

#15 NO PLACE LIKE HOME: GENDER AND CAPACITY DEVELOPMENT IN MASTER COMPOSTING PROGRAMMES

by Anne Scheinberg¹ and Yuan Zheng²

Abstract

Domestic waste in most South countries contains a high percentage of organic material from kitchens and gardens (Lacoste and Cha). Some of this waste is fed to animals, or decomposes in heaps in landfills and uncontrolled dumps. Largely for financial reasons, composting is seldom seen as a serious contender for modern waste management in South and transitional countries, although many experts agree that it is cost effective, useful for the environment, and sustainable. The result is that much organic waste goes to dumpsites where it is eaten in unsanitary conditions by dogs, pigs, goats, cattle, and sometimes even by waste pickers.

Home and community composting presents an elegant way out of this dilemma, and represents a capacity and human capital approach that reduces the quantities of waste requiring transport and disposal. In *Master Composter* programmes, the work of waste management is distilled to a capacity development intervention. Master composters are given training, which prepares them to teach households how to manage their own organic materials. It is capacity development that has practical results. A Master Composter initiative in Bulgarian villages began in 2006, and monitoring shows its results in terms of diversion of waste away from landfills, but also in terms of citizen involvement and awareness of issues concerning waste. A Master Composter programme was initiated in two regions of Sri Lanka in early 2007, and preliminary results are interesting – and very different.

1. Introduction

Domestic waste in most South countries has a high proportion of organic material, ranging from 60% to 90%, depending on location, season, dietary preferences and subsistence gardening practices. Some of this waste is routinely fed to animals, or decomposes in heaps in landfills, dumpsites and drains. Composting can be a reliable and environmentally attractive way to manage this waste. Composting is the process of decomposing or breaking down organic waste materials into a valuable soil improver called compost. Composting can be done at different scales: large (centralized composting by municipalities), medium (community- or NGO-based composting) and small (home composting) (Veenhuizen 2006).

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Centralised composting succeeds as a waste management strategy when the price of disposal rises about US\$40. In contrast, decentralized and household composting of organic waste avoids expensive and energy-intensive collection by organising composting as close as possible to the source (Anonymous ; Veenhuizen 2006; Scheinberg 2007).

Home composting moves the focus up the hierarchy from recovery to waste prevention. Training households to compost has formed the basis for a number of successful initiatives in North America and Europe. Like energy self-sufficiency and other forms of “household self-provisioning,” home composting has remained mostly a “rich country” approach, and has not really entered the discussion of modernising the solid waste infrastructure in South or transitional countries. An exception is Sri Lanka, which used donor funding to distribute thousands of home composting bins in urban, rural and mixed areas where the tsunami had destroyed urban infrastructure.

Master Composter programmes offer a strategy for managing large quantities of organic waste without physical infrastructure and close to the source, and in a way that treats organic waste as a useful resource. In Master Composter programmes, waste management know-how is presented to households so that they learn how to manage their own organic materials. The capacity development activities build social infrastructure, and the “master” part of composting creates collective support structures that make expansion, monitoring, and management possible.

Master Composter is based on the idea of pyramid marketing schemes, in which “each one reaches many.” The initial training is with village or community committees and civil society. A group of 15-25 Master Composters receives three days of training, including some field work. They each commit themselves to recruiting and training 25 households, including siting, and selecting and setting up or designing and building a composting bin, monitoring periodically, and meeting their “clients” upon request to answer questions and solve problems. WASTE, in consultation with partners in Sri Lanka and Bulgaria, began working with Master Composter approaches in Bulgaria in 2005, and in Sri Lanka in 2006. This paper presents that experience.

2. Solid waste management, Provisioning Systems, and home composting

Solid waste management is a so-called *system of provision*, and shares certain characteristics with other urban infrastructure systems involved in environmental management, such as energy, water and transportation systems. The solid waste management system of provision can be understood as a (large-scale) socio-technical system, which removes solid waste generated by households, businesses and others, and transports it to disposal or treatment sites.

