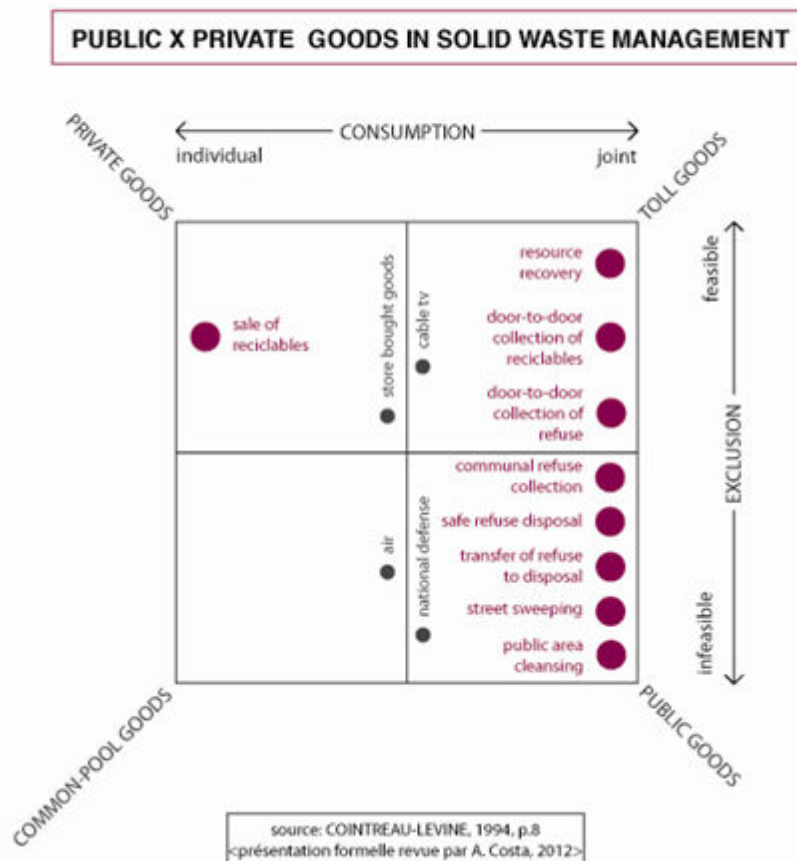


Managing Urban Waste as Common Pool Resources

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1. Introduction

In the experts' literature about solid waste management (SWM), the type of economic service that municipal solid waste management constitutes is not clear: Is it a public service? Or is it a market economy activity? SWM would both be « *a demand-driven business, a policy-driven activity and a public good* » (UN-Habitat 2010, 164). The problem is that SWM is composed of many different tasks, which can be unbundled. Whereas street sweeping may be considered as a public good, the door-to-door collection's status is not as obvious: it still can be assimilated to a public good, yet it is one of the services « *most easily converted to a private good, being divisible among consumers for services and payments* » (Baud et Post 2003).



In 1994, a World Bank report, aimed at targeting the potential private sector participation areas in the field of SWM in developing countries, an economic characterization of these successive tasks was proposed. Most of them were classified as public or toll goods. The sale of recyclables was presented as a private good. And the common goods box was left empty.

Contrasting with such an analysis, we argue that the idea of urban waste as commons may help us re-imagine urban policies beyond the State/market dichotomy that appears, in the Global South today, a structural axis of expropriation dynamics. Urban solid waste could fruitfully be conceived and managed as common pool resources. This would imply the attribution of use

rights to a diversity of valorization agents and devices, in so far as they agree to some regulation and to channel their own refuses to sanitary landfills.

2. Appropriation conflicts

By definition something thrown away, waste is an object that no longer belongs to anyone. Waste is what has been abandoned, i.e. *res derelicta*, things over which their former owners have renounced their property rights.¹

The so-called “modernisation” process of SWM provokes clashes between agents: some experts invoke “contested” waste (Fahmi & Sutton, 2010) whereas others talk of “competition” (UN-Habitat 2010, p. 8). We argue that such “*appropriation conflicts*” (Cavé 2014) over MSW arise, pitting a variety of actors against each other (municipal authorities, private operators, wastepickers, residents’ associations, industrial companies, etc.) because SWM is not any longer only concerned with neutralizing a nuisance, but also, increasingly, with recovering a valuable resource.

It is all the more required to provide conceptual and operational tools to manage urban waste as commons today that most cities (focused on collection and landfilling) do not recover any part of their garbage and that an increasing number of agents (including producers responsibility schemes and huge private companies) now show an interest in waste management and recycling as a way to catch cheap secondary materials, i.e. “urban mining”.

3. The urban solid waste deposit, an impure public good

The nature of waste is by no means intrinsic. A specific plastic package may be seen as a useless residue until there is a shortage, at which point it is re-qualified as a commodity: “*this is why what is waste today will not be waste tomorrow and why what was, common-sensically, waste yesterday is now incorporated as an economic ‘sector’*” (O’Brien 1999, 278). Precisely because of this fluctuating status, we suggest it is time to stop dealing with SWM issues in terms of the garbage/resource dichotomy, which ultimately implies a public/private good dialectic, and instead start considering urban solid waste holistically as a common good!

