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# Networked Ecological Citizenship, The New Middle Classes and the Provisioning of Sustainable Waste Management in Bangalore, India

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Networked ecological citizenship, the new middle classes and the provisioning of sustainable waste management in Bangalore, India

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## Abstract

Globalization and economic liberalization are enabling individuals in emerging economies like India to access lifestyles similar to the resource-intensive West. This spread of consumerism poses substantial ecological challenges, and calls for studies that investigate the environmental values, ethics, and politics of India's new consumers. In this paper, I explore emerging pro-environmental behaviors in the city of Bangalore, India, among the new middle classes- its most significant consumer class. Using the case of home waste management, I show how household behavior change is made possible by neighborhood-based coordination, involving multiple actors such as environmentally-conscious residents, domestic help, and hired waste workers. Drawing on ecological citizenship theory, I discuss how waste management through recycling and composting is being implemented in Bangalore through networks of socio-economically privileged new middle class individuals. Their privileged social, political, and economic positions enable them to collectively enact changes in their cultural and structural contexts to facilitate pro-environmental initiatives. At the same time, the role of other actors like domestic servants and waste workers is also critical to the process. I show how ecological citizenship theory can be used to analyze and highlight voluntary involvement by socio-economically privileged individuals but fails to recognize the contributions of actors, who through their livelihood practices, play a pivotal role in producing the systems that enable pro-environmental behaviors among the elite. I conclude by suggesting that a critical analysis of the processes and political arrangements that produce pro-environmental behaviors is vital to sustainable consumption and production research in emerging economies like India.

## Keywords

Behavior change; ecological citizenship; India; recycling; urban sustainability

## 1. Introduction: new consumers in India

Globalization and economic liberalization are enabling some individuals in emerging economies like India and China to access lifestyles similar to those common in the West (Myers and Kent 2003, 2004). The emergence of this “North in the South” poses major challenges to the project of sustainable consumption and production. Even as the bulk of the Indian population lags behind in access to basic necessities like energy, water and even food, a relatively small but still significant section of the population is adopting resource-intensive consumption patterns (Mawdsley 2004, Upadhy 2009). The size of this group is expected to expand in the next two decades. A 2007 McKinsey report "The Bird of Gold" on the Indian consumer market forecasts that total consumption in India will quadruple by 2025 (from 2005 levels). The next two decades will see more Indians driving cars, eating meat, owning appliances and embracing various branded goods and services (Ablett et al. 2007). At the same time, advertisements, film and television media, celebrities, businesses and the State promote and reinforce imagery where consumer lifestyles are the symbols of a modern, world-class nation (Fernandes 2000a, 2009). India is set on a development trajectory that fuels and is fuelled by increasing consumption.

Even as a majority of Indians continue to lack access to basic goods and services, a relatively small but still significant section is consuming at considerably higher rates (Myers and Kent 2004, Mawdsley 2004). Studies have produced estimates of the size of these consumer classes. For example, Myers and Kent estimate that in the year 2000 there were 132 million new consumers in India, constituting 13 % of the population. They define new consumers as individuals belonging typically to four member households with a purchasing power of more than \$10,000 per annum in the year 2000. Using this definition, they identify 1.1 billion new consumers in over 20 countries (Myers and Kent 2003). These new consumers, while accounting only for one eighth of India's population, possess two fifths of the country's purchasing power. They are responsible for 85 % of personal transport purchases and have CO<sub>2</sub> emissions 15 times greater than the rest of India, attributable to their high per-capita energy consumption (Myers and Kent 2003). Other studies have also produced estimates of emission disparities among different expenditure classes in India. Parikh et al estimate that in 2003-04, the emissions produced by the top 10% of urban India (roughly 30 million people) were about 15 times the bottom 10% of urban India, and about 27 times the emissions of the bottom 10% of rural India (Parikh et al. 2009). In sharp contrast to these numbers, policymakers have consistently termed India's emissions 'development' emissions. However, as recent studies on emissions profiles across income classes have shown, not only are these new consumers important to study from an environmental perspective, but their emergence also has consequences for ecological equity and climate justice (Chakravarty and Ramana 2012).

While elevating the consumption levels of India's poor to ensure well-being, dignity and satisfaction should remain the main priority for research and policy, studying the environmental values, ethics and politics of individuals and communities from these high consuming sections is also vital to sustainable consumption and production efforts in India (Mawdsley 2004). This paper makes a contribution to this emerging literature by using ecological citizenship theory to investigate the environmental behaviors, ethics and politics of a particularly influential class of citizens, a network of new consumers in the city of Bangalore, India.

