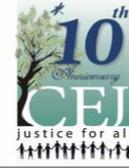




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சுற்றுடல் நீதிக்கான கேந்திர நிலையம் உத்தரவாதத்தால் (வரையறுக்கப்பட்ட)  
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October 10, 2015

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### **COMMENTS ON THE EIA OF DUMPING GARBAGE IN ATUWAKKARU ALIAS PROPOSED PROJECT ON METRO COLOMBO SOLID WASTE MANAGEMENT**

Centre for Environmental Justice (CEJ) is a public interest environmental organization engaged in promoting environmental justice and good governance since 2004. Herewith we send our comments for the Environmental Impact Assessment (EIA) Report of the Proposed Metro Colombo Solid Waste Management project submitted by the Metro Colombo Urban Development Project, Ministry of Urban Development, Water Supply & Drainage under Section 23 BB (1) of the National Environmental Act No. 47 of 1980 as amended by Acts No. 56 of 1988 and No. 53 of 2000.

Though CEJ recognizes the need of a sustainable solution for the long pending garbage problem in the Colombo metropolitan area and throughout the country, the proposed project is no way can be considered as a solution to the garbage problem. This project is mere transportation of an environmental problem to a cleaner environment, to a national park, 170 kilometers away from the sources.

This is a clear abuse of the public trust upon to the government agencies to manage the nation's pristine resources and the environment. This project also can be seen as just transferring the pollutions created due to the mismanagement, ignorant and the inabilities of the policy makers, waste management agencies of the past two decades. This is also a waste of public money to clean hands of the failed officers and public institutions. This can be seen as a usage of public money to create a major environmental and social injustice to marginalized communities and a violation of fundamental rights .

We therefore send following comments with our strong objection to the proposed project.

#### **General comments**

Although the EIA refers the Ministry of Urban Development, Water Supply & Drainage as the project proponent, this Ministry comes under two different ministries today. Therefore, the project proponent is not clear to us.

The proposed land is also a part of Weerakulicholei- Eluwankulam proposed forest reserve. It is a land that is leased by the Forest Department to Puttalam cement Corporation. Leasing out said land to Holcim is already an illegal act. Similarly, dumping of garbage in the said land is also illegal.

The proposed project is for open dumping of 1200 tons of unsorted garbage collected from the CMC area daily in Arruwakkaru old limestone mine of the Holicim cement plant. In our opinion, the project objective should be how better managed the metropolitan garbage and not how to deal with the Meethotamulla garbage dump. In such a case, there are many other alternatives to this project. According, National Environmental Act No 47 of 1987, any prescribed project activities require study alternatives, which is seriously lacking in this EIA.

The proposed project is not a solution for the increasing garbage problem in Sri Lanka. Sri Lanka generates more than 3000 tons of garbage daily, which is not only polluting Meethotamulla, but also over 300 locations in the country. This needs a much more different waste management policy which include the principles of “avoid, reduce, reuse, recycle” and sanitary landfill as found in the other middle-income countries and developed countries. Such a policy should include, awareness, separation of garbage at the generation point, introduction of extended producer responsibility, introducing and establishing all possible recycling facilities etc. If government can introduce such a policy, Sri Lanka can easily adopt zero waste strategies.

once the garbage is reduced and sorted out, there are plenty other solutions such as mechanical and biological recycling, waste to energy, etc. On this regard, CEA has failed to address the E-Waste despite the advocacies we have made time to time. Recently, there were number of instances that the companies who have signed MOUs with the CEA have violated them.

For instance, once, more than 3000 CRT tubes have sold to a non-licensed company by the reputed agencies to scrap them. In another time, a reputed agency had given the phone batteries to a non-licensed person. We therefore state that signing Memorandum of understandings with various electronic companies is mere greenwashing the problem. While we recognize that some e-waste licenses have helped to reduce the problem, major companies violate the MOU and CEA has failed to monitor this. Thus, CEA has failed to address the e-waste issue and fulfill the public expectations.

