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Ways Out of the Waste Dilemma: Transforming Communities in the Global South

Is there a future without waste? I argue that the only way there will be a future is if we work towards achieving a culture of zero waste in production and consumption. Zero waste requires transforming infrastructures and policies, but also education, training, and ongoing research. This essay considers the conditions needed in order to dramatically change our habits and bring about a culture of zero waste. Above all, more than technological solutions, it requires a society-wide shift in governance, values, norms, and behavior. In fact, some of the most innovative ideas and solutions for eliminating waste can be found, not in wealthy industrialized countries (where, after all, we have little immediate motivation to reduce waste in a society where new products seem endlessly abundant and where neoliberal politics reinforces consumption oriented growth), but in the Global South. India's and Brazil's organized informal recycling sectors, for example, can become an inspiration to change current unsustainable waste management methods and policies. These cases demonstrate how processes such as conscientization and community-based initiatives can be effective in practice.

The Waste Dilemma

There is a connection between an increase in solid waste production and a rise in gross domestic product. Data from the EU15, the OECD, and North America, for example, demonstrate a per capita increase in municipal waste production of 54 percent, 35 percent, and 29 percent, respectively, between 1980 and 2005.[1] We have an unprecedented waste dilemma in terms of the quantity, diversity, and toxicity of materials produced and discarded every day and everywhere, resulting in an unparalleled environmental crisis.

Waste is the epitomized result of major ongoing negative human impacts and the current economic paradigm based on unlimited growth. An increasing number of scientists now believe that humanity has driven the world into a new geological epoch,

1 Magnus Sjöström a and Göran Östblom, "Decoupling Waste Generation from Economic Growth—A CGE Analysis of the Swedish Case," *Ecological Economics* 69, no. 7 (2010): 1545–52.

the Anthropocene. The expansion of human populations and the unlimited extraction of the Earth's resources, they argue, are generating alarming environmental impacts. Production, consumption, and waste disposal are at the heart of these transforming forces that are changing the planet in countless, problematic ways.[2]

Figure 1: Waste pickers at the landfill Gramacho in Rio de Janeiro, Brazil (courtesy of the author).

Waste has many facets and encompasses different and sometimes conflicting rationalities. Objects made of natural resources and transformed through industrial processes can become threats to health and sustainability once discarded, as well as having an aesthetic impact on our wellbeing. At the same time these objects and materials become resources to those who collect, separate, transform, or sell them. Local governments must make challenging decisions about how to best deal with the growing amounts of waste. Often residents end up living in crisis situations due to a temporary breakdown in or a permanent lack of household waste collection. In many countries, large numbers of waste pickers still work on and around landfills. And because this work is informal and unregulated, city administrations rarely arrange for safer working conditions (figures 1 and 2). Society at large still fails to adequately reintegrate wastes into production processes, while re-

2 Noel Castree, "The Anthropocene and Geography I: The Back Story," *Geography Compass* 8 (2004): 436–49.

Figure 2: Organized recycling in the cooperative Coopercata in Mauá, Brazil (courtesy of the author).

source extraction continues at full steam. These problematic realities obviously require more comprehensive solutions.

Today geoengineering is still the focus in discourses about how to manage waste, while social and political facets of waste are often deemed irrelevant. Large corporations seem to be the brokers in waste management, and from their perspective more waste means more profit. Private corporations frequently replace local entrepreneurial and informal waste management services when cities undertake modernization projects.[3] Waste incineration technology can create an overcapacity that requires growing amounts of waste, sometimes transported over large distances, and expensive incineration technologies lock cities into long-term commitments for managing municipal waste. These measures generate impacts on recycling markets and waste treatment prices, besides producing intricate social and environmental consequences.

A Change in Culture for Zero Waste

Zero waste is more than waste diversion through recycling. Zero waste encompasses a paradigm shift away from unsustainable consumerism and discard-oriented production

3 María José Zapata Campos and Michael Hall, eds., *Organising Waste in the City: International Perspectives on Narratives and Practices* (Bristol: The Policy Press, 2013).

and consumption patterns. It embodies a radical political change away from a focus on using industrial and technological innovations to solve citizens' waste management needs, and towards framing waste in the context of issues such as overconsumption and economic growth.