In this paper I investigate the emergence of an interest in pro-environmental behaviors among the new middle classes of Bangalore, India. I use ethnographic data to describe the process by which

environmentally-conscious and socio-economically privileged new middle class individuals practice and promote sustainable waste management initiatives as a way to contribute to better neighborhood, city and planetary environments. While research and policy focused on individual behavior change has been criticized in the literature coming out of the West as promoting the individualization and de-politicization of environmental responsibility (Maniates 2001) I show that this case presents interesting opportunities to examine the evolution and intersection of environmentalism, consumption and citizenship among a strategic section of the Indian population; the well-heeled, propertied, well-employed and high-consuming urban middle classes whose attitudes and actions have the ability to restructure urban spaces (for work on middle class cultural and environmental politics that speaks to these themes see Baviskar 2003, 2011, Baviskar and Ray 2011, Ghertner 2011).

I argue that collective action by a group of environmentally-conscious, motivated and socio-economically privileged individuals enables pro-environmental behaviors within the new middle class home. I show how middle class actors invoke environmental discourses and create new social norms to encourage the adoption of recycling and composting activities in their communities. They set up communal infrastructures and processes that permit households to change their waste handling behaviors. These middle class designed systems of provision also depend on paid workers within and outside the home, whose labor is critical to the implementation of these initiatives. I relate these findings to work on ecological citizenship (Dobson 2003) and neighborhood networks (Kennedy 2011) and use this as a frame to analyze the collective and environmental politics of these initiatives.

Using ecological citizenship theory, I interpret these new middle class initiatives as collectively engendering behavioral, cultural and institutional change in the environmentally-significant domain of waste management. I use the culturally rooted dynamics of the case, specifically the role of paid labor within and outside the home, to complicate theory. I contend that the concept of ecological citizenship, because of its focus on the citizenship practices of ecological debtors (the new middle classes) and limited treatment of the role of ecological creditors (paid labor from the working classes) fails to recognize the contributions of those actors, who through their livelihood practices, play a pivotal role in producing the systems that enable pro-environmental behaviors among the elite. This critique is in alignment with the positions of Hayward (2006a, 2006b), Latta (2007) and Machin (2012) who have commented on the theory's silence on the 'environmentalism of the poor' (Hayward 2006a Pg. 445) and limited engagement with the 'degree of exclusion in existing polities' (Latta 2007 Pg. 378). I conclude by suggesting that a critical analysis of the processes and political arrangements that produce pro-environmental behaviors is vital to sustainable consumption and production research in emerging economies like India.

## **2. Ecological citizenship**

In its most common form, citizenship is understood as the activity and status of individuals in the public realm and is primarily distinguished as liberal or civic republican, where the former focuses on the rights of citizens and the latter emphasizes duties and responsibilities (Dobson 2003). Citizenship is characterized by a contractual relationship between the state and its citizens in that the passive acceptance of citizenship rights is complimentary to the active exercise of citizen responsibility like political participation, economic self-reliance, making tax contributions from earned income, and in recent times, making consumer purchases. It is this reciprocal interaction where citizens discharge duties in exchange for being entitled to rights that forms the basis of most democratic political systems. Wrapped up in this definition is the territorial nature of liberal and civic republican

citizenship, in that it operates within the boundaries of usually contiguous political spaces (Dobson 2003, Machin 2012).

The territorial, masculine and contractual nature of liberal and civic republican citizenship has led to the development of ideas of cosmopolitan and post-cosmopolitan citizenship and a particular form of post-cosmopolitan citizenship relevant to sustainability - ecological citizenship (Dobson 2003). Ecological citizenship is defined as a non-reciprocal and non-territorial post-cosmopolitan citizenship that occurs both in the private and public spheres of life and has an explicit identification with the virtue of contributing to the common good. Dobson conceives of it as a practice, rather than a status that is accorded to individuals, and to consist of obligations as opposed to privileges (Dobson 2003). Ecological citizenship theorists see individual acts like recycling, composting or buying organic food as constituting acts of citizenship as they contribute to the public good, albeit through private action (Dobson 2003, Seyfang 2005, Kennedy 2011). The ecological citizenship concept has been used to argue for a role for individual citizens to participate in the production of a more sustainable world (Revkin, A. 2012). The concept emphasizes historical and contemporary obligations across national boundaries and calls on individuals to proactively reduce their personal environmental impacts in light of these obligations, while also collectively advocating for public policies that promote sustainability. A normative theory, it dictates that individuals and communities that occupy a greater share of the global ecological footprint have proportionally greater obligations to make changes to their own resource-consuming and waste producing-practices (Dobson 2003). In other words, those who (currently and historically) consume more have a greater responsibility not just to the planet but also to those whose lives are adversely affected by the environmental problems that are produced by high levels of consumption