Several Northern European environmental social scientists have used *Ecological Modernisation Theory* (EMT) as the basis for understanding the relationship of household consumers to socio-technical provisioning systems such as energy, sanitation, waste, and water (van Vliet, 2002; van Vliet, Chappells and Shove 2006; Hegger, 2007, Scheinberg 2008, Spaargaren *et al* 2005). Professor Gert Spaargaren of Wageningen University in the Netherlands has, in various publications, developed a social practices model that shows this

relationship more clearly (Spaargaren 1997; 2003). Figure 1 shows this model, adapted here to the solid waste service sector.

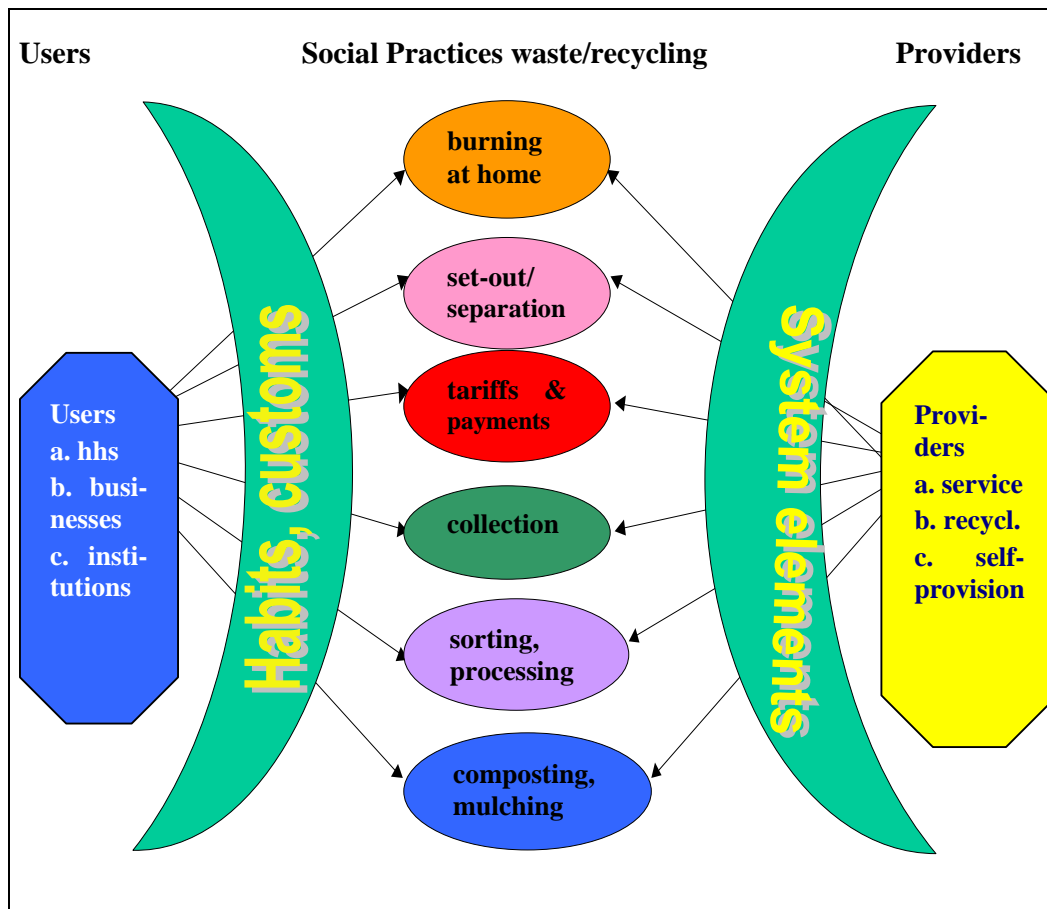


Figure 1. Duality of Structure in SWM, following the Social Practices Model.

Source: Adapted from Spaargaren (2003), and Spaargaren and van Vliet (2000) by the author and used with their permission.

Daily, habitual actions, such as deciding what to throw in the waste bin, what to feed to the dog and how much to pay the collector, are the “practices” that connect providers, who provide the service, with household and commercial users – those that throw things away. Users are motivated by cultural ideas of comfort, cleanliness, and convenience, whilst providers are more concerned with technology, logistics, costs, and politics (van Vliet, 2002; van Vliet, Chappells and Shove 2006).

