

Background

Bangalore generates more than 5000 tons¹ of 'municipal solid waste'² (MSW) daily. Households, organizations and commercial establishments are the broad groups that generate waste³. Bruhat Bengaluru Mahanagara Palike (BBMP) is the primary agency mandated to provide waste management services in 198 wards of the city⁴. BBMP manages MSW collection through *pourkarmis*, private contractors and their contractual workers. Citizens and companies have also started providing waste management services in various parts of the city. While the informal network comprising of *waste pickers*, itinerant buyers and their organization have also been providing services in the city.

These formal, contractual and informal networks of waste collection and management services have different institutional dynamics and face various challenges. The informal network of *waste pickers*, with a floating population of more than 15000 people, stand at vulnerable position for a multitude of reasons. Most of them are migrants and belong to the *dalit* community, have minimal or no education, are poor and have minimal social and political capital. With increasing privatization and contractualisation of waste collection and management services, they are caught in the pincer movement. The waste picker 'own account workers'⁵ struggle in poverty and destitution, while they go on collecting,⁶ segregating⁷, storing⁸ and feeding it into the recycling⁹ chain for meager margins and without income security. They remain at the receiving end of exclusionary practices and bear the brunt of harassment and illegitimation of their work.

¹ (Livelihood program to strengthen the informal waste workers, 2012)

² Rule 3 (xv) of the Municipal Solid Wastes (Management and Handling) Rules, 2000 states "*municipal solid waste*" includes commercial and residential wastes generated in a municipal or notified areas in either solid or semi-solid form excluding industrial hazardous wastes but including treated bio-medical wastes;

³ Collectively referred to as 'generators'. Rule 3 (x) of the Municipal Solid Wastes (Management and Handling) Rules, 2000 defines generators as "*generator of wastes*" means persons or establishments generating municipal solid wastes;

⁴ S. 58 of The Karnataka Municipal Corporations Act, 1976 which defines *Obligatory Functions of the Corporations* makes it responsibility of the BBMP, interalia, to do (2) *the watering and cleansing of all public streets and public places in the city and the removal of all sweepings therefrom*; and (3) *the collection, removal, treatment and disposal of sewage, offensive matter and rubbish and, the preparation of compost manure from such sewage, offensive matter and rubbish*;

⁵ *own-account workers - employed in their own informal enterprises who do not hire others: either single person operations or family enterprises* (Sankaran & Madhav, February, 2012)

⁶ As per Rule 3(v) of the Municipal Solid Wastes (Management and Handling) Rules, 2000 "*collection*" means lifting and removal of solid wastes from collection points or any other location;

⁷ As per Rule 3 (xxi) of the Municipal Solid Wastes (Management and Handling) Rules, 2000 "*segregation*" means to separate the municipal solid wastes into the groups of organic, inorganic, recyclables and hazardous wastes;

⁸ As per Rule 3 (xxiii) of the Municipal Solid Wastes (Management and Handling) Rules, 2000 "*storage*" means the temporary containment of municipal solid wastes in a manner so as to prevent littering, attraction to vectors, stray animals and excessive foul odour;

⁹ As per Rule 3 (xix) of the Municipal Solid Wastes (Management and Handling) Rules, 2000 "*recycling*" means the process of transforming segregated solid wastes into raw materials for producing new products, which may or may not be similar to the original products;

These socio-economic inequalities promote insecurity, stress and anxiety.¹⁰ The unequal environment that *waste pickers* live and operate in, breeds hostility and frustration.¹¹

Rationale

The privatisation and contractualisation of waste valorisation¹² services in Bangalore have hit the *waste pickers* the hardest. As stated above, the *waste pickers* not only come from marginalised sections of society, they lack voice, access to resources including right to valorise waste, and lack participation in MSW planning and management. Their condition is further marginalised, while they have traditionally been playing an important and indispensable role in MSW management in the city, thereby earning their livelihood. Fluctuation in market prices, lack of storing and sorting space, harassment by state machinery, denial of access to waste, privatisation and contractualisation of waste collection and management services. These necessitate their integration into the city's Municipal Solid Waste Management system (MSWM). Equitable distribution of valorisation rights can foster social cohesion, help the *waste pickers* survive and could grant stability to them by integrating them in the municipal solid waste management system of the city. Since the *waste pickers* earn on a day to day basis depending on their collections, this would also ensure income security of the *waste pickers*; which not only fluctuates due to an interplay of aforementioned reasons, but also as the *waste pickers* may earn nothing on days at end. Regular and sustained income and security of tenure, access to quality recyclable waste and assurance that they will be earning continuously goes a long way in securing them a livelihood and earnings. This would uplift them from poverty and help in creating better social ties.

