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Garbage, the Smelly Gold - the timely solution

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For almost a decade, the tug-of-war on the issue of disposal of the Colombo city garbage has been going on. The ToW has apparently been between environmentalists and the dollar assistance seekers.

However, the scene has been changing over the last few years with the step by step understanding of the hidden value of the smelling refuse and the technological solutions available not only for its systematic disposal but also for its processing and conversion into very valuable by-products with high utility value and agricultural and commercial prospects rather than dumping, frankly, with resulting environmental damage for decades to come, if not centuries. In the local situation there seems to be more than one way to make dollars out of this putrefying diverse reject material. The best way in the national interest is to sort and process into compost and blend the garbage into fertiliser for local use and saving dollars through import substitution and also through export of organic manure, to the ME etc to earn dollars.

While the problem has become a national issue it has grown in volume too to make it a problem with a potential for commercial exploitation. Three ministries are directly involved on the issue; the Ministers of Local Govt., of Environment and of Health. We can add another Ministry that can profitably get involved offering to solve the other ministries' problems and considerably solving one of its own problems. The Agricultural Ministry so far may have not addressed itself to the great potential it has in solving this controversial issue, but with these revelations it is to be hoped our Minister of Agriculture will take forward his advocating of the use of compost manure into the arena where, it is clear, it should have a stake, and divert the present trends towards a more comprehensive solution to several national problems. It is unfortunate, though not unusual the way matters developed, that without a comprehensive study involving the above factors at least, millions of rupees have been committed and more being committed the narrow way the funders may be approving or directing. It is also apparent that the technical personnel involved have not been complete specialistwise. To be fair by all, the vital

part the Agriculture Ministry could play has not been very visible. It may be somewhat late but not too late for corrective action. If it joins the group it is very likely that the Agricultural Ministry will be able to contribute to the costs of the projects with funds more liberally obtainable through some agricultural projects funding organisation.

In addition to the handling of the perennial food production problems, the Agricultural Ministry is waging a Waga Sangramaya to ensure that the country can stand the FAO predicted world shortage of foods in another few years. In its endeavours to boost production of paddy and subsidiary foods it has to foot a massive fertilizer subsidy bill almost all of it in foreign exchange. The Minister of Agriculture recently emphasised the multi-benefits of use of compost manure and the premium export market available for agricultural products grown with pure organic manure.