With this criticism, we restate CEJ position on the e-waste management. We have advocated over the last 10 years to introduce the *Extended Producer Responsibility*, which is the best available solution for e-waste in a small country like Sri Lanka.

We are aware that Sri Lanka has a national policy on solid waste management and a national strategy for implementation of solid waste management developed and updated by the CEA.

According to the excerpts from the CEA website [“*In view of various environmental problems arising out of inadequate delivery of waste management services by the relevant agencies, the Ministry recognized the need for a national approach to handle this serious issue. Accordingly, a National Policy for Solid Waste Management has been prepared to ensure integrated, economically feasible and environmentally sound solid waste management practices for the country at national, provincial and Local Authority level.*”

*The main objectives of the policy are (a) to ensure environmental accountability and social responsibility of all waste generators, waste managers and service providers (b) to actively involve individuals and all institutions in integrated and environmentally sound solid waste management practices (c) to maximize resource recovery with a view to minimize the amount of waste for disposal and (d) to minimize adverse*

*environmental impacts due to waste disposal to ensure health and well being of the people and on ecosystems.*

*The "Pilisar" national solid waste management program has been articulated to translate this National Policy into actions. Accordingly, a three-year Action Plan aimed at achieving short-term strategic goals of the Policy has been formulated and commenced implementation. In order to ensure integrated implementation mechanism of the Policy, a national Apex Body entitled "the National Platform for Solid Waste Management" has been established with the view to provide overall guidance, national coordination and financial and technical program facilitation through resources mobilization."*

We therefore state that the EIA for the Metro Colombo Solid Waste Management Project has not complied with the national policy and strategy which calls for an integrated solid waste management system rather than collection, transport and disposal in a remote locality as advocated in the EIA.

The project is located within one mile of the Wilpattu National park. The Wilpattu National Park (WNP) is situated on the east of the landfill site at a distance of about 300 m. The establishment of the proposed landfill site in such a close vicinity to an important and popular National Park, which is also an International Ramsar Wetland Conservation Site seems to be more problematic. It needs permission from the Director General of the Department of Wildlife. Therefore, considering the importance of this national park, Ramsar Wetland we state that this project is not feasible in this location.

#### **Insufficient analysis of the cost and the extended Cost & Benefit**

Transporting the unsorted, Colombo waste problem 170 km away from the city is not a solution at all. According to the EIA, with necessary compaction, this garbage will be transferred to 20 feet containers at Meethotamulla Transfer Station, and then those containers will be transported to Aruwakkalu by train, using the existing railway line from Kolonnawa to Aruwakkalu via Puttalam. The waste containers will be unloaded at Aruwakkalu unloading station and transferred to the **SANITARY LANDFILL** site.

This project seriously needs a cost estimate and an extended cost benefit analysis. This EIA is lacking both of these analyses.

Normal train transport of good is approximately Rs. 925 per kilometer for a wagon with 45 tonnes. This project will transport 1200 MT daily, which is approximately 27 wagons a day. It will cost (Rs. 925 x 170 km x 27 wagons) which is Rs. 4,245,750 a day. Therefore, the transport cost along will be 1,550 million Rupees per year. The project developers have failed to study this factor and this is a clear abuse of the public funds.

Further, Metropolitan garbage contains highly recyclable material. Although we don't have figures, we believe that the annual dumping will value few thousands of millions Rupees. Such a value only can be shown in an extended cost benefit analysis.

#### **Locating a sanitary land fill**

SANITARY LANDFILLS are sites where waste is isolated from the environment until it is safe. It is considered when it has completely degraded biologically, chemically and physically. In such manner, the proposed dumping is not a sanitary fill. A sanitary landfill is a pit with a protected bottom where trash is buried in layers, compacted (pressed down to make it more solid), and covered. A sanitary landfill can reduce harm from waste that has collected, and is safer than an open dumping site. But even the best sanitary landfill will fill up and, after many years, probably start to leak.