Home composting is a form of *self-provisioning*, in that it combines the provider and user in the same unit – the household or in some cases the business (van Vliet, Chappells and Shove 2005). Households are responsible for treating and recycling their own organic waste, eliminating the expensive steps of collection, transport and processing. Modern self-provisioning has been associated with “green” alternatives like solar panels and urine-separating toilets, which are also under consideration for peri-urban areas in the South that lack formal provisioning. In this context, home composting can improve the living conditions of urban poor people by giving them a safe option for waste management, and also putting nutrients into subsistence gardens (Practical Action 2007).

The social practices model provides the analytical tools for understanding the role of capacity development in the modernising of the solid waste management sector in low- and middle-income countries. If we as practitioners are working to change practices, we need to understand that relevant capacity interventions are needed *both* on the household side, *and* on the provider side. Effective capacity development focuses on changing habitual social practices on both sides of the model. This is different than the usual capacity building assumptions, which focus on raising awareness for users and technical training for providers of solid waste collection services.

In social practices terms, simply giving a composting bin is not enough to motivate households to become their own providers. Sustainability in home composting has been shown to require organised collective support and capacity strengthening systems. An example of such a capacity development framework is the *Master Composter Approach*. Master Composting has worked in some US states and Canadian provinces, and in Belgium and France and Finland, as a way to use home composting for widespread low-cost management of organic wastes.

Table 1. Some Master Composting Programmes in OECD Countries

Location	Description
Alameda County California (USA)	The Master Composter Programme has trained more than 200 community compost trainers. Participants design and implement their own community outreach projects. From building compost piles in community gardens, to teaching children about decomposition and setting up projects to recycle institutional food scraps, volunteers work at the grassroots level to educate others in the community.
Flanders (Belgian State)	The local Flemish Organization for Promoting Composting and Compost Use (VLACO) promotes home composting by implementing Master Composter (MC) programmes. MC courses are offered to both adults and school children, and every school has one or two Master Composters who teach compost-making.
Rennes, city in Brittany, France	The City of Rennes has an organised home composting programme for multi-family dwellings. The city contracts an individual composting specialist as a kind of extension agent to work with apartment complexes in setting up composting. The programme is demand-driven, and the city provides bins, technical assistance, and education at the request of one or two households within each complex. These households then agree to serve as Master Composters for their neighbours, and receive instruction from the extension agent. To date, about 200 complexes have been connected.
Vantaa, Finland, Student Houses	The <i>compost friends</i> programme at the University of Helsinki in Vantaa in the 1990s provided 1m ³ insulated composters to student apartment complexes. The Master Composters (<i>compost friends</i>) received a hand tool for turning the compost. They had phone numbers to call the municipal waste department when the boxes were full, or there was an odour problem. The <i>compost friends</i> were not responsible for recruitment or capacity development.

3. Structure of a Master Composter programme

A “Master Composter Programme” is a capacity-based programme designed to set in motion a *virtual cycle* of practical, self-help solid waste activities, in the framework of modernised self-provisioning. The type of approach is related to pyramid sales schemes, and is designed

to set up permanent relationships between specially trained individuals in the community, the Master Composters (MCs), and their neighbours, friends, and relatives, the “composting households”.

Master Composter programmes begin with an invitation to community members to apply for the training, which is given if enough people apply. Candidates attend a training programme, sign a formal agreement, and receive a certificate on completion. The Master Composters who have undergone the training together form a *cohort*, and co-operate in learning how to compost their own materials at home, something that is absolutely essential if they are to be able to help others. Each Master Composter becomes the “compost expert” for 15-25 households in her/his immediate neighbourhood, and the head of a pyramid which develops to include new Master Composters (MCs), who in turn agree to recruit and train new households, to support them in buying or building the compost bins, and to maintain contact.

In addition to providing the initial training, Master Composters accept the obligation to help “their households” with problems, answer questions, and facilitate giving compost away if the household itself cannot use it. In some programmes master composters also set up and manage compost demonstration sites in parks or at schools; organise purchase of materials; train school classes or evening study groups in composting; and facilitate laboratory testing of home compost from time to time or when there are problems. The stages of the programme are shown in Table 2.

