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WASTE - a global problem

by Vinod Moonesinghe

In mid-February this year, on its way from China to Iran, LT Grant , an italian-registered ship, stopped in Colombo harbour and unloaded 184 containers under controversial circumstances.(i)

The containers were moved to a terminal in Sedawatte, where some of the local children developed headaches, nausea and skin irritations and had to be hospitalised. Apparently the containers were laden with Oxime Carbamate, a chemical used in pesticides, which had leaked out of at least one of them.

The incident raised fears that Sri Lanka was going to be used as a dumping ground for toxic waste from more industrialised countries. It also helped focus the view of the Sri Lankan public and authorities on the global nature of the problem of waste disposal.

This was not the first time that a vessel had attempted to dispose of man-made waste in Sri Lanka. In September 1986, the cargo ship Khian Sea departed from the American port of Philadelphia with nearly 15,000 tonnes of ash generated by that city's incinerators. It originally intended to dispose of its cargo in the Bahamas. However the Bahaman Government denied permission for the ship to dock there. Over the next two years, attempts were made to dump the waste in 11 countries, including Sri Lanka.

The ship finally managed to get rid of 4,000 tonnes of ash in Haiti, and it illegally offloaded the rest into the Atlantic and Pacific oceans before it arrived in Singapore in November 1988, having been sold and having its name changed twice. The ash which had been left in Haiti, was finally returned to Philadelphia sixteen years after it left.(ii)

The case of the Khian Sea puts into perspective the need that the industrialised countries, in particular, have for dumping grounds for their waste. Modern industrialised societies produce large volumes of waste, much of it in the form of packaging. In the consumerist society of the industrialised countries, many products lose their appeal before their 'natural' life expires - an attitude nourished by advertising - and are thrown away. It is becoming increasingly difficult to dispose of this garbage. The authorities in these countries have been exploring quite different ways of reducing this load by recycling.

An example is the increasing proportion of the waste emanating from the First World, consisting of discarded 'white goods' (or household machinery and equipment). Whereas, people used to keep their hi-fi or TV sets for ten years or so, today owners prefer to buy new ones rather than repair them. About 20 million computers become obsolete in the United States every year and the total volume of 'E-waste' volume is 5-7 million tonnes.

The municipality of Vienna, the capital of Austria, has started a programme for repairing damaged equipment rather than throwing it away: it aims to create a 'repair society' where people keep products until their life really expires and they are no longer repairable. On the other hand, about two-thirds of the electronics waste collected for recycling in the United States is shipped to Pakistan, India and China where it may be reused or recycled but often is dumped in fields, on river banks, and in wetlands. Some of it is re-exported to countries like Sri Lanka.(iii)

The amount of garbage produced in Sri Lanka is, of course, far less than in First World countries. The Colombo municipality, which produces the greatest amount, disposes of about 750 tonnes per day, or about 1 kg of waste per inhabitant. In the suburbs and rural areas, the quantity of refuse gets reduced because of greater recycling by the inhabitants and by disposal in home gardens (which is not possible for most of the inhabitants of Colombo).

The big problem in the urban areas is to find suitable dumping grounds. In most existing dumps, contaminants in the waste leach into the ground water. They are also in close proximity to residential areas, which they affect by their stench and by the presence of insects and other scavengers, which spread disease in the vicinity. The mound of rubbish at Bloemendahl Road in Colombo illustrates all the dangers associated with uncontrolled garbage dumping.

A team studying waste disposal in rural areas found a different problem: hospital waste. Few hospitals have incinerators, the others mainly disposing of their needles and syringes and even body parts with their normal waste. In several cases the final disposal site is next to a river and some of this waste contaminates the river waters.(iv)

Obviously, it is essential that alternative methods be found to dispose of man-made waste. The methods would of course depend on the composition of the refuse. If the waste is not too wet, it can be incinerated. In many countries, waste incineration is used to generate electricity. The city of Vienna boasts a municipal incinerator which, apart from generating power, is an architectural landmark and tourist attraction.(v)

Organic waste, which consists of materials that will naturally degrade, can be composted or converted into biogas. Paper and cardboard are also organic and may be composted; when not too dirty, they can be recycled or re-used (for example, as paper bags or wrapping). Glass bottles can be re-used, but the demand for used bottles is getting less and less; of course, glass can be recycled. Some plastics will bio-degrade very slowly - although this process can be speeded up by the use of additives during production. Some types of plastic waste may be mechanically recycled, but has to be sorted and cleaned. Plastics may also be recycled chemically, but the technology is not widely available.

Suburban household waste was found by one research team to consist of: plastics - 15%-30%, paper - 30%-40%, organic matter - 0-30% and the remainder - 10%-30%. Most of the plastic and paper were packaging materials, and retail shops were found to produce mostly packaging waste as well. Most of the paper is already recycled into packaging material (for example, pages of books and magazines are re-used as paper bags). However, less than half of the plastic was found to be easy to recycle mechanically, a situation complicated by the fact that most packaging materials produced in Sri Lanka do not state the material type.(vi)

These problems may account for the difficulties encountered in dealing with municipal waste in Sri Lanka, particularly in the Colombo region. Almost precisely three years ago, the Official Website of the Government of Sri Lanka announced that 'the ever growing garbage problem' would be solved by a private company entering into a 'US $ 20 million contract with the Board of Investment (BOI) to set up a waste processing plant at Biyagama'.

The company had apparently found that the garbage consisted of 86% organic waste and was suitable to be converted to organic and organic enriched fertiliser, worth US$ 500 per ton. It also stated that the plastic waste problem could be solved with polythene bags, tyres and rubber slippers being converted to oil.(vii)

However, this project apparently did not get off the ground. A year ago, it was announced that a different company was launching a US$ 10 million project to convert municipal solid waste into organic fertliser. A site at Kolonnawa belonging to the Urban Development Authority was to be leased by this company for its first processing facility, and a further 9 plants were to be built at other locations later.(viii)

Alas, this project, too appears to be stillborn. So far just a few urban authorities have established their own small-scale composting facilities. No large scale solution to the problem is being found. The mountain of refuse at Bloemendahl Road continues to be over 30 metres high, as it was three years ago.

i. Chris Kamalendran and Hisham Hilaly, *The damn dump: Who did it?*, Sunday Times, 2 march 2003.

ii. Bruce E. Beans, *THE WASTE THAT DIDN'T MAKE HASTE*, Washington Post, 18 July 2002.

iii. Ashfak Bokhari, *E-waste: Exporting 'harm' to Asia;* The Dawn, 10 June 2002.

iv. Sean Finnigan , *ESR in Sri Lanka;* Engineers for Social Responsibility: ESR News, August 2002.

v. Herb Ranharter, Friedensreich Hundertwasser and Architecture in Vienna: Architecture and the Creative Process, art2u.com, 9 July 2001.

vi. Levien van Zon and Nalaka Siriwardena, *Garbage in Sri Lanka : An Overview of Solid Waste Management in the Ja-Ela Area;* Integrated Resources Management Programme in Wetlands (IRMP), Sri Lanka, Free University of Amsterdam (VU) / Institute for Environmental Studies (IVM), The Netherlands, October 2000.

vii. *Lanka's garbage problem to be solved soon,* The Official Website of the Government of Sri Lanka, 25 Apr 2000

viii. *$ 10 million BOI project to Process Municipal solid waste,* Daily News, 7 May 2002.