Those who work with waste know that waste is a relative term: one person's waste is another person's livelihood or profit. Similarly, waste is not the final stage in the life cycle of any object. Landfilling or incinerating puts waste out of sight, but in the end, materials decompose and are transformed into other substances, including toxic leachate, air pollutants, or microscopic forms of contaminants such as microplastics that accumulate in our waterways and eventually in the oceans.

Challenging the status quo in development means disrupting business as usual, breaking off the growth-oriented myths about unlimited resources and ever-growing economies. Zero waste comes in tandem with degrowth[4] approaches to economy and development, where smaller amounts of resources are to be used more efficiently to result in a better life. Degrowth challenges the understanding of economic growth as ultimate status and a maximum achievement.[5] Slowing down also requires a philosophical approach in which "less means more" and "enough is enough," ultimately also translating into reduced consumption and less generation of unwanted outcomes. The new values and norms deriving from this innovative and inclusive, heterodox social construct put social and environmental justice and solidarity at the forefront.[6]

Conscientization for Zero Waste

The zero-waste paradigm implies expanding human awareness in the sense of Paulo Freire's "conscientization," which generates consequent responsible actions.[7] The process of developing a critical awareness of one's social and environmental reality evolves

4 The term degrowth is becoming a common term for (planned) reduction in economic output. See: Tim Jackson, "Confronting Structure," in *Prosperity without Growth? The Transition to a Sustainable Economy* (Surrey: Sustainable Development Commission, 2009), 59–66.
5 Valérie Fournier, "Escaping from the Economy: The Politics of Degrowth," *International Journal of Sociology and Social Policy* 28, nos. 11–12 (2008): 528–45.
6 Frank Moulaert and Oana Ailenei, "Social Economy, Third Sector and Solidarity Relations: A Conceptual Synthesis from History to Present," *Urban Studies* 42, no. 11 (2005): 2037–53.
7 Paulo Freire, *Pedagogy of the Oppressed* (London: Penguin, 1972).

through reflection and concomitant action. Communications that activate social norms can be effective in producing beneficial society-wide behaviors. Objection and action are the ingredients needed to address the current power hegemonies that created our waste dilemma in the first place.

The current linear economic development model is still mainly based on resource abundance, modernization, and technological fixes. These deceptions, which of course suit those with political and economic interests and power, still widely dominate our worldviews and corrupt the lifestyles of people still cocooned in the consumption bubble.

Critical reflection alone may not provoke change. Besides a better understanding of the facts and processes that shape current developments and social relations, we need actions to generate the politics and civil responsibility to reduce the negative impacts on our planet. These actions include conscious lifestyle changes, for example, using alternatives to fossil-fuel-powered transportation, or consuming more responsibly and wasting less. However, the actions also need to happen on a government level: for example, rewarding low-carbon choices and penalizing wasteful behaviors, installing safe bike lanes and enabling low-cost access to bicycles and public transportation, stimulating circular economy initiatives, exercising participatory deliberation in decision-making, and questioning why we generate so much waste.

Aiming for reduction ("less is more"), sufficiency, and solidarity can also be nurtured by resetting values and social norms to promote cultural changes that value environmental integrity and diverse forms of sustainable development. In practice, these can guide innovations to do more than just divert waste through recycling, but instead tackle sources of waste before they need to be managed.

Once established, these values can be supported by and communicated via creative and inclusive strategies of social dialogue (education, public events, cultural activities, social media, art and performance, etc.). Through active participation, information becomes meaningful knowledge and has the potential to travel quickly. Over time, actively disseminated and reinforced new social values become norms that have the potential to result in behavioral and lifestyle changes that turn away from unhealthy production and consumption patterns. It is difficult to change behavior. In order to stimulate pro-environmental behavior (e.g., recycling), many challenges need to be addressed, such as overcoming

consumer lock-in, changing old habits, forming new ones, and understanding the complexity of social and cultural logic, as Tim Jackson has discussed in the context of the Global North.[8] Jackson reiterates that policy interventions have a major influence on social norms, ethical codes, and cultural expectations. Getting the educational and policy process right can create powerful forces for pro-environmental and pro-social change.

Recycling programs are far from being efficient, and not enough is invested in avoidance and reuse. Furthermore, you can't recycle infinitely. In many cases, recycling produces hazardous byproducts, involves substantial transportation, and requires a lot of energy. Finally, recycling can also reinforce unsustainable consumption behaviors, as we see everywhere when increased recycling rates come along with increased packaging.