Selecting a site is a very much important for health and safety, a landfill site should be at least:

- 150 meters from coastal waters.
- 250 meters from fresh water, such as streams, ponds or swamps.
- 250 meters from protected forests.
- 500 meters from homes, and from wells or other drinking water.
- 500 meters from earthquake fault lines.

The current project will be maintaining a buffer zone of a minimum of 50 m from the existing gravel road, approximately 200 m from the Lunu Oya. However, according to the EIA, the proposed site is located within the buffer zone of the Wilpattu National park and near the rich mangrove forest lining, the Lunu Oya estuary, which increase the environmental sensitivities.

### **Insufficient analysis of alternatives**

The EIA does not conceal the fact that the location of the proposed landfill at Aruwakkalu is near a highly unique and valuable ecosystem: For example, page xix of the Executive Summary states:

“The site is located within the 1 mile (1.609 km) Buffer Zone of the Wilpattu National Park (WNP). The Wilpattu wetland cluster extending beyond the boundaries of the National Park is listed under the Ramsar Convention for Conservation of Migratory Wetland Birds, as Sri Lanka’s 6th Ramsar site. The Kala Oya / Lunu Oya Estuary which supports the largest, richest, and the most pristine mangrove patch in Sri Lanka is 200 m north east from the landfill site. Furthermore, the site being in between WNP on the east, and a relatively large area of forest cover in the Aruwakkalu area in the south west, the area serves as a biological corridor to maintain the continuity of biodiversity on each side.”

In such a situation EIA should contain a thorough examination of other potential sites for a landfill and a discussion of why locating a landfill within 1 mile of the Wilpattu National Park was the least worst of all possible options. Instead, the EIA contains a single paragraph of discussion of landfill location alternatives on page 66:

“Alternative sites for the sanitary landfill

*“The present Holcim quarry was considered as an alternative option to the proposed Aruwakkalu site. According to the discussion had with the Holcim management by the project, the present quarry site cannot be used due to high vibration and the environmental issues from waste disposal. However, there is a possibility to consider this option at a later stage, by preparing the site to suit the requirements of a sanitary landfill. Therefore, this option will be considered for future expansion after completing the present proposed landfill activities.”*

Considering all of the other possible locations within 150 kilometers of the Colombo Metropolitan Area (the proposed Aruwakkalu site is 170 km from Colombo), selection of the site based on consideration of only a single other alternative location (the present Holcim quarry) seems irresponsible.

While section 2.7.2. mentions that analysis of an alternative site for the landfill as the Holcim quarry site, the conclusions for using this degraded land that is not?? a safe distance from protected areas and sensitive ecological zones is professionally inadequate. Its conclusions are not drawn from careful scientific and bureaucratic considerations but based on discussions had with the Holcim management team. This shows that dumping Arruwakkaru is a PRE DECIDED PROJECT of certain officers of the UDA.

We are aware that this is a pet project of the former officials of Metro Colombo Urban Development Project of the UDA with very powerful political backing. We are also aware that the EIA team had no freedom to conduct a proper EIA. Therefore, this EIA is clearly biased towards this option along. This is clearly bad environmental governance. So, this reason itself is enough to reject this EIA.

**Insufficient assurance that there would not be a wash out of waste by a flood**

Another problem with the proposed Aruwakkalu site is that it is located in a floodplain that is prone to frequent flooding, as disclosed on pages 73-74 of the EIA:

As mentioned above, the project area is within the flood plain of the Kelani Ganga and subjected to inundation when the Kelani Ganga spills over. ....