Prime Stakeholders

Generators of Waste: Households and commercial waste that generate waste are collectively referred to as the *Generators of Waste*¹³. Their prime interests can be articulated as a waste collection system that provides them efficient, regular and timely services. A system that pays them fair prices for their recyclable wastes, weighs the recyclable waste correctly, collects waste from their door steps on a regular, preferably daily basis, would be preferred.

Pourkarmis: The permanent and contractual employees of BBMP including sub-contracted workers who get paid a fixed amount for waste collection from waste generators and carrying it to the designated local dumpsites. They would prefer a waste

¹⁰ (Duclos, November 2006)

¹¹ (Duclos, November 2006)

¹² Valorization includes *the entire process of extracting, storing, collecting, or processing materials from the waste stream in order to extract and divert value and direct the material to a value added stream* (Scheinberg, Wilson, & Rodic, 2010)

¹³ *supra* note 3

collection system that provides them with an opportunity to earn extra income through sale of recyclables in the waste.

Ward Councilors: They form an important link between the citizens and government and are politically responsible for management of public services in their respective wards. Since their election to the office of Ward Councilor itself depends on their having mass support in the ward, they would prefer an efficient waste management system to legitimize their image. They are the key persons to liaison between government and other stakeholders. Further, they have a say in deciding the location of local dumpsites, mode and model of waste collection services etc.

Waste pickers: They form part of the informal workforce that has been carrying out waste valorization services in the city. They would prefer a system that legitimizes their work, provides them with unhindered and legitimate access to waste, a system that promotes basic segregation of waste, income security, and fair dealings from both waste generators and people up the waste recycling value-chain. Better prices for their segregated waste, storage and sorting space, absence of harassment, better and secure sorting and storing space, hygienic work environment, access to credit, training facilities, linkages up the recycling value-chain are other important factors.

Present Scenario

Waste collection and disposal services in the city is presently managed and operated by two distinct systems. The formal – comprising of *pourkarmis*, BBMP Contractors and their workforce. The informal – comprising of the ‘own account worker’ *waste pickers* who have organized themselves in various models to provide valorization services. On the directions of Honorable Karnataka High Court¹⁴ and with the issuance of certain circulars¹⁵ by the BBMP, it is mandatory for each ward to set up a Dry Waste Collection Centre (DWCC) and for the waste generators to hand over their segregated waste to designated collection agencies. Further, the Municipal Solid Wastes (Management and Handling) Rules, 2000¹⁶ (MSWM Rules 2000) circulars and other documents also envisage door to door collection of waste and integration of *waste pickers* in the solid waste management system of the city.

Alternate Models

With an aim to integrate *waste pickers* in the municipal solid waste management system of the city, and to provide them with income security few models are being working in different parts of the city. DWCC are the centers where these models can be implemented, as in accordance

¹⁴ W.P.Nos.24739-49/2012 - filed in the Hon'ble Karnataka High Court

¹⁵ Circular No.: A/PSR/509/11-12 Dated 25/06/2011 issued by the Office of the Commissioner, Bruhat Bengaluru Mahanagara Palike and Circular No. ಸಂಖ್ಯೆ: ಅ.ಆ(ಪ್ರ.ಶ್ವಾ.ನಿ)/ಬಿಆರ್/77೮ /12-13 Dated 13/09/2012

¹⁶ The central legislation that mandates and sets norms for waste management and disposal in Indian cities

with the circulars, rules and High Court guidelines these places have to collect and segregate waste at ward level. Two of the models (Model A and Model B) in which *waste pickers* have organized themselves are compared with an alternate model that is proposed to integrate various stakeholders in the operation and management of the DWCC.