A major criticism leveled at the ecological citizenship framework is that its focus on individualized responsibility and action does not give adequate consideration to the significance of cultural or institutional change through collective action or political participation (Kennedy 2011, Machin 2012). In response to this, recent work in Edmonton, Canada has related ecological citizenship to neighborhood networks to make the argument that when ecological citizens engage in a network, conditions for environmental politics are engendered (Kennedy 2011). By tracing an informal neighborhood network of households committed to reducing their consumption, Kennedy finds that participation in a network has multiple benefits that make individuals more likely to persist with changing (or reducing) consumption. This includes developing a sense of belonging, sharing knowledge and resources and providing mutual reinforcement. Moreover, ecological citizens who belong to a network have the ability to bring about cultural change, by changing mainstream norms through their collective conspicuous (non) consumption and by actively shaping their neighborhood contexts through various voluntary actions. As Kennedy (2011 Pgs. 856-857) states “by focusing on a group of individuals within a neighborhood, the focus of ecological citizenship shifts to seeking to understand the potential for participation in social change rather than the potential to reduce individual environmental impact.” In other words, it goes from being a discussion of individual contributions to collective environmental politics.

By applying ecological citizenship theory in a developing world context, my work adds to this emerging body of work that relates individual behavioral changes and sustainable consumption with citizenship, collective action and environmental politics. ‘Networked’ ecological citizenship theories provide a normative framework that allow for the interpretation and analysis of both individual contributions through changes in personal and household behavior, and through participation in collective politics and processes. I show how the normative dimensions underlying ecological citizenship theories can be used to analyze and highlight voluntary involvement by socio-economically privileged individuals. However, following Hayward (2006a), Latta (2007) and others, I

use the culturally-situated dynamics of waste management in urban India to demonstrate that ecological citizenship theory has limited applicability in situations where pro-environmental behaviors are made possible by collective networks that are composed of people with different levels of obligation, capacity and social status, and where contractual relationships of service and servitude exist between members of these networks.

In the next section, I set the context for my case studies by reviewing the literature on the origin, composition and cultural politics of the new middle classes of Bangalore, India. I discuss how new middle class identity is associated with discourses around consumption and consumerism. I then introduce my case studies and use vignettes to present data collected through interviews and participant observation with individuals and communities who practice and promote sustainable waste management. I discuss my cases in relation to ecological citizenship theory to demonstrate that the privileged position that the new middle classes occupy within India's cultural, social and economic context, especially in relation to working class waste workers, complicates and extends the ecological citizenship framework.

### **3. Green lifestyles among the new middle classes of Bangalore, India**

#### **3.1. The new middle classes of Bangalore**

The case studies I discuss here are based in the city of Bangalore in India- a once sleepy town of public sector employees and retirees that has transformed to a bustling megapolis in the past two decades (Upadhyaya 2009). Bangalore's transformation is emblematic of India's 'growth' story. In the early 1990s, India embarked upon a series of financial reforms that reduced corporate taxes, began disinvestments of public sector entities and opened the country to foreign direct investment (Fernandes 2009). The liberalization of the Indian economy came at a time when economic globalization was gathering pace, and India caught the wave of a wider transformation in business and industry. India was well-positioned to take advantage of these changes and the Information Technology industry is a case in point (Upadhyaya and Vasavi, 2008). The influx of foreign companies brought with it well-paying jobs and rising incomes, especially for the educated upper castes living in urban centers (Upadhyaya 2009). At the same time, with markets becoming increasingly globalized, foreign corporations entered the fray and new consumer goods arrived in the Indian market. Soon, millions had disposable incomes to partake in the consumption of commodities that were previously not available to them at affordable prices (Mawdsely 2004).