**Table 3-2 Classification of floods on the Kelani Ganga**

| Classification  | Nagalagam Street Gauge            | MSL Level (m)  |
|-----------------|-----------------------------------|----------------|
| Minor Flood     | 5 feet and above and below 7 feet | ≥ 1.52, < 2.13 |
| Major Flood     | 7 feet and above                  | ≥ 2.13         |
| Dangerous Flood | 9 feet and above                  | ≥ 2.74         |
| Critical Flood  | 12 feet and above                 | ≥ 3.66         |

Since 1837 only 3 critical flood events have occurred as shown below .... The Kelani Ganga flood level has reached Dangerous Flood Level on 17 occasions since 1837. .... The occurrence of major floods has been witnessed 5 times as given below.

Locating a landfill in a flood plain is an extraordinarily poor idea because any floodwaters that reach the landfill will wash out waste and highly contaminated leachate into the environment. For this reason, the U.S. EPA generally prohibits (with limited exception) proposals for locating a landfill within a floodplain.

40 CFR Part 258, Subpart B—Location Restrictions, § 258.11 Floodplains.:

- (a) Owners or operators of new MSWLF units, existing MSWLF units, and lateral expansions located in 100-year floodplains must demonstrate that the unit will not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment. The owner or operator must place the demonstration in the operating record and notify the State Director that it has been placed in the operating record.
- (b) For purposes of this section:
  - 1) Floodplain means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands that are inundated by the 100-year flood.
  - 2) 100-year flood means a flood that has a 1-percent or greater chance of recurring in any given year or a flood of a magnitude equaled or exceeded once in 100 years on the average over a significantly long period.
  - 3) Washout means the carrying away of solid waste by waters of the base flood.

The EIA for the Proposed Metro Colombo Solid Waste Project contains no demonstration that the location of the proposed landfill would not restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain, or result in washout of solid waste so as to pose a hazard to human health and the environment. Instead, the EIA for the Proposed Metro Colombo Solid Waste Project contains very limited details about a 'bund' that would be built surround the landfill site:

### **Possibilities of polluting the surface and groundwater by surface runoff**

"There is a lower degree of possibility for the pollution of surface and groundwater by surface runoff as the project intends to provide a storm water drainage system all around the landfill site.

"A bund of 1:3.5 is to be constructed around the landfill to support the stepwise rise of the waste build up as each of the cells is deposited with incoming waste, The bunds are too steep compared with normal soil bunds adopted in other landfills which has 1:3 maximum slope levels to cope with the erosion."

To prevent a disastrous washout of waste and contaminated leachate, the bund would need to be higher than the highest flood level recorded in the area (4.12 meters) and constructed in a way that would incur zero risk of structural failure during a flood. No information is provided in the EIA about the height of the proposed bund or how it would be constructed to prevent structural failure.

### **Insufficient assurance that disposal of leachate would not severely degrade the Lunu Oya/Kala Oya estuary**

One of the most serious challenges of operating a sanitary landfill is what to do with the toxic liquid (leachate) that accumulates at the bottom of the landfill whenever it rains. The EIA discusses this challenge as follows on pages 60 – 62:

#### **"2.5.11 Leachate collection, treatment and disposal methods**

"About 197 m<sup>3</sup> of leachate per day is expected up to the period of 2025 and leachate volume (Q) was calculated using the  $Q = 1/1000 (C1 \times A1 \times C2 \times A2) \times I$  where I, C and A denotes rainfall intensity (mm/day), leachate factor (used as 0.5 in the feasibility) x landfill area (127,205m<sup>2</sup>), respectively (see Table 2-15). Giving an allowance of slightly > 10%, the leachate treatment plant has been designed to hold 220 m<sup>3</sup>/day. Leachate quantity estimates as per the feasibility study for Phase I (DOHWA Engineering Co Ltd et al., 2014)

"The untreated leachate / raw effluent to the 220 m<sup>3</sup> capacity treatment plant would comprise 2000 mg/L, 4000 mg/L, 500 mg/L, 1200 mg/L and 6 mg/L of BOD<sub>5</sub>, COD, TSS, NH<sub>4</sub>-N and TP, respectively. ...."