Model A – Waste pickers Operated and Managed DWCC

In this model, the DWCC is operated and managed by the *waste pickers* themselves. They go for door-to-door collection, buy the recyclables from the *Generators of Waste*, sort and store it and then sell it off to the Scrap Dealers all by themselves. In this model, the *waste pickers* arrange the finances themselves - for owning collection-vehicles, instruments and other paraphernalia, payment of salary to the manager/accountant of the facility, day-to-day working capital requirements etc. They decide on the route, select the *Generators of Waste* from whom they would collect waste, collection frequency, timing, rate to be paid to the *Generators of Waste* for the recyclables¹⁷ etc. The waste pickers will share the profits in the facility after paying for operations, management and administrative expenses including fixed minimum remuneration to the *waste pickers* working in the facility. There is regularity of services and the *waste pickers* vie for increasing reach and collection in the facility as that would increase earnings of the *waste pickers*. This would also ensure better and higher waste collection and valorization. However, the facility may also run into financial difficulties, as the sole source of finance for is the *waste pickers* themselves. There does not exist institutionalized training facility for the various stakeholders on how to manage and sort waste, nor is there an incentive system for better segregation etc. Since the finances of the facility are dependent on the *waste pickers* themselves, who have limited resources and access to formal credit facilities, it may restrict their operation and expansion. These may jeopardize income security of the *waste pickers*.

Since dry waste¹⁸ has to be handed over to the operators of the facility¹⁹ in the ward, *pourkarmis* cannot access recyclables that would earn them extra income. While they are mandated to manage wet waste²⁰ which does not earn them extra income. They resist such a system and vie for the recyclables to earn extra. The *Generators of Waste*, who generally are better placed in society, look forward to the services offered but do not have much say in the rates of the recyclables, nor can they enforce route and timings of collection. In addition, they do not have a say in management of the facility. The Ward Councilors are not actively involved in management of the facility, though their legitimacy is also dependent on smooth functioning of

¹⁷ Though the generator of waste has say in these and heavily influences them, but the final decision is made by the waste pickers themselves

¹⁸ Includes non-biodegradable recyclable waste like bottles, various kinds of paper and plastic, aluminum cans etc.

¹⁹ As per Rule 3 (xvi) of the Municipal Solid Wastes (Management and Handling) Rules, 2000 "operator of a facility" means a person who owns or operates a facility for collection, segregation, storage, transportation, processing and disposal of municipal solid wastes and also includes any other agency appointed as such by the municipal authority for the management and handling of municipal solid wastes in the respective areas;

²⁰ Includes biodegradable waste, kitchen and garden waste, road sweepings etc.

the facility. Further, there does not exist a formal and institutionalized negotiation platform for various stakeholders.

Model B – Waste pickers Managed DWCC

In this model also, the *waste pickers* manage the facility. However, they do not carry on door-to-door collection. The door-to-door collection is carried on by the *pourkarmis*. The facility acts as sorting and storage space. Thus providing aggregation and risk management services. *Waste pickers*, who buy mixed recyclable waste from *pourkarmis* for a fixed rate, manage the facility sort the waste into various categories, aggregate it and then sell it off at varying rates depending on the current market rate of the sorted item. The waste pickers decide the rate for mixed recyclable waste. However, the *pourkarmis* have some say in the prices. In this model also, the *waste pickers* arrange the finances themselves - for owning transport-vehicles, instruments and other paraphernalia, payment of salary to the manager/accountant of the facility, day-to-day working capital requirements etc. They do not plan and decide on route, timings etc. of collection and it is left to the *pourkarmis*. The regularity of service to the *Generators of Waste*, timing, reach etc. is also decided by the *pourkarmis*. There does not exist institutionalized training facility for the various stakeholders on how to manage and sort waste, nor is there an incentive system for better segregation etc. Since the finances of the facility are dependent on the *waste pickers* themselves, who have limited resources and access to formal credit facilities, it may restrict their operation and expansion. These may jeopardize income security of the *waste pickers*.

Since dry waste is handed over to the *pourkarmis*, *waste pickers* lack control over what is collected, how good is segregation etc. Many a times the waste is not properly segregated and wet waste is mixed with the dry waste, which reduces the prices of recyclables, makes it tough to segregate post collection and does not earn the *waste pickers* extra income. The *waste pickers* have to toil more and do not have control over quantity and quality of waste collected. The *pourkarmis* are free to sell it off to other source. This increase completion and forces *waste pickers* to give better prices, reducing their margins. Further, the *waste pickers* may have to extend advances to the *pourkarmis*, thereby further reducing their own cash in hand²¹, and tying them over to the *pourkarmis*, while the *pourkarmis* are free to deal with others²². The *Generators of Waste*, who generally are better placed in society, look forward to the services offered but do not have much say in the rates of the recyclables, nor can they enforce route and timings of collection. These are dependent on the decisions made by the *pourkarmis*. In addition, they do not have a say in management of the facility. The Ward Councilors are not actively involved in management of the facility, while their legitimacy is also dependent on

