

EDITORIAL

Editorial Introduction to the Special Collection 'Development of Waste – Development as Waste'

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This Editorial introduces the special collection 'Development of Waste – Development as Waste'.

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Non-organic waste as a major challenge, both locally and globally, emerged in the twentieth century. Never before has there been an age which placed even remotely as much waste into the world, and there is no end in sight. Exact quantification is virtually impossible, as data are unreliable and patchy. Regarding Municipal Solid Waste (MSW) alone, one estimate has put the annual global output in the 2010s at 1.9 billion tons (D-Waste: Global Waste Clock, undated). It is expected to keep growing, projected to reach 3.4 billion tons per year by 2050 (World Bank 2019). Other scenarios suggest that global solid-waste generation rates will exceed 11 million tons per day by the year 2100, with the areas of high waste generation shifting from OECD countries to Asia and, subsequently, to Southern Africa as people in these areas become wealthier and more urbanized (Hoorweg, Bhada-Tata and Kennedy 2013).

The reasons for this increase are manifold and may differ in detail between different areas, but generally they involve a combination of population growth, increasing incomes, changing purchasing and consumption habits, and capitalist production cycles (Köster 2016). These factors have a large overlap with what is considered "development," commonly understood as improving material living standards and expanding personal life choices. There is a robust correlation between on the one hand, income levels and urbanization rates and, on the other, the amount of solid waste produced (Hoorweg and Perinaz Bhada 2012: 8). There is a similarly reliable positive correlation between the Human Development Index of numerous countries and their per capita generation of municipal solid waste (Hoult, Weston and Leonard 2018). Clearly, wealthy people and societies have been primarily responsible for flooding the world with waste.

In addition to wealth, it is changing ways of housing and purchasing that have led to increasing waste production. Thus, while increasing income has enabled people to buy more products, the increasing distribution of these

products through supermarkets, mail order services and online sites has led to a tremendous increase in packaging during the last century. In 2016, EU citizens generated 170 kg of packaging waste per person, ranging between 55 kg/person in Croatia to 221 kg/person in Germany. About forty percent consisted of paper and cardboard, and just under twenty percent made of plastic, glass and wood (Eurostat 2019). Translated into everyday life, this means that online shopping has turned acts of buying into waste production procedures, while the bottles and cups used for consumption "to go" have turned drinking into a spree of single-use items, often discarded after minutes of use (Laville and Taylor 2017). Both represent a life-style which low-income people and societies have sought to emulate and have adopted with growing incomes as soon as they became sufficiently wealthy to do so.

There are several ways in which this constellation is problematic. One is economic: it is a form of economic inefficiency to spend money, energy and labor on producing something which quickly ends up having, at best, no negative value instead of being useful. More disconcerting in many people's eyes are the health, environmental and social repercussions, as waste reflects how people around the world re-arrange matter around them as part of large and small ecological systems. Waste can be generated during all stages of these transformations: the extraction of raw materials, the manufacture of products, their usage, transportation and, of course, final disposal. Every step can involve the emergence of material which needs to be thrown "away", though, of course, there is no such thing as "away" in a finite world. Rather: 'Away is a place' (Amankwaa, Adovor Tsikudo Bowman 2017). This place can be a landfill, some place on the land surface, which may grow to shape the local landscape as a hill or mountain. It can be a place underground, separated from the surface by layers of soil or rock, as waste is buried or placed in natural or man-made cavities found as caves or created through mining. It can be some body of water, such as a lake, river or ocean. Or it can be the air, as burnt particles resulting from incineration stay in the atmosphere before settling somewhere on land or water as dust, or before being inhaled by living beings.

Historically, all these methods have been used. Today, according to D-Waste, almost 30 percent of global waste remain uncollected, presumably littering streets, fields, beaches and other areas. Of the remainder, approximately 70 percent is disposed on landfills and dumpsites, 19 percent recycled or recovered and 11 percent burnt at energy recovery facilities (D-Waste: Global Waste Clock, undated). A special role is taken by a variety of synthetic organic compounds, generically known as plastics, whose production has far outpaced any other material in recent decades. Plastics barely existed in 1950 but have increased spectacularly since, making them virtually ubiquitous today. A recent analysis indicates that 'as of 2015, approximately 6300 Mt of plastic waste had been generated, around 9% of which had been recycled, 12% was incinerated, and 79% was accumulated in landfills or the natural environment.' (Geyer, Jambeck and Law 2017). In 2017, scientists found the beaches of the remote Henderson island in the Pacific covered in plastic debris (Hunt 2017). For the first time in human history, people cannot escape their own waste by moving to some other place because there is virtually no place on Earth left untouched by the unwanted leftovers of human activity.