This moment marked the emergence of the *new middle classes (NMC)* of India, a globalizing and consuming class, whose identities are intimately tied to the policies and benefits of economic liberalization (Fernandes 2009).<sup>1</sup> The rise of the NMC has been accompanied by the growing

<sup>1</sup> In India, the origins of the middle classes have been traced back to colonial times. The British government promoted the emergence of a professional class involved in civil administration, law and other service sectors. Post-independence, the development of this middle class was directly aided by the state through a rapid expansion of the higher education system, creating a large body of technical and managerial experts to operate state and public sector enterprises (Mawdsely 2004). The new middle classes are distinguished from these 'old' middle classes mainly by higher levels of consumption and a governing association with the policies of liberalization (Fernandes 2009). It is important to note that the term middle class is more than just an income group- it can be defined in multiple ways (using sociological, cultural and economic criterion), and operates as much as a cultural construct as a sociological term. In other words, the discourses around middle classness are as important to their self-definition as how much they earn or what they buy (Fernandes 2000a). Consequently, enumerating the number of Indians who qualify/call themselves 'middle class' has always been a tricky proposition. Furthermore, the new middle class likely represent only a small section of the overall population that could count as middle class. However, despite their relatively small numbers (estimated to be about 20 million households or 90 million individuals (Ablett et al. 2007. NCAER (National Council For

prominence of media and advertising, which in turn contributes towards producing a “New Middle Class identity that is associated with consumption practices of commodities made available through market liberalization” (Fernandes and Heller 2006). These NMC are seen as the “vanguards of social modernization” in Indian society (Mawdsley 2004) and are frequently framed as the class group that the rest of India aspires to emulate (Fernandes 2000b).

It is important to note that the consumption practices of the new middle classes cannot be reduced only to conspicuous consumption or status consumption. Much of the increased consumption is driven by changes in living arrangements, household composition and gender roles, family needs and familial negotiation (Wilhite 2008). Consumption for social performance is thought to be more important for some goods like cars and branded clothing (Upadhyaya 2009). Related to this are studies on how advertisements in India play on themes of inclusion and exclusion to encourage certain types of consumption (Wilhite 2008). However, what is important to note is that new middle class identity is as much about the discourses around consumption as it is about consumption itself (Fernandes 2009, Upadhyaya 2009).

Concomitant to the rise of the NMC, Bangalore emerged as the capital of the country’s booming technology industry and is home to about 200,000 Information Technology and other professionalized workers who constitute one of the most visible portions of India’s new middle classes (Upadhyaya 2009). The new middle classes of Bangalore work in multinational and Indian technology corporations, investment banks, media, healthcare and other service sectors (Upadhyaya and Vasavi 2008). Many of them come to the city from other parts of the country in search of these opportunities. Their lives and lifestyles are highly influenced by globalization- from their working hours which are linked up to US and UK times, to the kind of clothes they wear, the food they eat, where they live and what they buy. Symbols of new middle class lifestyles are visible in Bangalore’s swanky malls, chic coffee shops, gated communities and car-clogged roads. The city is expanding, changing old neighborhoods and creating new ones. These rapid changes in the socio-economic landscape of labor, housing, production and consumption have in turn strained Bangalore’s waste, water and transportation infrastructure, resulting in frequent traffic jams, over-flowing garbage dumps and other urban ills. At the same time, many of Bangalore’s urban poor and working classes have suffered displacement and continue to struggle for rights to land, livelihoods and basic services like piped water supply and electricity (Benjamin 2000).

It is in this context of rising consumption and changing urban landscapes that I investigate the emergence of an interest in pro-environmental behaviors and sustainable consumption among Bangalore’s new middle classes, demonstrated by the presence of communities of city bicyclists, neighborhood waste management programs, terrace gardening groups and organic food stores in the city. These practices, albeit disparate and sometimes driven by other motivations like health (in the cycling and organic food case), sanitation (in the waste case) or city stewardship (in the cycling and waste case), have one thing in common - they are framed as environmentally-friendly and promoted as a way in which the eco-conscious new middle class individual can contribute to a better city and a better planet. This makes them relevant to a study of middle class environmental ethics, behaviors and politics.

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Applied Economic Research) 2007), they are an important group to not only because of their high consumption levels, but also because new middle class individuals are industry leaders, media professionals and NGO activists who shape public policy and opinion (Fernandes 2000b, Mawdsley 2004).