#### **"2.5.12 Quality of treated effluent/possibility of reuse and recycle**

The treated effluent would be used to supply make up water (10 L X 30 tractors with trailers = 300 L/day) and the rest of the treated effluent would be recycled /disposed to the Lunu Oya, which is a tributary of the Kala Oya. Kala Oya ultimately confluence the Puttalam Lagoon. The effluent would be treated to conform to the tolerance limits for industrial and domestic wastewaters discharged into marine coastal waters under the National Environmental Act No. 47 of 1980 and its amendments (Extraordinary Gazette No. 1534/18 dated 1st February 2008). (DOHWA Engineering Co Ltd et al., 2014). However, the EIA team recommends not to discharge any wastewater to the Lunu Oya (Please

see Impacts section and Migratory section for more details).”

There are some very important points to highlight here.

First, there seems to be a difference of opinion between what the “EIA team” is recommending (no discharge of any wastewater to the Luna Oya), and what the project proponents is proposing (discharge of treated leachate to the Lunu Oya, a tributary of the Kala Oya). If the EIA team is recommending no discharge of any treated effluent to the Luna Oya, then there is a very good reason for this: preventing adverse impacts to the sensitive aquatic life (including mangroves) of the Wilpattu wetland, and the project proponent should adhere to the recommendation of the EIA team.

Second, use of only 300 liters per day of treated effluent to supply make up water would deal with only a very, very small fraction of the volume of treated leachate, which is expected to be 197 m<sup>3</sup> (197000 liters) of leachate per day.

Later in the EIA, the “EIA team” continues to raise alarms about the project proponent’s plans for the disposal of treated leachate. Pages 147 to 149 of the EIA states:

#### “4.2.2.3.1 Impacts on Lunu Oya

“It has been proposed to treat the leachate such that the treated effluent meets tolerance limits for industrial and domestic wastewaters discharged into marine coastal waters under the National Environmental Act No. 47 of 1980 and its amendments (Extraordinary Gazette No. 1534/18 dated 1st February 2008). However, the Lunu Oya is further away from the Coastal Zone (more than 2 km away from the Mean High Water Line – towards land from the sea) and this surface waterway has to be considered as an inland water body. Hence, the wastewater needs to be treated to meet the tolerance limits for industrial and domestic wastewaters discharged into inland surface waters under the Provincial Environmental (Protection and Quality) Regulation No. 01 of 2010 of the North Western Provincial Environmental Statute No. 12 of 1990 (Extraordinary Gazette No. 1685/11dated 21st December 2010)., **Disposal into the Lunu Oya is not advisable due to its almost stagnant nature.**

-  
“Furthermore, the proposed treatment plant would fail such that the treated effluent would not conform to the above mentioned standards.

“According to the observations of the EIA study team, the design of the treatment plant does not sufficiently consider the effluents attributed to the washing of the containers, sewage generated by the workforce and wash waters derived from the tractor-trailer tire washing facility (see below). Moreover, details pertaining to the quality of the effluent expected from the container and tire washing activities are not furnished in the feasibility report, though there will be a significant load of TSS rather than having high levels of BOD<sub>5</sub> and COD (because in the case of the containers, any primary leachate collected would be re-introduced back to the garbage when the containers are tilted by the tractortrailers to dispose waste + leachate to the cells). ....

“The proposed biological treatment plant would not be sufficient to treat the wastewater to the stipulated standards for the discharge of effluents in to inland surface waters. Failing of the treatment system would result in **intense pollution of the Lunu Oya** especially during the drier spells (noting that rainfall is confined largely during the period of October-December to account for a significant flushing and dilution) when discharge is very low and the leachate pollution would even spread to upstream areas (up to the zone of saline water intrusion) during the high tides.. ....

“Therefore, proper mitigation methods are needed to minimize Lunu Oya pollution. The mitigation methods are given in the relevant section.”

The material above is a refreshingly rare critique in an EIA of the proposal of the project proponent. Decision-makers in Sri Lanka should heed the specific warnings contained therein.