²¹ Cash in hand plays a crucial role as the waste pickers not only have to tie over day- to-day expenses of running the facility, paying for the purchases etc. but also for meeting their own personal expenses

²² In normal circumstances, the lender has control over the borrower, but in the present situation, *pourkarmis* are better placed and have more negotiation powers thereby tying the waste pickers.

smooth functioning of the facility. However, the counsellors exert considerable influence on the working and location of such facilities within their respective wards. Further, there does not exist a formal and institutionalized negotiation platform for various stakeholders.

Model C – Collectively Run DWCC

In this model, the *waste pickers* will run the facility and operate it on a day-to-day basis. Door-to-door collection would be primary responsibility of the *waste pickers*. *Pourkarmis* will also assist in the door-to-door collection. The *waste pickers* will carry on sorting, and the facility will act as sorting and storage space. Thus providing aggregation and risk management services. The facility will be jointly managed by *generator of waste* representative, *waste pickers* and representative of the *pourkarmis* in the ward and the Ward Councilors (ex-officio member). Since the stakeholders will jointly manage the facility, concerns of all the stakeholders will be addressed. The waste pickers and the generators of the waste will jointly fund the finances for the facility. This would enlarge the base for funds and deal with limited resources that are available with the *waste pickers* themselves. This will also create a sense of ownership in the *Generators of Waste*. The added availability of funds would help in procuring transport/collection-vehicles, instruments and other paraphernalia, payment of salary to the manager/accountant of the facility, day-to-day working capital requirements etc. Since the *Generators of Waste* would also be represented in the management of the facility. There will be joint planning and decision on route, timings etc. of collection and it will no longer be left to the sole discretion of one stakeholder only. The regularity of service to the *Generators of Waste*, timing, reach etc. would also be ensured, as there would be monitoring by the Ward Councilor and the generator of waste representative. Since the various stakeholders will be represented in the management of the facility institutionalized, training facility on how to manage and sort waste, incentive system for better segregation etc. would also exist. Since the finances of the facility are no more dependent on the *waste pickers* only, who have limited resources and access to formal credit facilities; it will not restrict their operation and expansion. The profits of the facility will be shared by the *waste pickers* and *pourkarmis* after paying for operations, management and administrative costs including fixed remuneration to the *waste pickers*. Since the management will have representatives from the *Generators of Waste* also, they would have a say in the rate of the recyclables.

Since there would be direct handling of recyclable waste by the *waste pickers* they would have a say on what is collected, how good is segregation etc. The problem of improper waste segregation can also be tackled. The *pourkarmis* would be discouraged from selling the recyclables to other sources and thus reduce diversion of waste from the DWCC, and decrease rivalry between *waste pickers* and *pourkarmis*. Further, advances could be made more judiciously to *waste pickers* and *pourkarmis* as they would jointly manage the facility. The *Generators of Waste*, who generally are better placed in the society, they will be encouraged to throw their weight around the facility and assist in tiding over emergencies. Since the Ward

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Councilors exert considerable influence on the working and location of such facilities within their respective wards and can represent the concerns before appropriate forums including BBMP. Further, there would thus exist a formal and institutionalized negotiation platform for various stakeholders. However, since the stakeholders have different, and at times competing, motives aligning them would be a major challenge.

Assessment and Comparison between Various Models

Power exerted by various stakeholders

Judging on the parameters of 'power', Ward Councilors would rank the highest amongst the stakeholders and has huge influence over allocation of land to DWCC, allocating a DWCC to be run by *waste pickers* etc. even though they may not be involved in the day to day functioning of the DWCC. They may also influence attitude of people towards the *waste pickers* and services provided by them. Thus, the Ward Councilors are assumed to have six points on the scale of ten in the power index.

Next would be *Generators of Waste*. Who, because of their socio-economic standing and capital, have considerable influence, though they may be clients of the services provided by the *waste pickers* and *pourkarmis*. Thus, the *Generators of Waste* are assumed to have five points on the scale of ten in the power index.