### 3.2 Methodology and data

In this paper I focus on individuals and communities in Bangalore who practice and promote recycling and composting in their homes, neighborhoods and city. This paper is part of a larger research project on middle class environmental politics in Bangalore, India. I conducted 15 months of ethnographic fieldwork in Bangalore in 2011, 2012 and 2013 during which time I lived in Bangalore among communities who were practicing and promoting pro-environmental behaviors like bicycling, recycling and composting. In this paper, I draw on 20 semi-structured interviews and site visits with individuals who are involved in practicing and promoting zero waste management in their neighborhoods and in the city. Many of these individuals are also engaged in other pro-environmental behaviors such as commute cycling and organic gardening. In addition to interviews, I attended public meetings on waste management and analyzed online materials such as blog posts, news articles, public forums on Facebook and email listservs. The data I use in this paper was collected in late 2011 and early 2012, and a major portion of this article was written in May 2012. I have since updated the article with new online and ethnographic data collected during a 7-month period from August 2012 to March 2013.

For my research, I identified potential interviewees by tracking newspaper reports and social media posts on community waste management. Individuals were contacted via email and invited to participate in the study. In addition to this method of recruiting respondents, I also used snowball sampling to identify cases. This was particularly effective as almost all the individuals I interviewed were embedded in online and offline networks that focused on waste segregation, recycling and terrace gardening.

I should also note that I had lived and worked in Bangalore for 2 years and my knowledge of the city was useful in establishing the cultural context of the study. The cases selected for study are all in neighborhoods that are clearly identified as middle class by the individuals who live there. Most of these cases are situated in upscale gated communities in Bangalore, i.e. large residential developments consisting of multiple apartments that restrict entry using physical barriers and security guards. These complexes usually have multiple amenities like swimming pools, clubhouses and manicured lawns, and dedicated facilities/housekeeping' staff employed to manage and maintain these spaces. A total of 17 communities were studied, of which 13 were gated complexes of differing sizes (ranging from 14 to 1300 apartments), and 4 were open layouts (ranging from 200 to 2500 homes).

Interviews usually lasted 2 to 4 hours and often involved a tour of the neighborhood or gated community to see waste management infrastructures and processes. Interview questions focused both on personal attitudes, motivations and behaviors, and on collective initiatives and infrastructures. Respondents were asked about how they became interested in household waste management, who they consulted with before and during the adoption of these behaviors, what kinds of information they referred to, the barriers they faced while adopting and performing recycling and composting, what this meant for other aspects of their daily life, and how their families and friends have reacted to their changed behavior. Individuals who were involved in setting up community programs and infrastructures were also asked about the process by which they accomplished this. This included questions such as "are you part of a team or group that organizes and monitors waste management in your neighborhood?", "how did you become involved in this?", "what kinds of activities does your group take up?" etc. Interviews were transcribed and coded to identify common themes, patterns and points of tension. Field notes were also coded for themes. Themes were then aggregated to identify key concepts such as 'environment', 'citizen', 'neighborhood', 'networks' and 'responsibility' and

these concepts were then related to each other and to the theoretical framework. The process of coding and analyzing the interviews was done iteratively to develop the arguments presented in this paper.

### **Household and neighborhood waste management in Bangalore**

To place these contemporary efforts at waste management among the new middle classes in historical and cultural context I put my case studies in conversation with existing scholarship to show how middle class attitudes towards waste and engagement with waste have changed over time. I then describe a typical decentralized waste management system, highlighting the role of volunteer leaders who conceptualize and administer these systems, and of domestic servants and paid waste workers whose labor is critical to the operations of these middle-class driven systems.

#### 4.1. Waste and the middle classes

Waste has been a site for middle class action and engagement for a number of years, and has been one of the main avenues for the expression of middle class civic and environmental concern (Mawdsley 2004). Consequently, much of the literature on middle class environmentalism and civic activism engages with how the middle classes have framed and acted on waste in the public and private sphere (for example Ghertner 2011, Baviskar 2003). Writings on garbage and the public sphere in India observe that the middle classes neither took responsibility for the streets outside their homes, nor consequently for the rubbish they threw onto those streets (Chakrabarty 1991, Ghertner 2011, Kaviraj 1998). Some of these behaviors can be traced back to the caste system where waste work was reserved for individuals from certain castes, and contact with certain forms of waste (and the people who handled) were considered impure (Beall 1997). In contemporary situations, this apathy to waste on the streets has partially given way to rhetoric of distancing and displacing of responsibility for waste, best exemplified by a *bourgeoisie environmentalism* where middle class ‘environmentalists’ claim that the urban poor, especially slum dwellers, are the source of urban filth and decay, and that their removal is necessary for the creation and maintenance of green and healthy cities (Baviskar 2003, 2011). Solid waste has been used strategically in these efforts to frame aesthetic preferences as environmental and public health concerns (Ghertner 2011). This is closely related to the project of world-class city making where urban elites, business leaders and the State work together to fashion Indian metropolises in the image of New York and London (Ghertner 2011). In line with this mission, some middle class groups have distanced and displaced responsibility for environmental decay (i.e. solid waste in city spaces) to the urban poor, and used this as means to consolidate their claims to the urban commons (Baviskar 2003, 2011, Ghertner 2011, Mawdsley 2004).