Therefore, the conscientization and politicization processes have to continue. Current waste diversion methods need to be considered critically. Public policies are crucial to a transition towards upstream solutions with a focus on avoidance, reduction, and reuse. Economic instruments in particular can provide incentives to enforce legislation on reducing carbon emissions and conserving resources. But we also need to learn to fully utilize existing practices that may not be recognized because they take place informally and are outside of government waste infrastructure. The informal economy generally includes activities that are not monitored, controlled, or regulated either directly or indirectly by the state. The range of informal workers—most of whom are in the Global South—is quite broad and includes waste pickers, who collect, separate, and sell recyclable materials in many different forms. These diverse kinds of recycling initiatives can become a stepping-stone towards a culture of zero waste.

Recycling Cooperatives and Resource Recovery

Most cities in the Global South do not have formal recycling programs, nor do households generally source-separate their waste. Often municipalities do not provide waste collection services in informal settlements. Yet thousands of waste pickers and small-scale entrepreneurs collect recyclable materials from the garbage. Most of them are still not yet organized. Their work contributes considerably to resource recovery and recycling. Ap-

8 See: Tim Jackson, *Motivating Sustainable Consumption: A Review of Evidence on Consumer Behaviour and Behavioural Change* (Surrey: Sustainable Development Research Network, 2005), 154 ff., http://www.sustainablelifestyles.ac.uk/sites/default/files/motivating_sc_final.pdf.

proximately 0.5 percent of the urban population in the Global South is involved in waste collection and recycling activities. Their tools and methods vary: from collecting with hand-pushed carts to using electric carts and trucks; from separating on the floor without gloves to separating on moving conveyer belts with protective equipment; from selling to middlemen to selling directly to the industry as part of a network (figure 3).

Figure 3: Workers separating recyclables at Cooperpires in Ribeirão Pires, Brazil (courtesy of the author).

In most cases this work is truly informal, without any government assistance in the form of either infrastructure or policy. These waste pickers work under extremely vulnerable and hazardous conditions, collecting and separating in the street and on dumpsters. A growing number of informal waste pickers has now organized into groups (cooperatives, associations, trade unions, networks) and has succeeded in getting some support from their local government. For such projects to continue successfully beyond the next election period, the existence of a legal framework has proven to be fundamental. Public policies must be in place to guarantee access to recyclable materials and to safeguard a site and adequate working conditions for material separation and storage. Specific policies are required to ensure fair remuneration for the selective waste collection and environmental services provided by these workers.

Some municipalities include the organized recycling cooperatives in door-to-door collection of recyclables. The city of Mauá in the metropolitan region of São Paulo, Brazil, for example, has recently signed a contract with the regional recycling network Coopcent-ABC (composed of nine groups with a total of approximately 250 members), of which the local cooperative Coopercata is part (see figure 2). Other examples of local governments working in partnership with recycling cooperatives for selective waste collection are the cities Ourinhos, Belo Horizonte, and Londrina in Brazil. In these cases, the recyclers have been successful in accessing capacity development, transportation, space, and infrastructure to do the material separation; they are paid for the service of collecting materials that would otherwise be landfilled. These places are still an exception, however: so far very few cities in the Global South have committed to paying for selective waste collection services, and most municipalities continue to take the free work of waste pickers for granted.

Figure 4: Door-to-door collection in Ribeirão Pires (courtesy of the author).

Nevertheless, the door-to-door household collection provides opportunities for these workers to act as strong allies in the promotion and implementation of zero-waste strategies (figures 4 and 5). The cooperative in Ribeirão Pires (Cooperpires), for instance (see figures 3 and 4), has endured a long struggle over the past 15 years, with many ups and downs in the degree of support from the municipal government. Cooperpires is an example of resistance and persistence, as happens in many places in the Global South. Besides performing selective waste collection, the recyclers also play a key role in the conscientization of the households by educating them about source separation, recycling, and the value in waste and in not wasting. Such waste management activities are inclusive and by involving citizens in the disposal and final destination of waste, rather than merely entrusting this task to private companies that merely remove the waste from sight,

Figure 5:
Unloading the truck after municipal door-to-door collection in Mauá (courtesy of the author).

these practices encourage taking responsibility for what happens to one's waste. Thus the interaction between the recycler and the household encourages critical reflection on one's own behaviors.

