detailed-project-report-on-soil-remediation/ According to URS Dames and Moore report (2002), for a remediation standard of 10 mg/kg, the total volume of contaminated soil to be excavated would total 4100 m3 (cubic metre). (see section 7.2). Tightening the standard from 25 to 10 mg/kg – more than twice as stringent as is proposed by Unilever – would increase volume of excavated soil by a mere 40% not 500%. **By Area:** The 2002 Dames and Moore report estimates that the area with mercury concentrations at or above 10 mg/kg is 13,430 m^2. That is 3,430 m^2 – or only 40 percent more area than the 10000 m2 (not 500 percent more) that is proposed to be covered under Unilever's substandard proposal. (see section 5.4.1 or Table 9) Specific figures for a clean-up to 6.6 mg/kg are not available. But that should not matter as the 10 mg/kg serves as an indication of the scale of increase in area/volume.
UNILEVER CLAIMS	**REALITY**
Unilever CEO Mr. Paul Polman writes that:	Unilever has presented no data to back its claim. Neither does there seem to be any scientific study done to back this claim that 900 to 1200 trees will be affected.

"HUL estimates that 300 trees will be affected / removed if the standard is 20 mg/kg as set by TNPCB and approved by CPCB. If the standard is taken to 6.6 mg/kg (as currently suggested by activists based on current Canadian intervention guidelines), an estimated 3 to 4 times the number of trees will be affected / removed."	First of all, a 2011 report on Plant Protection mentions that about 300 trees will be "affected" not "removed" at a clean-up standard of 20 mg/kg. The report also recommends measures to protect the affected trees, including the use of hand mattock or fork cultivator instead of spades or excavators to excavate soil. Unilever seems to have extrapolated the figure of 3 to 4 times the number of affected trees on the basis of its other unfounded claim that 5 times more soil area would need to be excavated if the clean-up standard is brought down to 6.6 mg/kg from 20 mg/kg. However, Unilever's own data shows that a 10 mg/kg clean up would only necessitate 40 percent more soil area to be treated than what Is proposed currently. (See argument in previous row) In any case, an October 2010 soil conservation study reports that excavation at shallow depths will pose no threat to trees. The 2002 URS Dames & Moore report observes that most of the low level contamination is dispersed at shallow depths across the factory site. The claim of a significantly larger impact on trees is therefore contrary to Unilever's own reports' findings.

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