For reasons I discuss below, the mitigation methods proposed by the EIA team are found on pages 179-180 (quoted below) are problematic.

#### “5.2.2.2.1 Effluent treatment

“Discharge of the treated leachate with any other treated effluent to the Lunu Oya could impact on the aquatic life as the Lunu Oya is almost stagnant during the dry season. Therefore, the following activities are recommended.

- “i. Recycling the raw leachate (as a source of water and nutrients) back to the landfill cells by separating before mixing with other wastewater, would enhance biodegradation as water is a scarce resource in Aruwakkalu (Hernández-Berriel et al. 2010). The equalization tank could be utilized as a leachate collection sump.
- “ii. Recycling of leachate is not possible during the rainy season, therefore, it should be treated to conform to tolerance limits for industrial and domestic wastewaters discharged into inland surface waters under the Provincial Environmental (Protection and Quality) Regulation No. 01 of 2010 of the North Western Provincial Environmental Statute No. 12 of 1990 (Extraordinary Gazette No. 1685/11 dated 21<sup>st</sup> December 2010) and discharged to Lunu Oya. The possibility of using this treated wastewater for the vehicle and container washing could be considered.
- “iii. All wastewater derived from the vehicle and container washing, may be reused after necessary treatment. If discharge of this wastewater is envisaged, it should be treated up to the standards referred in ii.
- “iv. Any excess of treated wastewater could be sent through constructed wetlands without directly discharge in to the Lunu Oya reducing the potential of pollution of Lunu Oya.
- “v. Sewage generated by the workforce should be treated using septic tanks coupled to soakage pits and these infrastructures should be designed as per SLS 745: Part 1: 2004 & SLS 745: Part 2: 2009 standards.

This material in the EIA is problematic for at least two reasons. First, page 62 of the EIA states “...the EIA team recommends not to discharge any wastewater to the Lunu Oya.” However, the mitigation being proposed by the EIA team would allow exactly this, admitting that a no discharge scenario is not feasible, stating on page 180 “Recycling of leachate is not possible during the rainy season, therefore, it should be treated to conform to tolerance limits for industrial and domestic wastewaters ... and discharged to Lunu Oya.” Any discharge of treated leachate with high levels of nutrients will likely cause significant impacts to aquatic life in the Kala Oya / Lunu Oya Estuary in ways that the EIA does not even begin to consider.

#### **Insufficient assurance that a liner could be properly installed**

Page 52 of the EIA contains a responsible plan to include a double-liner (HDPE + clay) bottom liner for

the proposed landfill. However, these plans would be technically difficult to implement if the groundwater table is very shallow and close enough to the bottom liner; it will lead to undergo cycles of drying and wetting, facilitating the development of fissures and/or ruptures of the liner. This fact is admitted on pages 145-146 of the EIA:

“Furthermore, the groundwater table becomes shallow from the south-north direction of the landfill (from 6.95 m to 0.05 m; from Phase I to Phase II of the site during drier spells) when depth increases. Therefore, a rise in the water table (as there is a hydraulic gradient from the Oya towards the land as per the locals) in certain sections of Phase II of the site during the peak rainy seasons may also cause high pressure on the single composite liner layer, to result in possible ruptures. Table 4-10 shows the possible leachate flow and the breakthrough time for the leachate to penetrate the soil-bentonite layer once the HDPE layer is damaged (assuming that the contaminants do not show significant retardation especially Cl- ions and are transported by advective flow).”