In terms of daily practice, within the middle class home, waste work, like most other household chores, is primarily done by women and by domestic servants (Wilhite 2008). Traditionally, this waste work also included the sorting and selling of recyclables to itinerant hawkers or to *kabbadiwalas* (scrap dealers) (Beall 1997). Recyclables like newspapers, plastic and glass bottles, milk packets and cardboard boxes were sold for small quantities of money or for other goods like plastic buckets or utensils. This was one among the many thrifty habits the middle classes of pre-liberalization India practiced, such as repairing goods several times before throwing them away, covering valuable items like TVs and cars with plastic covers for protection and reusing old clothes to make cleaning cloths. These thrifty habits are still routinely practiced by other middle class and working class groups.

However, as I discovered in Bangalore, these practices are becoming increasingly rare among the new middle classes, for a number of reasons. High incomes have more or less removed any economic motivation for recycling as the small quantities of money made from selling recyclables are negligible compared to the overall income and expenditure in many new middle class households. Moreover, with the increasing importance of conspicuous consumption, especially among younger consumers, thrift no longer appears to be a valued trait within this class group (Mathur 2010). As more middle class women join the workforce, waste work in many homes has fallen solely to domestic workers, and recycling is no longer a priority for the middle class householder. Changes in urban architecture and real estate prices have also made this traditional form of recycling through the informal sector less common. For example, many new middle class families live within gated communities or 'secure' high-rise apartments where itinerant hawkers and other vendors are not allowed entry. Consequently, the practice of hawkers coming to doorsteps to buy recyclables in exchange for money or other goods has reduced considerably. All these factors have resulted in the decline of these older, traditional recycling systems driven by thrift and supported by the informal waste economy among the new middle classes.

#### 4.2. Home waste management 2.0

The past decade has seen the emergence of new recycling and composting initiatives that focus on managing waste generated in new middle class homes. In the city of Bangalore, this has come mainly in the form of decentralized solid waste management programs implemented in middle class neighborhoods by local Non-Governmental Organizations, Residents Welfare Associations and community groups. Most of these programs require segregation at source, where dry and wet waste is collected separately in the home (primary segregation). The dry waste is further separated into different types of recyclables (secondary and tertiary segregation), and sold to different buyers, while wet waste is either composted, or sent to the landfill. The term zero-waste is often used to describe these waste management programs. In general, most of these initiatives operate with limited assistance from government bodies (like the city municipality), and are run by residents in conjunction with NGOs and various vendors. In addition to these waste management programs, other waste related solutions have also begun to gather momentum.

Taken together, these programs and practices represent interesting deviations from the apathy and distancing that typically characterizes middle class attitudes to solid waste. Instead, what is observed is an increasing individualization of responsibility for waste generated within the home, and the rising popularity of scientific solutions to the solid waste problem. Managing waste is also being framed as one of the primary ways in which middle class households can go green and reduce the environmental impacts of their lifestyles.

In the following sections, I use ethnographic narratives to describe how specific social, cultural and institutional factors influence how home waste management practices through recycling and composting are engendered in new middle class homes and neighborhoods. The narratives describe how the adoption process requires the mobilization and incorporation of various actors from residents and domestic workers, to corporate vendors and the city government. I show how such neighborhood-based efforts replicate and scale to city-wide waste management schemes and initiatives. I argue that these practices necessitate the creation and maintenance of communities of practitioners who collectively enact changes in structural and social contexts that enable these sustainable behaviors, thereby practicing a form of ecological citizenship.

