

WASTE MANAGEMENT WITHIN THE REGION

SOLID WASTE MANAGEMENT IN INDIA

Solid waste management in India can only be described as being at crisis point. Provision of technically sound infrastructure and services has not kept pace with the growing production of waste as the population and economy of India has expanded

Basic disposal facilities are inadequate; resulting in health hazards and highly degraded visual landscapes. The haphazard proliferation of dumping grounds on



the outskirts of towns pose a series threat to human health and ground water quality. The sites can not be reclaimed, as they have not been landfilled scientifically, resulting in the creation of long term wastelands¹. In addition to this,

open burning of wastes at dumpsites is a common practice. This causes severe air pollution, including the likely production of dioxins and furans, some of which are among the most toxic molecules known.² Uncontrolled dumps require little capital investment and minimal operating costs compared to the management of a sanitary landfill or incinerator facility. However, it is the costs in soil, air and water pollution, and human health that have not been accounted for to date in India.

The jurisdictions responsible for the delivery of waste management services are the local municipalities. However, municipalities are often so severely under-resourced at all levels that they are incapable of addressing the problem³.

Common problems faced include,

- inadequate revenue or taxation bases,
 - highly inefficient and unmotivated workforces,
 - low priority given to solid waste management as a basic community service.
- These barriers combine to make the problems seem insurmountable.

¹ Josephine Joseph: *A Study on Environmental, Social and Economic Aspects of Municipal Solid Waste Management in Bangalore*. Pg 7

² Op. cit.

³ Down to Earth: *Garbage: Your Problem*. January 31, 2000. Pg 30 - 46

In this context, there is a growing movement demanding change. In 1996, a public interest litigation was filed in the Supreme Court by Mrs Almitra H Patel and others, seeking expeditious improvements in the management of solid wastes throughout India.⁴ After several hearings, the Court constituted a Committee in order to examine all aspects of solid waste management in India. The resultant report is a damning indictment on current infrastructure and management practices. This report has served as one of the catalysts for an emerging awareness of the problems, which are slowly being recognised by Indian society.

One sector that has led this reform has been non-governmental organisations. It is becoming widely recognised that NGOs can motivate action at a grass roots level, stimulating civic pride as well as employment from the provision of waste management services. Rag-pickers have become street beautifiers, recognised as providing a valuable community service the Municipalities have been unable to provide.

External funding sources are assisting Municipalities strengthen their institutional capacity, and provide upgraded waste management infrastructure. However, it is vital that these projects (often involving large capital expenditure) are technically and socially feasible within the local context.⁵ High-tech solutions can be out of step with local requirements and be unsustainable over the longer term.

A further change within India is a general movement towards privatising sectors of the waste management industry, such as secondary collection services. However, in the current mood for privatisation, it is important that Municipalities retain the role for setting standards, monitoring and ensuring that performance standards are being met.⁶ These responsibilities are essential to ensure environmental standards are not compromised over long contract terms, and that real improvements are made to service delivery.

In respect to recycling in India, there are a number of strong markets including hard plastics, metals, glass and paper. However the recycling and market development of soft plastics has not proliferated to the same extent. It is for this reason that these plastics are the most visible component of the litter stream throughout India. The viability of plastic recycling depends on a number of technical, socio-economic and political factors⁷.

In India, political factors have produced a situation that is currently less conducive to plastic recycling. A large sector of the plastics recycling market was producing low grade recycled plastic bags in India. In September 1999, the Recycled Plastics Manufacture and Usage Rules were notified by the Union government in an attempt to reduce the menace of plastic refuse. Various state

⁴ Report of the Committee constituted by the Hon. Supreme Court of India: *Solid Waste Management in Class 1 Cities in India*

⁵ Adrian Coad: *Aid going to waste – and worse*

⁶ Isa Baud and Hans Schenk: *Solid Waste Management Modes, Assessments, Appraisals and Linkages in Bangalore*.

⁷ *Plastics Recycling in Developing Countries* http://gate.gtz.de/gate_mag/gate_95_3/

governments have instituted similar legislative measures including Tamil Nadu. The two core issues within the rules are that carry bags (whether virgin or recycled plastics) must be greater than 20 microns, and that recycled bags cannot be used for packaging of foodstuffs. However, there has been criticism of the measures, as opponents argue it simply replaces thin bags in the waste stream with thicker bags, resulting in a higher net production of plastic in the environment⁸. The situation is compounded further by the fact that the market for recycled plastics has significantly contracted. This has directly effected incomes throughout the informal recycling sector. On a local level, there are already difficulties in selling soft plastics, which enjoyed a strong market in the recent past. The legislation has addressed the end use of recycled plastic, but not the throw away culture or the long term market development for recycled plastic products.



