



Respect for Waste Pickers: Protecting the Climate through Recycling

Summary

Reducing, reusing, and recycling municipal waste is one of the easiest and most effective means of reducing greenhouse gas emissions. It also provides gainful employment to millions of people in the developing world, mostly in the informal sector (“wastepickers”ⁱ). Yet rather than supporting these efforts, climate funds such as the Clean Development Mechanism are subsidizing false solutions such as incinerators and landfill gas systems, which increase emissions, unemployment, and public costs and compete directly with recycling. A new, non-market, climate finance mechanism is needed to support the formalization and expansion of the informal recycling sector.

The Climate Benefits of Recycling

Reducing, reusing and recycling municipal waste are effective and high-impact means of reducing greenhouse gas (GHG) emissions.ⁱⁱ When discarded materials (waste) are recycled, they provide industry with an alternative source of raw materials. This results in less demand for virgin materials, whose extraction, transport and processing are a major source of GHG emissions. Recycling thus reduces emissions in virtually all primary extraction industries: mining, forestry, agriculture, and petroleum extraction.

Recycling of paper and wood products has a notable double impact. Not only does it reduce the demand for virgin wood fiber, thus reducing emissions from deforestation, but it also preserves forests as carbon sinks.

Additional energy (and associated emissions) are saved in the manufacturing process itself, as recycled materials generally require less energy to be turned back into products.ⁱⁱⁱ In this way, recycling saves three to five times as much energy as incineration captures by burning.^{iv} This is particularly notable in products such as aluminum, where the direct energy use is reduced by 88% from that required to produce primary aluminum.^v

Recycling also reduces emissions from waste disposal facilities themselves. In addition to a host of toxic pollutants, waste disposal facilities are a significant source of GHG emissions. Waste incinerators emit carbon dioxide (CO₂) and nitrous oxide (N₂O); and landfills and dumps are a primary source of methane (CH₄), as well as CO₂.^{vi} The less material is disposed of through dumping and burning, the fewer emissions result.

The Climate Impact of Zero Waste

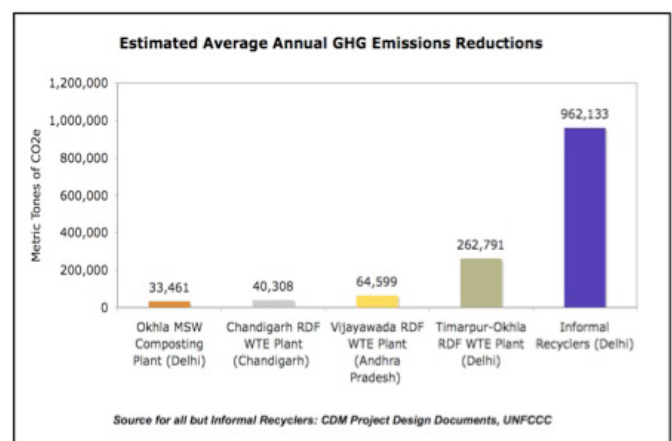
When properly accounted for, the potential impact of emissions reductions through recycling is considerable, rivaling that of sectors such as transportation.^{vii} This is



photo: Julian Luckham

because the emissions reductions are spread throughout the economy, in sectors such as primary extraction, manufacturing, power generation, and agriculture. In the U.S., the provision of goods and products is responsible for 38% of GHG emissions; and food adds another 12%.^{viii} This offers considerable scope to reducing emissions through recycling.

A strategy that addresses waste as a holistic part of all material flow is Zero Waste. Zero Waste means that the majority of municipal waste is handled through source



Source: Chintan, *Cooling Agents: An Examination Of The Role Of The Informal Recycling Sector In Mitigating Climate Change*, 2009.

reduction, re-use, recycling and composting. It addresses the residual fraction, which cannot be usefully composted or recycled, by requiring manufacturers to redesign their products and packaging so they can be safely channeled back into nature or the marketplace. As the residual shrinks, the system approaches its goal of zero waste to disposal.

A Zero Waste strategy in the US would reduce emissions by 406 megatons (Tg) CO₂ equivalent per year.^{ix} At the household level, each household that recycles reduces emissions by as much as if it stopped using a car.

Recycling is also an extremely cost effective method of achieving emissions reductions. Avoiding one ton of CO₂ emissions through recycling costs 30% less than doing so through energy efficiency and 90% less than wind power.^x

Solving the methane problem

An important part of reducing emissions from waste is dealing with organic material, particularly food waste. When deposited in a landfill, organic material largely decomposes under anaerobic (oxygen-starved) conditions, producing methane. This is the source of much of the GHG emissions traditionally attributed to the waste sector.

