PUNE, INDIA

Waste Pickers Lead the Way to Zero Waste

By Neil Tangri

Rally for dignity. (photo: Amit Thavaraj © KKPKP/SWaCH)

Over the last 20 years, Pune's waste pickers[1] have created a remarkable transformation in their city's municipal waste management system and in their own lives. These informal sector collectors of recyclable materials formed a union to protect their rights and bring dignity to their work. The union has been so successful that it has allowed them to implement door-to-door collection, source separation, and separate treatment for organics, all while improving waste picker livelihoods and working conditions. Now, the waste pickers' own cooperative is pioneering a wider-reaching and more rigorous zero waste program.

PUNE

Maharashtra State, India

Area: 700 km²

Population: 3,115,431

Population density: 4451/km²

Average annual rainfall: 2,751 mm

Altitude: 560 meters above sea level

Average temperature range: 11°C to 37°C

Waste generation: 0.3 kg/capita/day

Avoided costs to city: US $2.8 million per year

Like most Indian cities, Pune has long had an informal waste management system operating in parallel with an overburdened municipal system. Residents were obliged to place their waste in roadside containers made of steel (also called dumpsters or skips)—each capable of holding several cubic meters of waste—which were supposed to be emptied daily. In practice, the city only emptied about 40 percent of them each day, transporting the waste to the dump. As a result, overflowing containers was a common complaint of residents.

The containers did provide a livelihood for waste pickers, who would look through them for recyclable materials, which they bundled and sold to middlemen (*kabariwalas*). However, some of the more valuable material never made it to the roadside bin because house-maids or security guards would lay claim to it and sell it to itinerant scrap buyers. Other waste pickers worked at the landfill. Under the most noxious conditions, they recovered recyclables from what the city dumped there. All of this material was sorted, cleaned, and sold to industry, through a series of middlemen, for eventual recycling.

In Pune, 92 percent of waste pickers are women, almost all from the lowest, or Dalit, caste. Thirty percent are widowed or deserted, and another 50 percent are the primary breadwinners for their families. Before the union, they moved mostly on foot, covering a distance of up to 12 km per day with headloads of up to 40 kg. Some traveled by train or truck to the villages and industrial areas around the city. They left their homes at sunrise and returned at sunset after working a 10 hour day. The average daily earning was ₹60 (US $1.12).

The occupation was extremely hazardous. Forced to use bare hands to rummage through putrefying garbage containing glass shards, medical waste, dead animals, toxic chemicals, and heavy metals, waste pickers collected bits of reusable, repairable, and marketable materials. Many sustained repeated injuries, illnesses, and diseases as a result of their work. Tuberculosis, scabies, asthma, respiratory infections, cuts, animal bites, and other injuries were common.

Other potential dangers in the city's dumps included injury from falling items—or even avalanches—in the mountains of waste, or being hit by moving vehicles when scrambling to get to the materials being dumped. In addition, there were frequent squabbles between

Mangal Gaikwad lives in a slum in Aundh, Pune. The difference that her involvement in doorstep collection and in the Union made to her life is presented in her own words. "Today I earn ₹3000 [US $56][2] from doorstep collection and the sale of scrap. The residents in the area who used to frown at me while I was at the garbage bin, now know my name and greet me. A resident gave me a second hand bicycle. I had never ridden one before. Today, I ride to work on that cycle. When I was a child I used to envy the children who went to school with their bags and water bottles while I had to go wastepicking. Since my work day is shorter now I was able to attend the literacy class in my slum. I am now literate. I am the Treasurer of the credit cooperative and the representative for my slum. I used to be terrified of my abusive alcoholic husband. Twice I sent him to a deaddiction centre. He stopped for a while but continues to drink. I am no longer terrified of him. I do not give him money to drink. I have bought a bigger house for ₹65,000 [US $1200] from my savings and a loan I took from the credit cooperative."

waste pickers over territory, and they had to compete from the bottom of a hierarchy of domestic workers, sweepers, and others who had first claim to any materials of value. **Without rights to the garbage they lived on, the lives and livelihoods of waste pickers were very insecure.**

As bad as the physical conditions of work were the social conditions. Without any right to the garbage they sifted, waste pickers were often accused of theft. They frequently had to pay bribes to police and municipal workers; they were vulnerable to sexual assault; they were viewed with distaste, or worse, by most of the rest of society; their children were refused admission in schools; etc. Nevertheless, they preferred waste picking to construction or domestic work—the other principal occupations open to them—because it afforded greater independence, flexibility, and relative freedom from the feudal and often sexually exploitative relationships prevalent in those fields.