Waste management in India presents a major challenge at all levels – environmental, social and economic. The influx of unrecyclable packaging is growing exponentially, with developments such as supermarkets and increased cold store capacity. Some organisations in India are beginning to appreciate the scale of the problem, and realise that a major effort to resource improved waste management practices is urgently required.

⁸ Down to Earth: *Plastic Unlimited* Dec 15 2000.

SOLID WASTE MANAGEMENT IN TAMIL NADU

The Tamil Nadu Pollution Control Board (TNPCB) faces significant challenges in promoting sustainable waste management practices. The TNPCB has the jurisdiction to set standards and determine waste management policy. The actual implementation is the responsibility of the Municipalities.



To date, activities of the TNPCB have largely concentrated on industrial waste management. A number of industries in Tamil Nadu produce contaminated effluents and solid wastes, and it is vital that they are assisted to change their practices as a matter of priority.

This emphasis on industrial wastes is also due to the fact that it is often more straight forward to address waste management at a known source of production. In contrast, municipal waste management has numerous and diverse sources of waste production, and it is more difficult to address the cause of the various problems.

The current Chairperson of the TNPCB,⁹ has a strong commitment to implementing significant reforms in municipal waste management practices. The policy emphasis is on waste avoidance, and the TNPCB is seeking means to reduce the impact of unrecyclable packaging. A ban on plastic bags under 20 microns has been implemented, but avenues to address broader components of the waste stream are also being explored. The Board is also investigating deposit and levy systems, as well as educative programs to promote greater responsibility in purchasing and disposal practices.

However, it is unknown what schemes will actually be implemented, and in what time frame. There are no official strategy documents outlining waste minimisation and waste management goals, and the proposed means to achieve them. While solid waste management is receiving substantial attention, for significant change to occur the TNPCB will need to move from discussion to implementation.

At a municipal government level, there are no examples or models of sustainable waste management practices in Tamil Nadu. The TNPCB is aiming to develop “zero waste” townships, but this will require financial capacity, human resources, and political will. To date this has not occurred.

⁹ Mrs Sheela Rani Chunkath Phone: 2353076, email: tnpceb@md3.vsnl.net.in

At a legislative level, there are sound laws in place in relation to the development of landfills, handling and storage of hazardous and bio-medical wastes, and solid waste management. However, there is often poor enforcement of the legislation. As an example, while the landfill development guidelines are technically sound and present a best practice approach, there are only a small number of scientific landfills operating to these standards in India. This situation contrasts with the thousands of uncontrolled dumping grounds throughout India.



There is cause for optimism however, within the Non-Government Organisation (NGO) sector. Exnora is one such NGO, which was founded by Mr NB Nirmal in Chennai in 1989. Concerned with solid waste management and broader environmental issues, Exnora was developed to empower local residents to provide solutions where their municipalities have failed. Faced with inadequate waste collection systems and a city being swamped with garbage, Exnora instigated a program in collaboration with rag-pickers, local communities and the Municipal corporation. Employing rag pickers as "street beautifiers", door to door waste collection and recycling was implemented in many districts within Chennai.



Following the success of this project, the movement of Civic Exnoras was born, resulting in approximately 900 clusters or Civic Exnoras operating today. Each Civic Exnora comprises 75 to 100 families and is affiliated to the parent body, Exnora International, which provides grass roots

organisations the strength of a well co-ordinated and respected over-arching body. Each household contributes from Rs 10 to Rs 25 per month as payment for the collection service. The income received pays the street beautifiers salary

and maintenance of the tricycle.¹⁰ Exnora has expanded its programs to include vermi-composting of organic waste, as well as broader environmental education, tree planting, water harvesting and other aspects of environmental management at a local level.

The key to Exnora's success is their participative approach. The first step is to talk to local residents, quantifying the problems, and together develop appropriate solutions. There is no one formula applied, but a system where experienced Exnora volunteers work with local residents to develop a program suitable to the local environment. Each Exnora branch has developed its own solutions, ensuring the residents have a strong sense of ownership of the project¹¹.