It is more than an aesthetic problem. Plastic waste creates problems whose global reach can as yet only be estimated. Relatively, a lot of attention has been paid to the plastic waste on the oceans, spurred, in parts, by the way it can be made visible in pictures of sea mammals trapped in discarded fishing nets, dead sea animals with opened bellies full of plastic trash or the much-watched video of the clearly painful procedure of pulling a plastic straw from a turtle's nose (John 2014). And there is little doubt that a massive amount of plastic waste keeps polluting the oceans with a far-reaching, though difficult to quantify, impact on all marine life (Law 2017). However, for several reasons these pictures only capture a fraction of the challenge. In reality, only a small part of the plastic in the oceans is so visible. Most has been broken down into small pieces, virtually invisible to the naked eye, or does not appear at all in the surface area of the ocean, leaving scientists wondering about the 'missing plastic' presumably accumulating somewhere in the lower levels of the seawater. Realistically, we still have no clue about what has happened with the majority of plastic waste, which has landed in the oceans. And the entirety of plastic waste in the oceans, in turn, merely represents an estimated three percent of global annual plastic waste (Jambeck et al. 2015). However, the remaining 97 percent on land also impact life in and at the world's oceans. A recent study has found that plastic bags contribute more to climate change than hitherto believed, as they produce greenhouse gases when discarded on land and degrading in sunlight (Royer et al. 2018). Climate change, in turn, negatively impacts global fishing through a complex interplay of factors including rising temperatures, increasing acidification and more frequent extreme weather events (Plaganyi 2019). This process has tangible effects on global health: globally more than half of the world population rely on fish for fifteen percent of their animal protein intake (Badjeck et al. 2013, 1).

This is only one facet of the fact that the form of development embraced by societies around the world during the last decades has been characterized by the disposal of large quantities of materials and products on land, in water or in the air, often after only brief periods of usage. This means that the developmental system has been inextricably connected with the production of things whose most redeeming quality for the longest part of their material existence would be to cause as little harm as possible. Marco Armiero (2019), has coined the expression of "wastocene," depicting a socio-economic system increasingly defined by its production of products which are quickly considered trash. In addition to being inefficient, this system produces a form of waste-related discrimination.

Indeed, neither the generation nor the disposal of waste are experienced equally by all people in the world. Waste reflects not only the developmental stage of a given society, but also developmental asymmetries between different regions. All but two of the 50 largest dumpsites worldwide are located in low-income countries in the Global South (D-waste 2014). To an extent, this phenomenon is fed by both legal and illegal transfers of hazardous waste from industrial to low-income countries. Similarly, within high-income countries waste disposal sites tend to be near socio-economically disadvantaged populations and minority groups. Thus, at different scales, waste tends to flow from rich to poor (Borowy 2015). In the same way as, some authors argue, it is misleading to talk about 'Anthropocene' as though all people had contributed equally to profound changes to the face of the Earth, preferring instead 'Capitalocene' (Moore 2019), waste can be seen as a marker of a flawed and asymmetric development.

This approach is plausible, but it also entails some difficulties. One problem is the unclear definition of 'waste.' Depending on circumstances, the same material can function as useless garbage or industrial raw material, as dangerous organic waste or valuable fertilizer, as sub-quality left-overs to be disposed of or perfectly edible food. Mary Douglas (1966) has famously defined dirt as 'matter out of place.' Much the same could be said for waste, whose constructed nature inevitably changes as different countries experience different development trajectories.

A case in point is China. The spectacular growth of the Chinese economy in the 1980s created an immense need for cheap raw material for its manufacturing sector. Given the combination of a large demand in the production sector and low salaries, it made economic sense to import waste from other countries and transform it into raw material through labor-intensive recycling, often involving primitive and unhealthful methods. From the early 1990s onwards, China imported growing amounts of metal scrap, paper, cardboard and plastic, the latter driven by the rising domestic prices of oil and products made of oil (Minter 2013). During the next thirty years, China became the world's largest importer of plastic waste, importing up to 75 percent of all globally traded plastic waste, as well as the world's largest producer of plastic. In the process, it increasingly generated its own domestic plastic waste, so that by 2016, only around ten to eleven percent of its total plastic waste was imported (Ritchie and Roser 2018). As of

2018, the Chinese government refused all but 99.5 percent pure plastic waste, which effectively acted as a ban on plastic imports. As a result, industrialized countries struggled to find substitute disposal places, revealing in the process the extent to which they were unprepared to solve their own recycling problems, having for years relied on simply exporting it (Parker and Elliott 2018). Thus, in the course of three decades, diverging development pathways turned waste into raw material and back while connecting people in different parts of the world into an ambivalent web of shifting roles of victims, beneficiaries and perpetrators. This constellation is the rule rather than an exception. Similar asymmetries have in the past linked the rag trade between Victorian Britain and developing United States (Minter 2013: 79–80).