4. Master Composter Programmes in Bulgaria and Sri Lanka

As part of its project portfolio, WASTE³, has taken the “best practice” in home composting and adapted it for one transitional and one developing country. A Master Composter initiative in Bulgarian villages began in 2006, and monitoring shows modest results in terms of diversion of organic waste from disposal sites, but also citizen involvement and awareness of waste issues. A Master Composter initiative in Hambantota and Kalmunai, respectively Sinhala- and Tamil-speaking regions of Sri Lanka, started up in early 2007, and preliminary results are interesting.

4.1 Master Composting in Topoli, Varna County, Bulgaria

The use of the Master Composter approach in Bulgaria occurred in the framework of a multi-year project to offer alternative approaches to environmental services in villages. The goal for the Bulgaria Master Composter programme was to explore the potential for village self-provisioning as an affordable, capacity-based environmental management strategy in rural Bulgaria. About half the population in Bulgaria lives in villages, each with between 200 and 1,000 households.

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Table 2. Stages in a Master Composter programme

Stage in the programme	Activities
Stage 1. Make a commitment to being a Master Composter	Agree to participate for a minimum of 2-3 years, to really get the programme going; Attend the training and apply the lessons to building their own home composting system.
Stage 2. Extend the reach and importance of home composting	Communicate about the programme to potential households, to the press and media, to schools and religious groups, to government officials, etc. Recruit and subscribe 15-25 households per cycle.
Stage 3. Build capacities for composting at household level	Design and conduct training for each of these households; Support the selection of a household-specific home composting “package” including a (standard or modified) bin; Make regular visits; Offer technical support in use or “marketing” of finished compost; Be prepared to spend one to two hours giving an orientation to each newly recruited household; Identify the person in charge of the compost; Site and build the composting bin, including choosing the type of bin, modifying the existing bin, etc.; Visit a household when contacted and requested by the household members; Support the households in using the compost at their houses or at a separate garden or farming area, or at the houses of relatives.
Stage 4. Organise collective solutions for problems households cannot solve themselves	Support the household in safe management and in marketing of excess compost; Organise the removal of partially or completely finished compost if the household cannot use it or market it themselves; Organise the purchase of supplies, materials, tools for groups of households, as needed; Facilitate laboratory testing, agronomic advice, specialised trouble-shooting, etc.; Be alert to problems, trends or situations that need attention; Write down observations, and communicate them to the programme co-ordinators.
Stage 5. Monitor effectiveness and contribute to continued programmatic development	Set up each household with self-monitoring forms and teach them how to use them; Visit the households on a regular “route” about once per month to collect the self-monitoring forms and check how things are going; Participate in a quarterly needs analysis and fine-tuning exercise, to develop new programme components such as a “compost bank” or “trouble-shooting tools”; Report on each cycle and begin a new cycle at least once – or preferably twice – per year; Co-operate with municipal or NGO programme co-ordinators and support overall research, monitoring, and evaluation.

The project worked with self-provisioning as options for villages in three sub-sectors: in the water sector (promoting rainwater harvesting), in sanitation (using on-site ecological

sanitation), and in waste management (by means of on-site composting of household organic waste, potentially in combination with urine and animal manures).

Secondary goals in Bulgaria included building capacity and social infrastructure, improving environmental governance for solid waste and sanitation in villages, and raising awareness among citizens and the agricultural community concerning the value of compost.

4.2 Master Composting in Hambantota, Southern Province, and Kalmunai, Eastern Province, Sri Lanka

The goals for the Sri Lanka programmes were more directly practical, focusing on solid waste management improvement *through self-provisioning* for 10,000 tsunami-affected households in two districts: 7,000 households in Hambantota in the Southern Province and 3,000 in Ampara District in the Eastern Province.

An important objective was to restore services in tsunami-affected areas, through building the capacity of households to provide self-provisioning solutions themselves. Community and household self-provisioning is not a new concept in Sri Lanka: for a number of years WASTE's partner organisation, Energy Forum, has been involved in micro-hydro electricity generation for villages.

The 2007 training was a test of the capacity development and social infrastructure aspects of master composting in the Sri Lankan context. The training was designed to set in motion household composting for as many as 2,000 households in each location within two years.

