



## Waste Management and Green Economy

### CONTEXT

Poor management of waste poses dire environmental and public health risks that affect all of us; but are often disproportionately borne by the poor. Methane generated from rotting waste in open dumps is responsible for almost 3% of the total anthropogenic Greenhouse Gas (GHG) emissions worldwide. Leachate from landfills and open dumps contaminates soil and groundwater with toxins that pose severe health risks. Litter, particularly plastics, choke drainage systems and can lead to floods in urban areas. Waste provides haven for many disease vectors such as rats, mosquitos and flies. These are just some of problems that poorly managed garbage pose to the health and safety of our local and global environment.

India is developing fast and as incomes of the middle and upper classes are growing, so are levels of consumption. Currently, estimated per capita waste generation rates are about 0.5 kg/day. By 2030, this is expected to increase five-fold to 2.5 kg/capita/day. This problem is particularly acute for urban areas which are growing rapidly; while at the same time space for disposing that waste is becoming increasingly limited. As much as waste is a mounting problem, the informal sector provides an opportunity for managing that problem, with 1% of the urban population performing the role of managing waste by collecting, segregating, transporting and recycling urban waste.

The easiest solution to India's swelling waste problem is to reuse and recycle as much of the waste

that is produced. Fortunately, the informal sector recycles up to 25% of urban waste produced; but their efforts are focused on waste materials that already have well-established markets. The waste comprises primarily of organic or wet waste (approximately 50 to 70 %). Even where high-quality compost is produced, lack of markets for that compost often renders it unusable. Aside from organic waste, non-recyclable portion of inorganic waste is a growing problem; particularly plastics such as multi-layered packaging. Although rules for managing such waste that employ the principle of extended producer responsibility have existed for about 4 years, these are yet to be systematically implemented.

The high dominance of informal sector in the waste management system leads to the job often being done at the risk of people's health and well-being. Many studies have shown that waste pickers are much more susceptible to certain kinds of health hazards than the rest of the population. Many of these health issues can be addressed through the development and implementation of simple policies such as segregation of waste at source. Further, workers in the informal waste sector are economically, politically and socially marginalised. Waste management is a crucial part of the green economy; but only when livelihoods are safe, stable and secure, will they be truly green.

## BARRIERS AND CHALLENGES

- **Non-Implementation of Existing Policies And Rules**

In India, policies and rules specifically for waste management streams have been designed, e.g. Municipal Solid Waste (Management and Handling) Rules 2000, Plastic Waste (Management and Handling) Rules 2011, and E-waste (Management and Handling) Rules 2011. In the case of plastic and e-wastes, the rules specifically allow for the inclusion of the informal sector in helping manage this waste, establishing collection centres for gathering, and disposing plastic carry bags and multi-layered packaging. Unfortunately, none of these have been systematically implemented across the country. A 2008 audit by the Comptroller and Auditor General of India found that none of the cities surveyed had fully implemented applicable rules and policies on waste management.

- **Lack of Segregation At-Source**

Sorting or segregation of waste at source is fundamental to the optimisation of waste management systems but these require behaviour change at the household level along with the infrastructure to collect, store, transport and process segregated wastes. Typically waste should be segregated into at least three categories: wet or organic waste, dry or recyclable waste, and harmful waste such as sanitary waste. Unfortunately, there

are very few examples of successful source segregation efforts across India thus far.

- **Lack of Appropriate Economic Incentives**

In the case of electronic waste (e-waste), informal recyclers pay more for e-waste than authorised recyclers. Unfortunately, informal processing of e-waste is very harmful; both to the health of workers as well as the environment. Unless informal collectors are incentivised appropriately, e-waste is likely to continue to be processed informally rather than through formal processing units. Further, the companies should hire existing workers who have deep knowledge and expertise of business, but instead they hire cheap labour from rural areas that are willing to move to cities to work for minimum wages or even less.

- **Lack of Data**

The incapacity of government agency to implement progressive policies towards the informal waste sector is primarily due lack of data. The gap in knowledge ranges from the size and effective contribution of the informal waste sector, whether in economic terms or in terms of solid waste management, to poor awareness about informal sector processes and how these intersect with the same urban fabric that they help to keep clean and less polluted.

## THE OPPORTUNITIES

The comparatively higher value of recyclable waste in India also warrants questions regarding the economic composition and source of this higher economic value. Significant factors might be the resource-efficient technologies and processes employed for collection and segregation: from cycle carts to local storage facilities in waste pickers' communities. The informality of the sector, in terms of extremely poor labour conditions and a great internalisation of costs (from health to habitat and child

labour) is however, likely to translate into the most significant economic advantage. The mainstreaming or rather, formalisation of the sector, which is an imperative both in legal and social terms, might impact significantly the economics of the informal waste sector.

The status quo faced by the workers of the informal waste sector is not the result of accidental, uncontrolled urban growth, but possibly the result of a national growth

strategy that relies largely on informality for the economic development of large urban centres, and on urban centres as drivers of national economy. Any measure oriented towards improving the living and working conditions of informal waste sector workers alone will therefore, face a likely unchanged broader scenario – till a different overarching strategy is embraced, explicitly or implicitly, including by enforcing labour standards. The key lessons learned are:

- Without governmental support, any initiatives are likely to fail. Government support is needed not only in implementing policies; but also training officials such as police and sanitation officers in understanding their roles.
- Decentralised waste management including solutions such as composting at home or within neighbourhoods can help resolve the issue of poor compost quality and lack of compost markets. For centralised composting facilities, government financial support in the form of subsidies for compost can help address lack of markets.
- Doorstep collection using the formalised informal sector can be easily scaled up; but funding for such initiatives is needed. One easy way to meet the funding gap is by allowing formal organisations of waste collectors to collect household user fees for their service. In low income areas, where households might be unable to pay, the government needs to step in to provide those services.
- Extended producer responsibility needs to be implemented where policies are already in place such as plastics and e-waste. In the case of e-waste manufacturers should be involved in providing financial support to meet the price gap between informal and formal processors. In the case of plastics, manufacturers should fund the establishment of collection centres. For other waste streams such as sanitary waste, such policies need to be developed that hold manufacturers responsible for the proper disposal of those products.