**Table 4-10 Estimated seepage velocities, flow rates and breakthrough time for different leachate heads**

| Leachate (cm) | Seepage velocity of the leachate (cm/s) | Leachate breakthrough time (years) | Leachate flow rate (m <sup>3</sup> /s) | Average velocity of Cl <sup>-</sup> ions (cm/s) | Time of Travel (TOT) for Cl <sup>-</sup> ions (years) |
|---------------|---|------------------------------------|--|---|---|
| 1.8           | 2.12 x 10 <sup>-7</sup>                 | 4                                  | 1.06 x 10 <sup>-9</sup>                | 2.12 x 10 <sup>-7</sup>                         | 4   |
| 5.3           | 2.36 x 10 <sup>-7</sup>                 | 3.6                                | 1.18 x 10 <sup>-9</sup>                | 2.36 x 10 <sup>-7</sup>                         | 3.6   |
| 30            | 4 x 10 <sup>-7</sup>                    | 2.1                                | 2 x 10 <sup>-9</sup>                   | 4 x 10 <sup>-7</sup>                            | 2.1   |

Shallow depth to groundwater is often a criterion for prohibiting a landfill to be located at a proposed site. For example, in the Philippines, Sec. 1(o) of Rule XIV of DAO 2001-34 - Implementing. Rules and Regulations of Republic Act 9003, Ecological Solid Waste Management Act of 2000 - provides that there should be a separation of at least two (2) meters between the top of the liner system and underlying groundwater. This criterion would not be met at the proposed Aruwakkalu site.

**No provision made for the disposal of effluent treatment plant sludge (hazardous waste)**

Another challenge of operating a sanitary landfill is what to do with the sludge that accumulates in the landfill’s leachate treatment system. This sludge accumulates much of the toxic metals and organic constituents in the waste and that is ordinarily classified as a hazardous waste. The EIA for the Proposed Metro Colombo Solid Waste Project admits that it has no solution to this problem. Page 180 of the EIA states:

“As per the NEA, the sludge removed from the treatment plant (which may contain adsorbed metals along with putrescible) is a hazardous material. Generally, such material after proper dewatering requires chemical fixation or immobilization (for example, with different proportions of cement)<sup>25</sup> with different proportions. Mobility of different metallic contaminants has to be determined by conducting the USEPA’s Toxicity Characteristics Leaching Protocol (TCLP) test, prior to disposal in to a secure landfill. In this respect, further advice should be sought by the Project Proponent from the NWP-PEA regarding the disposal of hazardous sludge.”

**No provision for waste reduction, reuse or recycling**

Any large investment aimed at addressing the problem of urban waste should focus on actions that reduce the amount of waste that is generated and/or increase the amount of waste that is reused/recycled. The Proposed Metro Colombo Solid Waste Project contains no such measures, as expressly admitted on page 218:

“The design has not incorporated any form of sorting or waste reduction techniques commonly known as 3R with the expectation that local authorities in the city will launch waste reduction programs and awareness programs to reduce waste at household levels. However EIA team found that there are no adequate plans within the project or otherwise to integrate such programs to reduce the waste generation significantly. The feasibility report for the project (chapter 4 section 4.3), states that recycling efforts at the WTS is uneconomical but this assumption is without a justification of a proper economic study. Also the assumption to eliminate composting at the landfill site is justified by stating that there is no market for compost in the area. However the largest compost using areas such as Kalpitiya vegetable gardens, and north east and Mahaweli areas for such compost are much closer to Aruwakkalu than from Colombo or any other place. Also if transportation is needed towards Colombo, the empty railway wagons can be used to bring the compost back to Colombo for southward distribution. However, the selection of sanitary landfill has been justified as according to the project proponent, that Parliament appointed “Cabinet Subcommittee on the Study of Suitable Disposal Option for the Metro Colombo Area”, has recommended the sanitary landfill as the more suitable option for the Metro Colombo municipal solid waste. The Cabinet of Ministry also approved this project.”