An additional goal in Sri Lanka was to explore the socio-cultural dimensions of household composting in both areas. In the second year, it also had the goal to refine the approach to make sure that the right persons were being trained and were operating composting correctly, and then to train 20 to 40 more Master Composters, in each of the two locations. A third goal was to publicise the function and value of compost, so that households who cannot use all that they generate would be able to give it away to neighbours without any difficulty. And a related, important fourth goal was to increase awareness of the whole process of generating and managing waste, so that the households were also motivated to participate in prevention, recycling, litter clean-ups, and other activities.

In Sri Lanka, the preparation for Master Composter included asking for local research in the two regions, to identify gender aspects of home composting. See Box .

Box 1 Questions in preparation for Master Composter capacity building

- Who in the household is responsible for the activities which generate organic waste?
- Who makes the decisions about selecting menus and preparing food? Who does the shopping?
- How does food become waste in the kitchen, garden, and elsewhere? What other paths can organic waste follow?
- What works and what does not work in the existing system? Is there a need and a niche for home composting and Master Composter?
- Are there seasonal or other peaks of organic waste quantities?
- What about the two other main organic waste streams from households: garden waste and excreta?
Are they suitable for home composting? *(The list continues on the next page)*

Box 1 (continued)

What restrictions are there on who can handle organic wastes, or when, and under what circumstances do these restrictions apply?

Who manages waste once it has left the kitchen or the main part of the house? What kinds of interests and influences are involved?

Who manages other kinds of organic waste, for example, flowers or garden waste? Are infectious materials like excreta or diapers considered to be organic waste?

What about related activities that are more like maintenance? And which category does gardening fall into? Who is in charge of the garden? Who works in it?

What is necessary to make sure that communication is effective? What influence does this have on the choice of whether to train women or men “Master Composters?”

4.3 The training of Master Composters in Bulgaria and Sri Lanka

The training was similar in both countries, as shown in Table .

Table 3 Overview of Master Composter training in Bulgaria (Bg) and Sri Lanka (S.L.)

Day	Focus	Training method
Day 1: “Making compost at home”	general introduction to solid waste, the idea of self-provisioning, making hot compost, knowing what to compost, why include and manage food waste siting a home compost pile turning and watering understanding compost biochemistry choosing a home composter, and trouble-shooting	Interactive PowerPoint presentations with small group exercises; bin selection exercise; presentation on results of gender investigation.
Day 2: “Using compost for garden and food production”	use of compost in subsistence or other agriculture practical aspects of using compost identifying when compost is needed vermicomposting composting of human excreta applying compost and compost teas	External speaker from agriculture sector Interactive PowerPoints Home visits to up to three households, see composting in action, and analyse what goes well or badly
Day 3: “Master composters at work: sharing the knowledge & spreading the word”	building compost bins (Bulgaria) trouble-shooting existing bin designs recruiting new neighbours techniques for publicity and outreach action planning evaluation of training scheduling of follow-up meetings	Building session for 5 types of bins (Bg) Interactive PowerPoints Small group sessions on prioritisation, goals, action planning Gender exercise and gender conclusions Personal commitments Giving of certificates

4.4 Different background situations

The background situation in the village of Topoli in Bulgaria was quite different from that in the two areas of Sri Lanka, as shown in Table .

Table 4 Some similarities and differences between Bulgaria and Sri Lanka

	Topoli, Varna, Bulgaria	Hambantota, Southern Province Sri Lanka	Kalmunai, Eastern Province, Sri Lanka.
Type of municipality	Urban fringe village, part of coastal city administrative district	Small city, coastal, damaged by tsunami	Small city, coastal peninsula, perceived extensive tsunami removal of all topsoil
Climate	Mediterranean, on the Black Sea	Tropical monsoon, East Coast	Tropical monsoon, West Coast
Housing, gardens, purpose of gardening	Small houses, large gardens for subsistence fruit and vegetables, mostly subsistence	Very small houses, some in “tsunami village” reconstructions; large gardens; fruit vegetables, livestock, mostly for subsistence and own use	Small houses, large yards on sandy soil stripped of topsoil by the tsunami, livestock, fruit and vegetables, mostly for market
Demo-graphics	Permanent residents grandparents and their children and grandchildren, many family visitors from the city at weekends	Young and middle-aged families, mostly two, sometimes three generations; family members lost in tsunami	Young families with children, some older with children moved away; members lost in tsunami
Composting experience	Experience with animal manures and cold compost/mulch piles.	Good experiences with cold composting in a “live fence”; bad experiences (smells, maggots, no decomposition) with post-tsunami distribution of cement home composters.	Failed attempts with animal manures; some success with live fence design; bad experiences with cold composting.