SOLID WASTE MANAGEMENT IN PONDICHERRY

The Union Territory of Pondicherry displays a range of solid waste management problems evident elsewhere in India. The Pondicherry Municipality currently employs 565 permanent and temporary sanitary workers, with supervision provided by 30 sanitary supervisors and 6 sanitary inspectors. Overseeing the waste management program is one assistant engineer – sanitation, and two health officers.¹² Oulgaret Municipality employs 1 health officer, 3 sanitary inspectors, 19 sanitary supervisors, 10 vehicle drivers, and 476 sanitary workers.

Waste Collection

Primary waste collection occurs through door to door collections (pilot program) and emptying of rubbish bins on streets. However, the pilot program occurs in parts of Pondicherry that have higher average incomes.¹³

There are longer term plans to expand the collection service to other municipalities and Panchayat communes within the territory. The other primary collection source is from the



¹⁰ Exnora Home page <http://www/exnora.org>

¹¹ Nirmal, MB (1996): *People's Participation in Environmental Management – Civic Exnora Guidelines*.

¹² KAMPSAX India Ltd (2000): *Development of a Scientific Solid Waste Management Yard at Mettupalayam* p.22 parts of the Bull Ward in the Pondicherry, and 7.8% of households in Oulgaret

¹³ Op. Cit. p.29

public place waste bins, of which there are approximately 480 bins in various locations.¹⁴

A range of recommendations have been put forward by KAPSAX engineering and environmental consultants to improve the effectiveness and operating efficiencies of primary and secondary collection services. Labour reorganisation, vehicle and collection rescheduling to improve plant utilisation, procuring extra vehicles, changing supervision and work output, and upgrading vehicle maintenance are all essential components of improving waste collection and transport systems in Pondicherry.

Waste Disposal

Residual waste is disposed of at an uncontrolled open dumping ground on Uppalam Road near the lighthouse. Waste is not managed scientifically and there is little compaction or covering, and the practice of burning waste is common. The site is close to the sea, and is creating a significant pollution impact. There is small fishing village which also occupies the seaward side of the site.



The Pondicherry Local Administration Department and Oulgaret Municipality are taking positive steps to improve current practices. KAPSAX India Pty was commissioned to undertake a study into present practices and determine the most appropriate solution for the region of Pondicherry Municipality, Oulgaret Municipality, Ariyankuppam town, and Villianur town (total population 399,244)¹⁵. A number of options were assessed, with the final recommendation being to develop a scientific solid waste management yard. This yard is designed so that wastes are separated, the organic fraction is composted, and residual waste is landfilled scientifically.

The projected costings for the site development are approximately Rs. 643.83 Lakhs (or 453.7 for the option of a smaller facility), with ongoing operational costs in the order of Rs. 40 Lakhs per annum.

It is important that Auroville remains informed about the development of this proposal. The proposed site is within 10 kms of Auroville (See end of chapter for location map), and as such presents a longer term potential disposal option. The development of the composting yard at Mettupalayam will also be important in reducing contaminated organic waste from Pondicherry being applied to local fields. It is not possible to predict when and if the project will

¹⁴ Op. Cit.

¹⁵ Op.Cit. Page 10

be implemented. In the shorter term, it is unlikely that Pondicherry and Oulgaret Municipalities will provide solutions for Auroville's residual wastes

While there is uncertainty as to the implementation and time frame of this project, it is clearly an important regional development for Auroville. Eco-Service needs to develop and maintain strong links with the Pondicherry and Oulgaret Municipalities through supporting and encouraging implementation of the project.

Community Level Management of Solid Wastes

At a community level in Pondicherry, there is a growing awareness of the need for better waste management practices. The Civic Consciousness Movement was founded by a retired Judge, David Annausany, in response to the growing environmental degradation in the urban area. The group undertakes political lobbying and community awareness raising.

Exnora have also established a Civic Exnora Branch in Pondicherry. They have been operating for twelve months. One barrier the organisation is facing is the difficulty in acquiring land for community waste segregation and composting schemes. Land is a scarce commodity in the region, and as such, there has not been a program implemented on the ground to date. However, the group has been active in raising awareness of solid waste management in Pondicherry. They are very interested in working co-operatively with Auroville, particularly in implementing programs in the villages.

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