Challenges in Inclusive Waste Management

Waste has always been a resource for waste pickers, but it has recently also become a resource for corporations and large industries involved in waste management. As a consequence, recurrent conflicts arise between the informal and cooperative recycling sector (the "commons") and the waste industry over who gets to access these resources. With the recent rebirth of waste incineration using large-scale waste-to-energy technologies, disputes over waste are increasing. Thus, although the commons have long been engaged in collecting and recycling waste materials, their access to these resources is dwindling.

The recyclers face prejudice, aggression, and intolerance, with local governments sometimes even prohibiting waste picking in public spaces. Consequently, recyclers all over

the world have begun to organize themselves as a social movement fighting for formal recognition, better and safer working conditions, and fair remuneration for their services.

While participatory processes have many benefits, they are also not without challenges: they are often conflict laden, time consuming, and complicated to implement. Working in a cooperative system implies facing difficulties on a daily basis, but it also offers opportunities for personal growth and transformation and for professional and political achievements. Key to this is the development of conflict resolution practices. The collective approach to work is challenging for individuals who have spent most of their lives excluded or marginalized. As Freire notes, during the initial stage of the struggle for emancipation, the oppressed tend to become oppressors themselves (sub-oppressors) as a consequence of being conditioned by the contradictions of the concrete situation by which they were shaped (oppression). Partnerships between municipalities and recycling groups in selective waste collection are still in their infancy. In Brazil, workers' aggregations such as the national recyclers' movement (Movimento Nacional dos Catadores de Materiais Recicláveis – MNCR) and recycling cooperative networks such as Coopcent-ABC, as well as initiatives like the Waste and Citizenship Festival (Festival Lixo e Cidadania) in Belo Horizonte are spearheading participatory waste management. Some cooperatives (e.g., Recicla Ourinhos, Cooper Região–Londrina, ASMARE, Belo Horizonte) have developed strong partnerships in waste collection services with their local governments. In India, the Alliance of Indian Wastepickers (AIW) is a national coalition of waste picker organizations, notably from Delhi, Pune, Ahmedabad, Calcutta, and other large cities. Kagad Kach Patra Kashtakari Panchayat (KKPKP) is a trade union of approximately 10,000 waste pickers and itinerant scrap buyers registered since 1993 and based in Pune. Other initiatives include the Project for the Empowerment of Waste Pickers of the SNDT Women's University in Pune, and finally the manifold projects supported by the Indian Self Employed Women's Association (SEWA) and international nongovernmental organizations like Women in Informal Employment: Globalizing and Organizing (WIEGO) or the Global Alliance for Incinerator Alternatives (GAIA), all working towards the strengthening of inclusive and community-driven forms of waste management. There is a growing momentum for these initiatives and projects to expand, demanding change and social dialogue.[9]

9 For more detailed information on informal waste pickers in India see: Soupriya Routh, *Enhancing Capabilities through Labour Law: Informal Workers in India* (London: Routledge, 2014).

Lessons to Be Learned from the Global South

In spite of the lack of formal recycling programs in most cities in the Global South, informal waste pickers provide many of the services such programs are designed to fulfill: by retrieving recyclable materials from municipal waste, they reduce the quantity of waste that is deposited in landfills and thereby contribute to prolonging the life of landfills and reducing greenhouse gas emissions.

Their activities help close the material loop, reduce dependency on imports, reduce environmental impacts associated with waste disposal (leachate, air contamination), drive innovation in product design, involve citizens in designing a better world, and help educate and generate greater awareness about responsible consumption and zero waste, as well as shaping socio-environmental conscientization. Organic waste can be composted and used in urban agriculture, bringing nutrients back to the soil. In a transition away from wastefulness towards resource recovery, cooperative recycling offers a viable concept of inclusive solid waste management that tackles the objectives proposed by Zero Waste Europe of creating a "low-carbon, resource efficient, resilient and socially inclusive economy" and a society with greater social cohesion.

What can we learn from the experiences of waste pickers and organized recycling cooperatives and their operations?

The first lesson from the Global South is that informal and organized recyclers recover a much wider spectrum of different materials than conventional recycling programs. They separate waste into different types of plastic (based on composition, quality, and color), paper (newspapers, magazines, white papers, mixed papers), cardboard, metal (tin, copper, iron, aluminum), and glass of various sorts. Even dirty plastics constitute at least two separate categories to be recycled. In some cities they also collect cooking oil, wood and other construction materials, fluorescent lamps, batteries, and different types of plastics and metals from electric and electronic products, as well as platinum-group metals. As studies by organizations such as Zero Waste Europe have shown,[10] the praxis of recycling groups working in tandem with local governments to recover recyclable waste is in line with the aims set by zero-waste movements.