4.5 Quite different results

The preliminary results are summarised in Table 5.

5. Conclusions and success factors

The experience with these three programmes suggests that Master Composter may be a route to sustainable self-provisioning through the window of capacity development. Success is not guaranteed, but even when the number of households remains small, the general rise in capacity of the community offers longer term benefits.

In evaluating whether Master Composter is appropriate or not, an assessment of is recommended to see at whether the local situation has enough success factors, to go ahead. The most important parameters include:

1. There is sufficient experience and agricultural knowledge in the target group.
2. The co-ordinating organisation is based in or near the project site, and has strong local networks and good credibility.
3. The programme design includes financing for a local co-ordinator for the first years of the programme.

Table 5 Some results from Bulgaria and Sri Lanka

	Topoli, Varna, Bulgaria	Hambantota, Southern Province, Sri Lanka	Kalmunai, Eastern Province, Sri Lanka
Training date	September 2006	February 2007	February 2007
No. trained	15	30	15
Gender balance	80% women	90% women	80% men
Civil society/ government	Village mayor attended and identified herself with the initiative, socially embedded, no civil society	Home gardening and environmental NGO, reps of Municipal Council, local gov't, Environmental Ministry	Local branch of capital city NGO, Ag school, Agriculture and Environmental Ministry, no local government
Attrition (= left early)	75% attended all days, 100% got certificate	100% attended all days	50% attrition after day 1 among men only
Atmosphere in training	Relaxed, friendly, social and interested	Very enthusiastic and highly motivated	Mixed, some positive, vocal minority of male angry hecklers
Evaluation	Very positive	Very positive	Mixed, women more positive
Households composting July 2007	60, about a third continue after a year to have hot composts	600 households trained, 450 composting; 300 hot composting with good results; 150 low effort, poor results; 150 stopped when family moved away from area. In the area there are 2-3 projects using cow manure and leaves in traditional paddy lands.	No information this time (also relates to weak linkages with local NGO branch)
Tons diverted per period	About 1 ton per month	1 to 2 tons per day, approximately 400 tons per year	No information this time
Total tons diverted	26.250 litres = 26 m3 or about 9 tons,	Not measured exactly, based on above, should be around 600 tons	No information this time
Prospects for future	Several other villages have asked for assistance	The programme needs a supervisor for about one year, some agronomic advice in farming, supply of seeds and organising collection of other waste; for example, polyethylene is burned	No information this time
Local host organisation	Village mayor's office supported by nearby urban environmental institute	Local gardening NGO with support from national programme partner and WASTE	Local branch of capital city NGO, little local infrastructure

4. The programme fills a gap for households or villages which the formal or informal waste management system does not cover completely or adequately;
5. MCs can be recruited from specific age and gender groups (young mothers, retired grandfathers) who have a clear and recognised affinity for working in the garden. Most dwellings have a kitchen garden and/or orchard that they use for subsistence food production. Where the houses are too small, a small farm or house at their village of origin may be an alternative.
6. The economic and cultural conditions make home gardening, home food and beverage processing and preservation necessary rather than being a hobby.
7. Another way of saying this is that even when people live in an urban setting, there are sub-groups which have rural roots in their own or the previous generation.
8. There are at least as many women and men in the initial cohort, and a majority of women is preferable.
9. Outside of the groups of MCs, there is a generally high level of knowledge about plants, gardening, and care of livestock.
10. The programme is in a community or settlement with sufficient horizontal linkages to make dissemination and recruitment of families and MCs likely. Such linkages can vary – for example family, community, religious, ethnic, social, age, cultural, locational, and/or geographic ties, but they must be present.

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