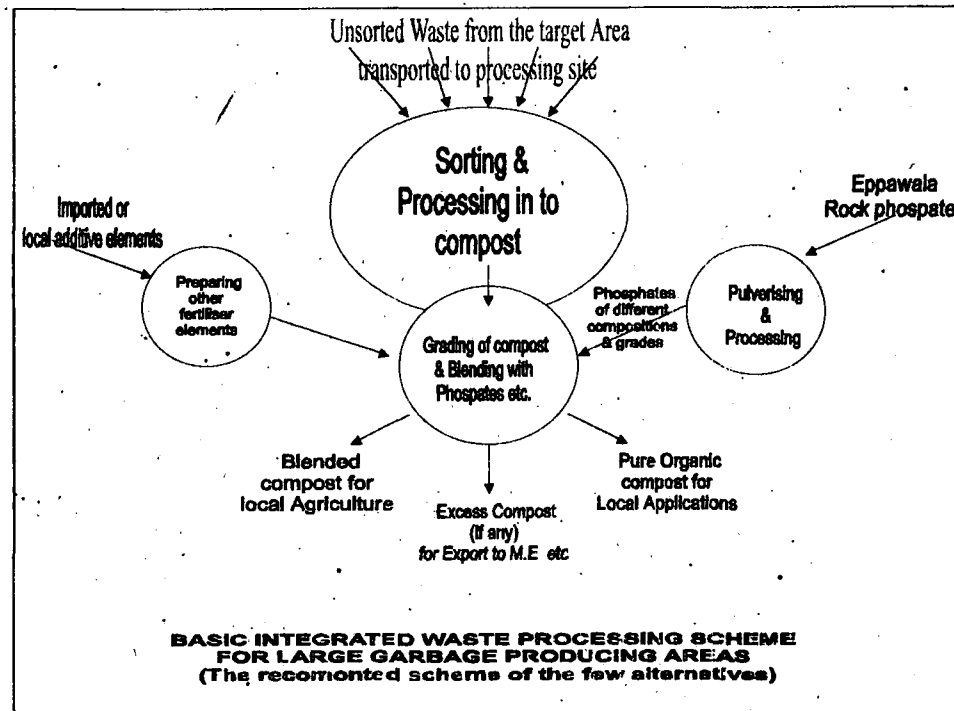
The study

A group of senior members of the Institution of Engineers, S/L, (IESL), recently studied the island's garbage problem - the diverse methods of disposal of garbage, vis-a-vis costs, benefits and environmental issues in particular. In their study they had discovered that various people on institutional or semi-institutional bases have been expending resources - time, effort, money - in rather isolated and/or closed door conditions carrying out related activities in rather unbalanced forms for Sri Lanka's needs. Also their findings have indicated that aerobic (dry-moist) composting was not only the most

adoptable and time saving method for Sri Lanka, but also the system that makes the final by-product (in compost form) most beneficial for productive use and export that would save and earn foreign exchange.

Main practicable methods

1. Dumping/Land Filling - Straightforward and no high technology or special plant or elaborate equipment is required, but it is land and ground water polluting. Sorting out of non-biodegradable refuse and metallic waste etc. is necessary to minimise pollution etc. Continuity of the method is unsustainable as filling sites are not readily available. Political and social problems are certain to erupt now and then. Also this system is primitive and the resource value of the garbage is lost (This is not an imaginative way for intelligent human effort and for the utilisation of the technological capabilities of Sri Lankans).



2. Anaerobic Digestion into Compost (Wet System) - Requires primary sorting of non-digestible components. Takes 3 to 4 months for digestion. Methane gas is generated and can be used to offset some operational costs. The water has to be fully drained before sifting and sale. It has the longest process/disposal time. (A pilot plant is in operation in CMC). Pollution is controllable and Continuity is very good as permanent sites are used. However, plant maintenance can be a real liability.

3. Aerobic Digestion into Compost (Dry System) - Requires secondary sorting also and shredding of garbage pieces before feeding into Dry Digesters. Addition of Chemical or biological accelerators would speed

up digestion to suit this process. Continuity is very good as the processing sites will be permanent. Pollution is very low and is controllable.

4. Incineration - Large scale burning of unsorted garbage in special boilers that would generate steam of the production of electricity to be sold to the CEB. Reportedly the costliest form of garbage disposal. By properly selecting the permanent site atmospheric pollution can be minimised. Continuity is sustainable. Pre-incineration sorting is possible if desired.

Eppawala phosphates

The Island's processable urban garbage should be over 2000 tons per day. The compost that is produced can be enriched by blending with local phosphates etc. On a recent analysis carried out by the Institution of Engineers concerning the much publicised controversy over the handing over of the

Eppawala Phosphates deposits for exploitation by an American company, it was discovered that local technologies for processing the deposits to meet almost all the needs of our country were available. If such technology was adopted and the deposits exploited for the different local needs, this fertiliser mineral that is getting depleted in the world, would last for over 800 years, compared with less than 50 years, the time schedule mooted by the foreign company. Once an Hon. Minister is said to have referred to the Eppawala deposits as a gold mine. If it is blended with the above smelly gold it would derive a double gold for Sri Lanka.

The country's food and commercial agriculture needs fertiliser of varying compositions to suit different crops and different regions. Many of fertiliser elements other than phosphates that can be adopted for different fertiliser quality blends, like dolomite, ferric ore etc. are available around the country. Our ingenious technologists need only the go ahead to carry out the limited research required on the blending of these elements with garbage based compost to maximise the nutrient value of the fertiliser for different crops and different soil conditions. With almost unlimited quantities of the mineral elements and over 2000 tons daily of compostible solid waste the agriculture ministry should be well set to launch an intensive and extensive food production campaign with determination, at a fraction of the present fertiliser cost.

Further it is likely that if the present fertiliser subsidy is credited to the compost based production it may be possible to supply the paddy farmers with their fertiliser requirements Free or at a token price, while, as the Hon. Minister has been revealing, reducing or eliminating the farmers' expenses on other inputs like insecticides, herbicides, soil conditioners etc. It is also likely that water requirements could be reduced and the number of sowings per year could be increased. The acidification taking place in paddy land due to use of chemical fertiliser etc. can also be minimised. With this inexpensive but more effective fertiliser and minimising of other costly inputs, there is the probability of farmers recultivating the many paddy lands that have left to go fallow. Thus a renaissance of paddy cultivation will be possible with the garbage disposal system put forward here.

(To be continued)