A Waste Pickers' Union

In 1993, with the encouragement of activists associated with a local university, some 800 waste pickers attended a citywide convention to give voice to their grievances. They resolved to engage in collective, nonviolent struggle to improve their conditions; thus was born Kagad Kach Patra Kashtakari Panchayat (KKPKP), the first waste pickers' union in India. **From the beginning, the union was established with a larger goal of fighting for social justice, and against social, economic, cultural, and political exclusion.** In particular, it has a strong focus on caste, class, and gender issues.

> Until now we were counted among the animals; Baba Adhav [one of the KKPKP organizers] has brought us to sit here as humans.
>
> – Hirabai Shinde, KKPKP member

KKPKP's membership rapidly grew to include 6,400 of the 7,000 waste pickers in Pune as it tackled a number of issues of concern to its members. One of their first victories was to confront police officers who had taken bribes and sexually propositioned waste pickers. Faced with several thousand waste pickers—who were starting to garner the support of politicians wanting their votes—the police backed down and returned the money taken. The success of this experience encouraged KKPKP to tackle even more issues. In 1995-96, they won official recognition from city government, which issued them identity cards—something that in practice protected them from police harassment but was also a tangible representation of their improving status in society.

In 1997, KKPKP created a credit cooperative with the participation of over 2,000 members; this freed the waste pickers from their dependency on usurious moneylenders. **Another crucial milestone was achieved in 2003, when the municipality took the unusual step of paying health insurance premiums for KKPKP members in recognition of their financial and environmental contribution to the city–the former calculated at €3 million (US $3.85 million) per year.**

KKPKP meeting. (photo: Amit Thavaraj) © KKPKP/SWaCH

KKPKP realized early on that changes in the waste management system could deliver important benefits to waste pickers. If residents separated their waste at source and waste pickers retrieved it from individual homes through door-to-door collection, both would benefit: residents would have a convenience service while waste pickers would spend less time sorting waste and recover a higher percentage of saleable materials (since cross-contamination reduces the quality and amount of recyclable materials). However, getting residents to source separate their waste also created opportunities for middlemen and private companies to step in and claim those recyclables. When the Pune Municipal Corporation (PMC) considered handing the entire waste collection process over to a private company, KKPKP was compelled to act to prevent its members from being completely displaced.

From Scavengers to Service Providers–SWaCH Operations

For several years, KKPKP encouraged its members to establish door-to-door collection routines; many did so, and benefitted from the small service fees residents would pay as well as access to cleaner, better-separated recyclables. In 2008, KKPKP formed a cooperative, Solid Waste Collection and Handling (SWaCH),[3] to regularize and expand this practice. Its aims are to guarantee members' access to recyclable material, to improve their working conditions and earnings, and to transform the status of the occupation from scavenging to service provision.

As of May 2012, SWaCH's approximately 2,000 members were providing door-to-door collection for more than 330,000 households, or 47 percent of the city, in both institutional campuses and in ordinary neighborhoods, on a contract basis. Its coverage continues to expand as more residents sign up for its services.

The uniformed co-op members generally use a pushcart to collect waste from each house.[4] Residents are supposed to source separate their waste, but compliance is modest: about 30 percent do rigorous wet/dry separation, and another 60 percent sort out some recyclables but mix other dry waste with the organics. The waste pickers do a secondary sort of dry waste, using the 19 sorting sheds provided by the PMC to pull out recyclable material from the non-recyclable. The sheds are critical for keeping the women and waste sheltered from the weather.

SWaCH members collecting waste. (photo: Mariel Vilella)

The members then sell their recyclables either to private scrap dealers or to one of KKPKP's own scrap shops, where they are assured of fair prices. Non-recyclable dry waste is put in roadside containers which are collected by the municipality; but because of higher recovery rates, fewer containers are needed than before SWaCH—in its first two years, the municipality was able to take 64 of them off the streets.

The transition from waste picker to service provider has not been easy. It has required new attitudes and behaviors from both waste pickers and residents; but these changes have been mutually reinforcing. The waste pickers have had to learn to be punctual, regular, and cordial in their work, and to professionalize their appearance. The residents have learned to treat them as workers and human beings. This change in

Composting operations on the Pune University campus. (photo: Mariel Vilella)

the waste pickers' social status and self-perception is one of the most dramatic results of their organizing.

Tackling Organics for the Public Good

Traditionally, waste pickers have not been interested in organics (i.e., "wet" waste), as it had little commercial value. But organic waste is a major pollution issue: when buried in landfills, it generates toxic leachate, bad odors, and methane—which can cause landfill fires. And since it comprises more than 70 percent of Pune's waste stream, no waste management system can claim to be complete without tackling organic material. SWaCH has begun to prioritize proper organics management, but several other entities—public and private—are also processing organic waste, and not all the approaches are successful or compatible.