The *pourkarmis* are assumed to have three points on the scale of ten in the power index. The *pourkarmis*, in general, also come from social background similar to that of the *waste pickers*. However, since they have a job and some security of earnings, they are better placed than the *waste pickers*. Moreover, the *pourkarmis* have organized themselves into unions/organizations to air their concern, which also better places them *vis a vis* the *waste pickers*.

Waste pickers are assumed to have of two on the scale of ten in the power index. As noted earlier, most of them belong to the *dalit* community having low social capital, many of them are migrants and generally, they do not constitute vote bank for the local politicians. Further, they lack economic and technological wherewithal.

Assessment of the models on the parameter of horizontal equity

Model A is most beneficial to *waste pickers*. Since the *waste pickers* go for door-to door collection and are able to decide on route, timing, frequency etc. thus they have the highest say and control over the waste management system in this model. *Generators of Waste* gets two on the scale, as they would benefit from regularized and timely collection, which the *waste pickers* would ensure for their own benefit. The policy is least beneficial for the *pourkarmis*, as they do not get access to recyclable waste having market value. The policy is also not very equitable to Ward Councilors as *waste pickers* run and manage the show. Moreover, the Ward Councilors do not have much control over the way the DWCC functions on a day-to-day basis.

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Model B is most beneficial to the *pourkarmis* as they have access to waste and are the key players and deciders. The policy is least beneficial to the *waste pickers*, and they get ranking one, as neither do they have direct access to waste nor do they have much control over what is being sold to them. The policy is also not much beneficial to *Generators of Waste* as mixed waste that is being handed over to *pourkarmis* does not fetch them benefits, apart from the fact that it is removed from their vicinity. Further, the *Generators of Waste* does not have much control over *pourkarmis* since they are generally organized and work under the supervision of their contractor. However, since the *pourkarmis* are employed by the BBMP, the Ward Councilors become accountable for the services provided by the *pourkarmis* and may exert their influence in their appointment and functioning as *pourkarmis* thus, they are ranked two on the scale.

Model C is most beneficial for Ward Councilors and *Generators of Waste* as they can take active part in management of the DWCC, thereby keeping their vicinity clean and the services regular and timely. Further, they can also have a say in the rates, routing etc. of the waste management services provided. The Ward Councilors and *Generators of Waste* thus get three on the scale. The *waste pickers* and *pourkarmis* get two on the scale as both of them are also represented in the management and can have their say. Further, they have access to waste and can collectively decide rate, route, timing etc.

Assessment of the models on the parameter of vertical equity

Model A provides maximum benefit to the *waste pickers* as they can buy all the recyclable that is generated by the households, commercial enterprises, which can substantially increase their earnings. Further, they being the sole collectors of recyclables also provides them income security. *Generators of Waste* are next in the order as regular and timely service coupled with fair price for the recyclables and door-to-door service. Ward Councilors also benefit from regular and timely services as it keeps their ward clean and increases their legitimacy. *Pourkarmis* benefit the least from this model as neither can they claim access to waste it nor do they get much recyclables in the waste collected by them as the waste handed over to them has been pre-segregated and the recyclables handed over to *waste pickers*, thereby reducing their chances of earning from selling recyclables.

Model B delivers maximum benefits to the *pourkarmis* as they go on collecting waste from the *Generators of Waste*. Further, since they sell the recyclables collected from the mixed waste, they earn extra money out of it. *Generators of Waste* and Ward Councilors also benefit from regular waste cleaning from their area. *Waste pickers* derive least benefit from this model.

Model C provides maximum benefit to the *Generators of Waste* as not only waste pickers service them in a routine and timely fashion, but they can also push for better rates, timing, route etc. *Waste pickers* are the next beneficiaries as increased access to capital, social legitimacy and support in addition to access to waste, partnership with *pourkarmis* and opportunities for training

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will benefit them. *Pourkarmis* would also benefit from this partnership as they would have access to training, can sell recyclables to DWCC and will also get a share of the profits, if any, earned by the DWCC. The Ward Councilors will not derive much benefit out of this model, but it would add to their workload.

Recommendation

Since Model C, scores the highest, creates formal platform for all the prime stakeholders to negotiate, provides economic and social backing to the operations of DWCC and *waste pickers*. Fosters a synergy between the competing actors (*waste pickers* and *pourkarmis*) who are vying for the same recyclables, seeks to distribute profits of the DWCC amongst all, and provides social legitimacy to the *waste pickers* and longevity to the operations. These all provide income security to the *waste pickers* thus, Model C is the best option to be adapted.

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