There are inexpensive, time-tested and effective techniques for handling organic material without methane releases.

- The simplest is aerobic decomposition, or composting. This simply requires that organic materials be regularly mixed with air as they decompose. It results in compost, a carbon-rich soil supplement which can be applied to fields, displacing petroleum-based fertilizers (another GHG savings).
- Animal feed is another traditional use for organic materials, with an important co-benefit: animal protein.
- A third approach is small-scale biogas (also known as anaerobic digestion, biodigesters, biomethanation, etc.) This generates and captures methane in an enclosed vessel, avoiding the problem of fugitive emissions. The methane can be burned for energy and the liquid byproduct (“digestate”) can be composted.

These techniques are already in use by wastepickers and other recycling workers in many places, and there is great potential to expand their capacity to recover organic materials. Apart from biogas, these techniques generally do not require specialized equipment or technology. They do, however, rely upon a stream of organic materials uncontaminated by plastics, metals and household toxics. This can only be guaranteed by a good management system in which organics are not mixed with other discards but rather maintained as a separate stream from the point of generation.



photo: Julian Luckham

Wastepickers and Recycling

While municipally-run recycling systems are commonplace in industrialized countries, in the developing world, most recycling is done by wastepickers. Wastepickers are entrepreneurial workers, mostly in the informal economy, who retrieve reusable and recyclable items from the waste stream. They collect, sort, clean and in some cases, process the recyclables, returning them to industry as an inexpensive and low-carbon raw material. This provides a livelihood to approximately 15 million people worldwide – 1% of the urban population in the developing world. Wastepickers can be incredibly efficient recyclers – achieving recycling rates higher than 80% in places where they handle organic material, such as Cairo. Yet, in spite of their efforts, much municipal waste is not effectively recycled. Wastepickers thus represent a huge opportunity to reduce GHG emissions through increased recycling rates, if given the proper support.

Challenges for Wastepickers

Although wastepickers are generally eager to expand their recycling activities, they confront a variety of constraints, which vary considerably from place to place. Most local authorities do not value the contribution of wastepickers to the environment and to municipal services, and do not officially recognize or engage with wastepicker organizations. Instead, they are too often seen as nuisances or even thieves who damage the image of the city by making it look different from first world cities. In the minds of many developing country governments “world class cities” do not include wastepickers. This conflict with the local authority is a constant danger and prevents the formation of useful partnerships. A more direct conflict comes about when local authorities seek to privatize municipal waste management by giving an exclusive contract to a private

firm. This deprives waste pickers of their livelihoods and almost always results in lower rates of collection of recyclable materials.

Even without such direct competition, the existing waste system poses challenges. Wastepickers' working conditions are extremely hazardous. Few communities separate their household waste at source, so wastepickers have to deal with a mixed waste stream. This also means that materials such as paper and organics are cross-contaminated, lowering their value and the recycling rate, as well as introducing occupational hazards. Also, many manufacturers do not design their products and packaging for recycling, so they include non-recyclable or toxic materials.

Other constraints are economic: wastepickers generally lack access to credit and to sufficient space within urban areas to set up their sorting and cleaning operations. The global market for recycled materials is highly cyclical, which adds an extra layer of financial stress to wastepicker operations. And, in many places, there is not a sufficient market for certain items, such as compost, whose recycling is an environmental priority. The current global economic crisis has worsened this situation: the price of recycled materials has dropped by up to 50%, causing wastepickers extreme hardship. Many materials are no longer economically viable to collect, so they have reduced collecting them or stopped altogether. Market-driven waste management results in lower levels of recycling and composting than could be achieved by systems focused on minimizing greenhouse gas emissions.

Waste-to-energy: the Clean Development Mechanism's false solution

The latest threat to wastepickers and recycling comes from "waste-to-energy" technologies such as waste incinerators (including gasification and pyrolysis) and landfill gas facilities. These technologies are promoted as solutions to the problem of methane from landfills, but in fact are major sources of GHG emissions themselves. Even worse, they actively compete with recycling programs, which offer much greater total greenhouse gas reductions, especially when combined with biological treatment methods. To burn waste, incinerators require a high proportion of paper, cardboard and plastic in waste – materials which are far better recycled. Lacking these materials and high in moisture, municipal waste in developing countries often will not burn without the addition of auxiliary fuel.

Landfill gas systems, which are supposed to reduce methane emissions, often depend upon sales of energy from the methane. This creates a perverse incentive to generate more methane in the landfill – some of which inevitably escapes to the atmosphere.

Incinerators and landfill gas systems cost hundreds of millions of dollars and compete for the limited money available to this sector leaving few funds and no incentive to invest in recycling or composting initiatives.