Pune has 15 biogas plants which process about 75 tons per day (tpd) of organics. The methane produced is burned in a generator to power street lights. This is widely considered the best treatment for organic waste, since it not only avoids the major problems associated with organics but also produces energy, and has minimal byproducts; even the slurry is usable as compost.

But the biogas plants are very sensitive to the introduction of plastic or hard-to-degrade waste (including coconut shells, mango seeds and other woody organic matter), which frequently plug up the plants and take them out of operation. So the biogas plants limit their intake to mostly source-separated organic material from restaurants, which is relatively clean. Only one plant accepts organics from SWaCH, which struggles to get residents to fully source separate their waste.

Some of the organics that SWaCH collects from households go to centralized composting operations: Disha, a local NGO, operates one large (100 tpd) composting plant, and the municipality operates a few smaller ones. Again, contamination is a problem; although composting can tolerate higher levels of contamination than biogas, the resulting compost is of poor quality.

Most of the city's organics are not effectively separated and end up in mixed waste at a commercial facility where they are processed into two different products: low-grade compost and refuse derived fuel (pellets). Both are significantly contaminated with plastics and other toxins like mercury from lightbulbs, batteries, etc. These contaminants are released, and some new ones are created, when the pellets are burned.

In some communities, SWaCH offers a more environmentally sound alternative. Its philosophy is to deal with the organics as close to the point of generation as possible. SWaCH members, in addition to providing door-to-door collection, operate composting facilities at 40 apartment buildings and institutional campuses. These often take the form of simple compost pits, but some are more elaborate, with grinding machines and bacteria additives that speed up the composting process. SWaCH members only operate the facility; the resulting compost is owned and used by the community or institutions that generate the organic waste. **Since residents can see where their organics are being composted, and see SWaCH members cleaning the**

organics, they are far more rigorous in their source separation–which results in better quality compost. Apartment buildings operating on-site compost pits receive a five percent rebate on their real estate taxes, which far exceeds the cost of employing SWaCH members to maintain the compost pits.

Although on-site composting has the potential to solve the organics problem, the program is threatened by the introduction of burn technologies. In addition to the existing refuse derived fuel plant, the municipality has signed a contract to deliver 700 tpd to a new gasification plant. Since the company building the plant has no track record and Pune does not generate sufficient waste to supply the plant, the implications of this contract are unclear.

Table 1. SWaCH Waste Management (tpd)

	Dry	Wet	Total
SWaCH collects	180	420	600
For recycling	90		90
For compost and biogas		123	123
For disposal	90	297	387
Diversion %	50	29	36

Table 2. Organics Treatment in Pune (tpd)

SWaCH-operated compost facilities	2.5
Disha compost facility	100
Other composting facilities	5
Biogas	75
Refuse-derived fuel	1000

Note: Not all of these organics are collected by SWaCH.
Source: Personal communication, Aparna Susarla, SWaCH.

SWaCH Member Income and Organizational Finances

SWaCH members earn most of their income from two sources: the sale of recyclables and the service fee paid by residents. Some may supplement their income with other work, such as street sweeping, but waste work is generally preferred as it is more lucrative. Incomes vary significantly, depending on the route, among other factors: wealthier neighborhoods tend to generate more saleable recyclables and also pay a higher service fee; but they are also more spread out, which increases transportation time and costs. Households pay a monthly fee, between ₹10 (US $.19) and ₹30 (US $.56) (higher in wealthy areas) for the door-to-door collection service; those who do not pay are cut off. Institutions and housing societies pay SWaCH, which then passes the money on to members. Private households often pay the waste pickers directly.

SWaCH takes five percent of the service fees as an administrative fee, which goes into building an operational reserve. In addition, SWaCH receives financial support from the PMC, which allows it to pay professional salaries and support positions that bring added value to the work, for example by doing extensive data collection.

SWaCH members generally earn between ₹4,500 (US $84) and ₹6,000 (US $112) per month, with more than half coming from the sale of their recyclables and the rest from collection fees; this is two or three times what most waste pickers earned before SWaCH. In addition, they often get other perquisites from the households they service: secondhand clothing, food, and access to water and toilets; SWaCH provides health insurance and some educational benefits, such as school books for their children.