10 Zero Waste Europe, "Zero Waste?," accessed 14 February 2015, http://www.zerowasteeurope.eu/about/principles-zw-europe/.

The second lesson is that recycling programs that involve informal waste pickers generate many jobs. The cooperative Recicla Ourinhos in the city of Ourinhos, Brazil, had 87 members in 2013, collecting the recyclables of 40 percent of the city's 110,000 inhabitants and separating 126 tonnes of recyclable material every month. There are still many more jobs to be created by expanding the recycling program to cover the entire municipality.[11]

The third lesson speaks about the environmental education opportunity provided by some of the programs conducted in the Global South, where waste pickers have become educators. While performing door-to-door selective waste collection they also teach the population about material separation and waste avoidance. While in North America and Europe recycling programs may be efficient in regularly collecting household recyclables, very little is done to educate people about ways to improve their recycling habits and reduce or avoid generating waste.

Finally, the experiences from the Global South show us how organized community-based recycling creates social inclusion and helps reduce stigma and marginalization. It restores citizenship, particularly of those individuals who had no sense of belonging and were homeless and unemployed in cities that generally paid them no heed. Unfortunately, there are many people in such situations in the Global North as well. They, too, can be socially included through meaningful work in resource recovery, as projects in some places in Canada have already demonstrated.

Such community-based recycling in the Global North has mostly taken place in the form of stand-alone community initiatives. Some examples from Canada include the recycling and reuse centers in the Gulf Islands (e.g., Saltspring, Hornby, Maine); the recycling cooperative Les Valoristes in Montreal; and United We Can, a bottle depot run as a social enterprise in Vancouver.[12] These experiences demonstrate significant contributions towards generating social capital and building social cohesion, and we can certainly learn from them as well.

11 Personal communication 28.08.2015 and "Sem 'lixão' desde 1993, Ourinhos é premiada por apoio a catadores," *Revista Radis* 139 (April 2014), http://www6.ensp.fiocruz.br/radis/conteudo/sem-'lixao'-desde-1993-ourinhos-e-premiada-por-apoio-catadores.

12 For more details, see Crystal Tremblay, Jutta Gutberlet, and Ana Maria Peredo, "United We Can: Resource Recovery, Place and Social Enterprise," *Resources, Conservation and Recycling* 54, no. 7 (2010): 422–28.

A Future without Waste?

The reconceptualization of waste as a resource has already happened. Urban mining, or recovering deeply buried materials from both disused and active landfills, is becoming more common and attracting the attention of researchers in all disciplines. The scale of the involvement of the private sector in mining these resources discarded decades ago also demonstrates the economic interest in retrieving resources embedded in waste.

Cooperative recycling in the Global South and bottle recovery programs and social enterprises in Canada and Europe demonstrate that there is not one single model for redesigning our waste management practices. It is time to upscale and expand the scope of these initiatives. Recycling programs can have a more significant impact by avoiding and reducing waste generation in the first place, maximizing recovery rates, and increasing the awareness level of government, industry, and the public at large. The current waste dilemma can be addressed in innovative and diverse ways, transforming society at a global level.

Transdisciplinary research, intersectoral policy approaches, and participatory practices are critical when working with the public on waste reduction and waste disposal and when creating municipal, provincial/state, and national/international regulations for avoidance, reduction, reuse, and recycling. An integrated approach must also inform industry and business to create viable products and to mitigate post-consumer environmental problems. Here we can learn from social dialogue and participatory approaches practiced in some cities in the Global South, as demonstrated with examples from Brazil and India, where hundreds of thousands of informal waste pickers have organized in trade unions and workers' aggregations, such as cooperatives and associations, to defend their work in selective waste collection and recycling and thus accomplish significant environmental and social contributions.

If humans are willing to collectively shift away from a regime of waste accumulation molded by practices that exploit labor and the environment, and instead move towards new sets of social, economic, and institutional arrangements guided by a culture of zero waste—then there will be a future without waste. Initiatives aiming towards zero waste should be supported and promoted to inspire other places and people to do better.

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