Firstly, from a spatial perspective, the most lucrative items are gradually extracted (‘creamed-off’) from the SW deposit through several stages of upstream interception. The fact that this urban service is provided on the streets (and not through an underground network), with successive offloadings, makes it possible and relatively easy for non-governmental actors to capture part of the flow. In other words, it is in practice impossible to exclude anyone from its appropriation.

Secondly, from an economic point of view, the diversion of recoverable solid waste constitutes a coveted objective for several actors. Far from being marginal or archaic, the informal recovery sector is embedded in the global industrial economy. The analysis of resale tariffs for used materials in Brazilian Southeast cities has indeed enabled us to demonstrate that the power of mechanisms aimed at catching dry waste rests on a non-elastic link to the global market demand of the corresponding virgin materials. In other words, the potential economic revenues from the trading of solid waste items are substantial. To this extent, waste is a rival good.

Being both rival and non-excludable, the urban solid waste deposit thus *de facto* appears as a common good. Neither pure resource, nor mere garbage, the urban solid waste deposit is always both.

¹ *Municipal authorities have the “responsibility” of dealing with waste; they do not own the waste.*

4. Would it be possible to manage urban waste as Common Pool Resources?

When considering the entire deposit of urban solid waste as Common Pool Resources (CPR, Ostrom 1990), a distinction can be made between waste flows and stocks. Recognising this flow-stock structure in the SW deposit enables us to penetrate further into the internal dynamics of a common good. Indeed, according to E. Ostrom, any resource system is formed by these two interdependent components. The flow refers to units that are removed from the resource stock. The stock refers to units that are not removed from the resource.

- One portion of the urban solid waste deposit is quickly recovered or purchased and never actually ends up in a landfill. This part that is sufficiently valuable not to be discarded can be equated with flows.
- The rest of the deposit is permanently abandoned, of interest only to the municipal authorities. That fraction of the deposit, of zero or negative value, corresponds to a stock. There is no spontaneous incentive for anyone to get involved in its circulation.

Mixed together, flows and stock constitute the solid waste deposit. Apprehending the urban waste deposit as a CPR implies nonetheless to revert the internal dynamics of such a system:

- in the CPR described by Ostrom, the stock is necessary to the flow's renewal;
- in the case of solid waste, it is the opposite: the flow goes along a stock that is potentially harmful and that, consequently, must not grow. However, no-one wants to appropriate that stock.

In other words, the danger does not lie in the stock's exhaustion, but rather in its uncontrolled growth and dissemination. Therefore, the risk that informal recovery agents are generating is that, by extracting the most lucrative section of the deposit, they throw off balance the municipal service and, consequently, put the sanitary disposal of residues at risk.

According to E. Ostrom, appropriators of CPR are faced with two kinds of problems:

- i. The first is rent dissipation. It refers, for instance, to the (economic) risk involved when separate door-to-door collection is implemented and the deposit is at the same time significantly creamed-off upstream. This problem could be solved through the "*way of attributing a fixed, time-independent quantity of resource units [to the various appropriators, so as] to reduce uncertainty and conflict over the assignment of rights*" (Ostrom 1990, 64).
- ii. The second problem consists in the attribution of spatial or temporal access to the resource, as reflected in the interception dynamics observed in Vitória and Coimbatore. According to E. Ostrom, these problems arise "*because spatial and temporal distributions of common resource units frequently are heterogeneous and uncertain*" (Ostrom 1990, 65).

Mobilizing use rights appears as a promising lead. Use rights have been theorized, within the resource institutional regimes (RIR) framework, as an analytical and operational tool. Use rights are realized in the privileged access to a flow of resource units. Unlike property rights, use rights determine "*who might have what use of which quantity of the resource, in the form of which goods and services derived from it*" (Gerber, Knoepfel, Nahrath & Varone, 2009, 7). Use rights thus refer to resource unit management and withdrawal rules that do not grant absolute freedom in the use of the resource². As a matter of fact, after a long and harsh struggle for the *recicladores* rights, the Colombian Constitutional Court has warranted a "*sure and safe access*" to SW to informal recovery agents (Auto 275/11).

² Close to the notion of "operational level" rights (where we find *access* rights to CPR as well as resource's units *removal* rights) (Schlager & Ostrom 1992).

5. Concluding remarks

Emanating from a combination of public and private law, use rights seem an appropriate prism through which to tackle CPR. Taking into account the multi-segmented nature of the SWM service and the economic value of part of the deposit – which make interceptions unavoidable – the assignment of targeted use rights could offer an innovative way to solve solid waste appropriation conflicts. Indeed, the main difference between attributing use rights rather than property rights is that it makes the appropriators accountable, towards a regulator, of the whole flow's traceability. Indeed, the informal recovery circuits do generate various kinds of refuse (solid, liquid, gaseous) that are today disseminated in the environment out of any supervision.

The inclusion of both stock (for minimization) and flows (for maximization) within the analytical framework of CPR, suggests the idea of a *semi-decentralized* SWM system. In such a system, non-governmental recycling initiatives would not be eradicated in favor of a monopolistic and centralized service focused on landfill solutions. Recovery agents would be incorporated as local players able to efficiently capture at source as much waste as possible. However, they would be included provided that they would channel their own waste residues to the centralized treatment facilities in order to cope with environmental and sanitary externalities. Hence, stock management would be centralized, and flow management decentralized.

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