#### **Insufficient analysis to biodiversity**

A. Kumarasinghe and the research team found 23 endemic species and 9 threatened species out of 261 species found in the vicinity. Among them Sri Lankan Chameleon, Blotch bowfinger gecko, Endemic striped flying snake are special. (Reference-An attempt to reduce impacts of limestone quarries through biodiversity assessment and translocation: A case study at the Holcim Limestone Quarry Site in Puttalam, Sri Lanka- Asian Journal of Conservation Biology, July 2013. Vol. 2 No. 1, pp. 3–20), however, the EIA state that “Altogether 163 faunal species were recorded in the project area representing land snails, butterflies, dragonflies, inland fishes, amphibians, reptiles, birds and mammals. This included 17 endemic to Sri Lanka, 11 nationally threatened, 10 nationally near threatened, and four globally threatened, 05 globally near threatened, 01 exotic fish species and 06 migrant bird species.”

The forest vegetation of the area is dry-mixed evergreen forest and scrub forests (Gunatilleke and Gunatilleke, 1990), which are the typical vegetation types of the dry zone of Sri Lanka. The northern area has mangrove vegetation too. Each year Holcim clears approximately six hectares of land. According to the researchers, while large animals such as the elephants, deer, wild boar and birds move away from this area at the slightest hint of disturbance, other species tend to get trapped within it.

Analysis of impacts using the Leopold matrix reveals highly significant impacts are expected on the terrestrial habitats, fauna and flora as ecologically important flora will be removed during the construction period and which are irreversible. Therefore significant negative impacts can be observed in mangrove ecosystem within the site and the migratory fauna.

The dumping site in Arruwakkaru will attract the elephants, wild boar, sambar deer etc. and create death traps for them.

#### **Insufficient analysis on the Archeological impacts**

The Holcim quarry site is also noted for its archaeological significance, as it supports a fossil belt belonging to the Miocene period mostly found invertebrate fossils. According to Rajeeve Yapa and

others, Sri Lanka's northern Tertiary deposit is vast, composed of fossiliferous limestone that hosts fossils dating to the Miocene and late Pleistocene. Surveys by early explorers recovered fossils of both invertebrates and vertebrates, of which the latter are considered important because the earliest vertebrate fossils found in Sri Lanka date to the Miocene (Deraniyagala, (1969b). Being a marine deposit, Aruwakkalu contains a wide variety of marine fossil fauna ranging from foraminifera to mammals. (Reference -Sri Lanka's Aruwakkalu fossil deposit dates to the Burdigalian Age Ceylon Journal of Science (Bio. Sci.) 40 (2): 163-174, 2011) Soon this unearthed history of Sri Lanka lying in the beneath of this limestone will be buried under garbage.

### **Ground water Aquifer under threat**

The dumping of waste will be on the lime stone quarry mine with high permeability. The impermeable layer does not give a hundred percent assurance of damage. Therefore, if the leachate leaked to the aquifer it will destroy the ground water table. More importantly, Tabbowa- Wavathavillu aquifer which is the best and the largest fresh water aquifer in Sri Lanka will be under threat of contamination due to the contaminated garbage.

### **Conclusion**

The proposed project is fundamentally wrong approach to the sustainable waste management solution for Sri Lanka. There is a high possibility of destroying the Arruwakkaru dumping site and the railroad from Kolonnawa to Arruwakkaru due to the leachate. We are aware that the Urban Development Authority has called for Expressions of Interest from the Private Sector for projects to manage waste in Colombo. Responsible decision-making would need to evaluate the feasibility of those proposals prior to the decision. The EIA itself shows potential negative environmental impact is significant enough to:

1. Reject the currently identified site for the so-called sanitary landfill and reconsider alternative sites in a professional manner.
2. Reconsider this solid waste management plan in the context of a broader national strategy for solid waste management as per the 'National Policy for Solid Waste Management, 2007'.
3. Consider the feasibility of implementing modern environmentally friendly solid waste management solutions.

We request you to provide a oral public hearing on this project for explaining our comments and for further comments regarding the alternatives to the garbage problem which is missing in this EIA. Your consideration of these comments and written response is highly appreciated.

Sincerely yours



Hemantha Withanage  
Executive Director/ Environmental Scientist  
**CENTRE FOR ENVIRONMENTAL JUSTICE**