Web of Accountability

SWaCH operates within, and is successful because of, a web of relationships that provide accountability to the major stakeholders in waste management. As a mass movement that can bring thousands of waste pickers, and sometimes other allied groups, into the streets, KKPKP has the ability to put pressure on local legislators who in turn can pressure the PMC. But SWaCH also has to maintain a regular, dependable service or face the ire of local residents, who have their own political influence and ultimately pay the taxes

A KKPKP Scrap Shop. (photo: WIEGO)

on which the PMC depends. **Over the years, the waste pickers and the municipal government have developed a strong working relationship; but it fundamentally rests on both SWaCH's provision of a quality waste collection service as well as KKPKP's ability to apply pressure through large street protests and media coverage.**

The PMC subsidizes SWaCH—both directly and by providing equipment—but also takes the heat if there are problems. This system of checks and balances is not static; it is regularly tested and constantly exercised. Ultimately, the working arrangement with the PMC is essential for the functioning of SWaCH's entire program.

Further Growth

SWaCH and KKPKP continue to grow and experiment with new approaches. In May 2012, SWaCH launched a zero waste program that encompasses several neighborhoods in an attempt to bring disposal rates as low as possible. The key will be residents truly complying with source separation mandates. This will dramatically reduce the disposal rate by diverting organics, and will generate a clean stream of organic materials for composting and biogas. SWaCH members will need to educate residents and enforce the source separation rules.

Another goal is to increase coverage and integration of waste pickers into SWaCH. Currently, less than a third of the city's waste pickers are SWaCH members; some continue to do door-to-door collection on their own, without the SWaCH umbrella, and are reluctant to contribute five percent of their income to SWaCH. And there are many neighborhoods—where neither SWaCH nor independent collectors operate—that still need door-to-door collection and source separation.

Towards Inclusive Zero Waste

Over 20 years of organizing, KKPKP and SWaCH have achieved remarkable accomplishments. Waste picker incomes have risen from approximately ₹60 (US $1.12) to ₹150 (US $2.80) per day. One of the city's most marginalized and vulnerable populations has become integrated into society. Residents have benefited from improved waste management services at lower costs. The current program saves the city an estimated US $2.8 million per year.[5] Better treatment of organics reduces emissions of methane, an important greenhouse gas. Higher recycling rates translate to energy savings, reduced climate impact, and less pressure on natural resources such as forests.

SWaCH representative talking with waste pickers. (photo: Amit Thavaraj) © KKPKP/SWaCH

As SWaCH grows, the quantity of waste needing disposal will continue to fall. This will mean fewer waste containers in the streets, lower disposal fees, and less waste being burned—all of which will add up to environmental improvements and lower expenditures for the city.

Sources:

Chikarmane and Narayan, "Organising the Unorganised: A Case Study of the Kagad Kach Patra Kashtakari Panchayat (Trade Union of Waste-pickers)," WIEGO 2005.

Chikarmane et al., "Study Of Scrap Collectors, Scrap Traders And Recycling Enterprises In Pune," International Labour Organisation, 2001.

Cushing, "Waste-to-energy or Wasted Opportunity? Informal sector recycling for climate change mitigation in India," Master's Thesis, Energy and Resources Group, University of California at Berkeley, 2010.

Interview, Malati Gadgil, CEO of SWaCH, 29 April 2012.

Scheinberg et al., "Economic Aspects of Informal Sector Activities In Solid Waste Management," GTZ 2010.

Endnotes:

1 "Waste picker" is the term used in English by the KKPKP to refer to those workers in the informal economy who recover recyclable materials from trash. A variety of terms are used in different languages and locations around the world.

2 US dollar figures are based on exchange rate of US $1 = ₹53.635 as of 12 May 2012.

3 "SWaCH" means "clean" in Marathi. In addition to its operations in Pune, SWaCH has a contract with the neighboring municipality of Pimpri-Chinchwad. The operations are rather different, however, and this case study focuses on SWaCH's Pune program.

4 In neighboring Pimpri-Chinchwad, where SWaCH also operates, the cooperative operates small trucks to collect the waste.

5 Scheinberg estimates avoided collection and disposal costs at €2.2 million per year; PMC pays SWaCH about ₹400,000 per month. Not included are additional PMC expenses, such as the provision of protective gear to SWaCH members.

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This case study was originally published as part of On the Road to Zero Waste: Successes and Lessons from around the World (GAIA, 2012). On the Road profiles nine diverse communities, each providing a real-world example of authentic progress toward the goal of zero waste. None has yet achieved this goal, and a few still employ practices that are incompatible with zero waste, such as incineration. Nonetheless, each community has achieved considerable success with one or more elements of zero waste and has something to teach us. For more case studies, visit: www.no-burn.org/ZWcasestudies.