Unfortunately, the Clean Development Mechanism (CDM) has become a major supporter of incinerators



photo: Leslie Tuttle

and landfill gas projects. As of October 2009, the CDM pipeline had 299 landfill gas and incineration projects, only 32 composting projects, and no recycling projects. This badly skewed allocation of resources does not reflect climate priorities but rather the profitability of these technologies to the large, multinational corporations that are the CDM's primary beneficiaries.

The way forward

Recycling (including composting or other appropriate system for managing organics) is strongly preferable to waste disposal on virtually every criterion: greenhouse gas emissions, toxics, employment, social inclusion, sustainability, and public expenditure. Governments and international agencies should therefore commit to maximizing recycling, minimizing landfilling, and eliminating incineration altogether.

In doing so, they must include wastepickers in every aspect of policy and project design and implementation. This is because wastepickers function as the actual, if unacknowledged, recycling system in most developing countries: they have the knowledge and expertise to make programs a success, if properly included. If excluded, they will be in conflict with the new policy, significantly increasing the likelihood of failure.

This policy shift will require redirecting subsidies and public funds away from incinerators and landfills and into recycling programs (including proper handling of organics). These monies should, where feasible, be channeled to wastepicker organizations to allow them to formalize and expand their operations. Carbon markets, however, are not an appropriate source of such funds. Aside from general problems with such markets, there are two issues specific to the waste sector. Wastepickers already suffer from excess volatility in the commodity markets; carbon market volatility would simply exacerbate this problem. Also, while GHG analyses of alternative waste management systems are unanimous

in concluding that recycling is far preferable to waste disposal, the methodologies are not yet precise enough to consistently assign an exact number to the emissions avoided, a degree of accuracy which is a prerequisite for a functioning carbon market. Financial support should therefore come from non-carbon market mechanisms such as a global climate fund.

Recommendations

The CDM and other climate funds should end all support to waste disposal technologies, including incinerators, landfill gas collection, and incinerator variants such as pyrolysis, gasification and plasma.

Governments should adopt policies which explicitly aim to reduce resource consumption and associated waste generation.

Local and national governments should recognize the informal recycling sector's contribution to climate change mitigation; and, when undertaking initiatives in the waste sector, should adopt inclusive and comprehensive planning processes that give wastepickers a voice and vote at every stage of project and policy design.

Governments and international agencies should build upon the strengths of existing wastepicker networks with investments and technical support to increase recycling while ensuring decent livelihoods for all workers and traders in the recycling economy.

The parties to the UNFCCC should approve a new, non-market financing mechanism that offers financial support to recycling through multiple windows. One window should be directly accessible by wastepicker organizations for capital improvements, land acquisition, capacity-building, etc. Another should be accessible to governments that implement recycling- and wastepicker-friendly policies such as formal recognition of wastepickers and implementing source separation.

Wastepickers, with the support of local governments and climate funds, should prioritize the diversion of organic waste away from landfills through composting, animal feed and/or anaerobic digestion.



photo: Leslie Tuttle

- ⁱ "Wastepicker" is the preferred term for people who pick recyclable materials out of the waste stream. Some work landfills and dumpsites; others recover directly from the source (houses, businesses, etc.) They sell the recovered materials to the reprocessing industry for recycling.
- ⁱⁱ USEPA, Solid Waste Management And Greenhouse Gases: A Life-Cycle Assessment Of Emissions And Sinks, 3rd Edition. 2006.
- ⁱⁱⁱ *Ibid.*
- ^{iv} Morris, Jeffrey, "Comparative LCAs for Curbside Recycling, Versus Either Landfilling or Incineration With Energy Recovery." *International Journal of Life Cycle Assessment.* (2005); 13(3) 226-234.
- ^v Schlesinger, M. (2006). Aluminum Recycling CRC
- ^{vi} IPCC, AR4, Working Group 3, Chapter 10.
- ^{vii} Platt, et al. Stop Trashing the Climate, Institute for Local Self-Reliance, June 2008. www.stoptrashingthecolimate.org
- ^{viii} USEPA, Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices, September 2009.
- ^{ix} Platt, et al. Stop Trashing the Climate, Institute for Local Self-Reliance, June 2008. www.stoptrashingthecolimate.org
- ^x Skumatz, L., "What Provides The Biggest Bang? Comparing Carbon Footprint Effects And Costs from Diversion vs. Energy Programs" presentation at California Resource Recovery Association, August, 2008.

For more information, contact:

Neil Tangri neil@no-burn.org +45 50 10 5822 in Copenhagen (Dec 4-18)

Lucia Fernandez lucia.fernandez@wiego.org

Or visit: www.no-burn.org/wp and/or www.inclusivocities.org/climatechange.html