Thus, it is ahistorical and arguably simplistic to address increasing waste generation solely in terms of moral condemnation. Without doubt, sometimes outrage is in place, as when politically and economically vulnerable people are knowingly subjected to toxic waste (Clapp 2001). But other times, the circumstances seem more ambivalent. Due to its connection to increasing wealth, waste also has an inconvenient positive connotation. Traditionally, more circular economies that avoided waste production by reusing and recycling material many times, have been a function of poverty. People were committed to a system generating little waste not because of a higher understanding of environmental interactions or of loftier attitudes towards social justice but because they could not afford anything else. In this perspective, the ability to replace instead of repair have been experienced as a side effect of positive economic developments (Borowy 2015). The papers in this special issue seek to explore some of these complex connections between different times and places and their serious repercussions as well as their ambiguities.

The issue goes back to a workshop, held at the Center for the History of Global Development in October 2018, entitled *Waste between the 19th and the 21st century: The price of modernity or the sign of a misdirected development?* (<https://networks.h-net.org/workshop-report-waste-and-price-modernity-19th-21st-centuries>). This is the point of departure of this special collection, which addresses waste as a manifestation and component of global development by discussing various case studies from different parts of the world including North America, Europe, Africa and Asia as well as global organizations. Though local specificities differ substantially, collectively, all these papers show the evolving constructions of waste as a function of societal and socio-economic changes. These processes call into question perceived goals and, eventually, the very definition of central tenets of today's world such as 'development' or 'modernity.' By being an expression of how societies deal with the unwanted, waste serves as a prism that reveals the variety of shapes development can take.

As the papers show, development may encompass a deliberate effort to improve some sector of socio-economic conditions. This could mean tighter environmental regulations in the United States, designed to improve safeguards for public health, efforts of an international organization to foster waste-reducing production methods, or

ways to improve waste removal through privatization in Ghana. Development could also mean transformations brought about by industrialization and increasing consumer societies, such as the material, social and cultural changes accompanying population growth and urbanizations, the construction of a car factory in West Bengal or the spread of disposable sanitary pads in India. It could also mean the unexpected reunification of two Germanies after a division of several decades.

Another field of ambivalent interaction involves the tension between policy and technology. While non-existent waste management technologies could prevent authorities from issuing stringent regulations, at other times, changing regulations turned raw materials into potentially hazardous waste, forcing industry to restructure their production cycles. In some cases, particularly in countries of the Global South, conceptualizations of waste could change as a result of dramatic social changes in societies undergoing decolonization and rapid economic growth. This showed in India, where the increasing availability of disposable sanitary pads to Indian women clashed with archaic social stratifications and increased burdens on hygiene workers. In the process, questions of gender, caste and rural identity blurred categorizations of new vs. old and improvement vs. deterioration. It was also true for African countries, where pre- and post-colonial transformations shifted the responsibility for waste management between the private and the public sphere, vacillating between waste as a public burden, a private act of life competence and a commercial investment. In Germany, the end of the Cold War could turn waste from a good traded across borders to a dangerous liability to one government after the disappearance of the other.

Finally, the collection demonstrates the interaction of roles taken by governments and non-governmental actors. Sometimes, the relation could be adversarial, as when governments faced protesters in India or Germany, sometimes it could be one of cooperation. But more often it has been one somewhere in between, where waste forms the object of negotiations between governments and citizens, companies or international organizations regarding acceptable policy. Thus, the ambivalent nature of waste is reflected in the diffuse nature of policy responsibilities. Clearly, in all cases, different actors need to negotiate some form of cooperation in order to find conceptual and physical spaces for the leftovers of economic (and biological) metabolic processes.

Though the specifics differ, in all cases waste functions both as an object and as a reflection of underlying changes in society which, supposedly, were designed to make lives better, richer or more modern. Inevitably, waste issues got in the way of smooth and easy narratives.

Competing Interests

The author has no competing interests to declare.

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