## Economic transitions

- Financial support from the government for decentralised and local waste management solutions
- Financial support from the private sector that fall under the framework of extended producer responsibility for waste management initiatives
- User fees for waste collection from upper and middle class households and commercial entities

## Social transitions

- Treatment of informal waste sector as valid economic actors, on par with private firms that provide waste management services
- Dignity and respect for informal sector workers
- Public understanding that consumption is the root cause for waste

## Environmental transitions

- Acceptance of poor waste management as an environmental problem, a part of which is mitigated by the informal sector
- Extension of programmes such as carbon credits through CDM and others such as NAMA to the informal sector, rather than just being restricted to large capital intensive projects
- Getting manufacturers to develop products that considers the full lifecycle environmental cost of producing, consuming and disposing of those commodities

## Governance transitions

- Development of policies that are inclusive of the informal sector and encourage manufacturers to bring a change in their current business practices
- Implementation and monitoring of existing policies around waste management.

## WAY FORWARD

### Technology and Innovation

Technology cannot be viewed only in terms of large-scale innovation, such as waste to energy. There is a need to evaluate and develop low cost technologies that promote local development. For example building up on traditional knowledge of composting, bio-gas, etc. and altering it to modern needs can help achieve appropriate technological innovations.

### Finance (Capital)

Capital investment is essential for both large scale as well as small scale projects. Small scale projects are often in more dire need of small amounts of capital. For instance, waste traders might be able to upgrade their businesses to operate according to certain occupational safety standards with financial assistance. They might be able to provide value added services through equipment such as balers and PET cutters. Also, large scale investment might be needed for creating markets for compost generated from centralised composting facilities. Capital is also needed for setting up biogas plants.

### Institutions (Markets and Governance)

Informal recycling markets are working well for a lot of commodities. The government and formal private sector should not interfere with the functioning of these; but should enable these markets work even better than they are at the moment. One way the government can do so is to ensure that space for informal waste sector is allocated in a city's and town's master plans.

### Social Action and Behaviour Change

As the citizens of the nation, we need to understand and accept our role in creating the problem of waste in the first place and then embrace the 3Rs to reduce, reuse and recycle in our daily lives. We also need to start segregating our waste at home, start composting at home if we can and identify the people who provide our city with valuable waste collection and recycling services.

Furthermore, there are a few agents of change who play a critical role in this transition.

Agents of Change	Role
Government	<ul style="list-style-type: none"> <li>Incentivise and support decentralised waste management solutions</li> <li>Implement existing policies and rules</li> </ul>
Private Sector	<ul style="list-style-type: none"> <li>Develop products with lower life cycle environmental costs</li> <li>Take responsibility for disposal of products and support it by establishing collection centres</li> </ul>
Civil Society Organisations	<ul style="list-style-type: none"> <li>Organise workers from informal sector and ensure safe, secure and stable livelihoods for them</li> <li>Advocate for more inclusive and better policies in waste management</li> <li>Act as private sector and government watch dogs to ensure compliance with existing policies and rules</li> </ul>



## About Development Alternatives Group [www.devalt.org](http://www.devalt.org)

Development Alternatives (DA) is a premier social enterprise with a global presence in the fields of green economic development, social equity and environmental management. It is credited with numerous technology and delivery system innovations that help create sustainable livelihoods in the developing world. DA focuses on empowering communities through strengthening people's institutions and facilitating their access to basic needs; enabling economic opportunities through skill development for green jobs and enterprise creation; and promoting low carbon pathways for development through natural resource management models and clean technology solutions.



## About Chintan [www.chintan-india.org](http://www.chintan-india.org)

Chintan is a registered NGO that works on issues related to sustainable cities, with a focus on toxics and waste. They specifically work through the prism of finding green jobs for the informal sector, that is, people such as waste pickers and *kabaris*, in solid waste, toxic waste, and emerging waste areas, such as e-waste, and CFLs. Chintan work with children through non-formal education and mainstreaming in schools, with the objective of phasing out and preventing child labour in waste recycling. Chintan has served on various committees, including two in the Ministry of Environment and Forests more recently. The work has been widely acknowledged. In 2012, Chintan was awarded the 1<sup>st</sup> US Secretary of State Award for Innovation for the Empowerment of Women and Girls. More recently, in 2013, Chintan received a UN-BMW Intercultural Innovation Award for its work.



## About South Hubs Network Programme

As part of Development Alternatives work on green economy, the organisation entered into a partnership with the New Economics Foundation (nef), London to contribute to a global transition movement - a movement towards a sustainable and socially conscious economy. This programme is referred to as the South Hubs Network Programme. This initiative develops from, and forms part of nef's work on Global Transition Initiative (GTI) ([www.gtne.org](http://www.gtne.org)). A similar movement in an emerging economy like India is initiated with the aim to build a civil society and stakeholder movement of actors and organisations that are committed to the principles and objectives of transitioning to a new economy. The objective of this programme is to promote innovative ways of achieving a more environmentally sustainable and socially just model of economic development.

### DISCLAIMER

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