4.2.1. *Case 1: Residential waste management: changing behavior in the home and beyond*

My search for examples of zero waste management systems led me to Project Green X (*name changed*); a residential waste management program operating in one of Bangalore's large gated communities. This waste management program was launched in 2009 by a few residents who were members of the local chapter of the Rotary Club. The following ethnographic vignette describes my visit to this gated community and my interviews with some of Project Green X's leaders.

I arrive at the gated complex which is located in one of Bangalore's most expensive localities and is home to a number of Information Technology companies. The complex is a large development consisting of over a thousand upscale residential apartments and some corporate offices. I am scheduled to meet with one of the women who spearheaded the project. I meet her in the parking lot of one of the large apartment blocks (of which there are 16), and she quickly ushers me towards a cart being pushed by two young women in green uniforms. "*You're a little late, but just in time to see the collection*", she says. She then explains the strategy that Project Green X uses to implement waste segregation in their complex-: each household is given three separate bins for different types of waste; a blue one for dry waste, green for wet waste and a black bin for hazardous waste. Apartment residents and the domestic help they employ are required to segregate the garbage at source, making sure never to mix dry with wet. Housekeeping staff employed by the complex go to each of these homes and collect the segregated garbage. Wet waste is collected every day, while dry waste is collected twice a week. The wet waste is then sent to the landfill, though plans are afoot to get an organic waste composter for the complex that will make compost out of the waste. Many residents already compost their waste in their homes using a popular product called *Daily Dump*, I'm told.

The dry waste is taken to a shed in the back of the complex. We follow the cart being pushed by these two quiet young women to the shed where we see two other women sitting inside, amidst ceiling high piles of papers and plastics, sorting through the refuse. My interviewee explains to me that the women are employed to do secondary and tertiary levels of segregation, where paper is separated from plastics, and high value items like milk packets, shampoo bottles and glass are set aside. We are joined by a young man who is introduced to me as the supervisor of Project Green X. It is his job to make sure that the whole operation runs smoothly. My guide tells me that the salaries of the supervisor and the women collecting and segregating waste are paid with the money the complex earns from selling the recyclables to different vendors. She tells me that the plastic covers are sold to a company that uses them to lay tar roads, paper is sold to a paper recycler and the milk packets and glass bottles are sold to local *kabbadiwalas* (neighborhood scrap dealer, usually from the informal sector).

After a quick chat with the supervisor and his assistants, she takes me to the clubhouse and restaurant in the complex. She quickly orders a cup of tea for me and we sit down for the formal interview. We are joined by another lady who is also on the project's committee. Both my interviewees are middle-aged women and their enthusiasm to talk indicates that they are committed to this initiative. They spend a substantial amount of time every week coordinating different aspects of the project. In the course of the interview, I ask them about how the project started, how it is implemented and what the challenges have been. They tell me that what started as a discussion between a couple of friends grew in momentum as they reached out to their neighbors. A couple of residents took on leadership roles and obtained approval and funding for

the waste segregation shed from the property developer. We also discuss how the committee tries to encourage and enforce segregation. The ladies tell me that before the project launched, they spent a lot of time educating residents about the need for waste management and recycling. They organized presentations where they invited residents to come and learn about Bangalore's garbage problem and the environmental and economic benefits of recycling. They also focused on training domestic help and housekeeping staff as they are ultimately responsible for the hands-on collection and transportation of the waste.

The organizers also have various tactics to encourage and compel segregation. They periodically organize events to reinforce the message of the program. The homes that are part of the initiative have stickers on their mailboxes that say *I am green! Are you?* The committee also organizes surprise bi-monthly checks where block champions (committee members who are in charge in each block) go with housekeeping staff to individual homes to see if garbage is being segregated properly. As my interviewee says: *"The housekeeping staff tells us when an apartment is not segregating as they are supposed to. They don't say anything to them themselves, as the residents will not listen to them. It is our job to follow up"*. They tell me that persistence and peer pressure is the key to making sure everyone segregates. Not everyone in the 1000 apartment-strong complex is compliant but there are more apartments participating in the zero waste management initiative, than not.

Project Green X is not alone in how it operates. Many of Bangalore's gated communities and apartment complexes have adopted similar waste management programs. In general, these programs are initiated by a group of motivated residents who voluntarily take on leadership roles and assemble the different components of the waste management apparatus. This involves convincing their neighbors about the need for waste management, contacting 'experts' in the city and practitioners in other communities for best practices, working with building owners (usually the real estate developer) to build any required infrastructure, and training housekeeping staff and domestic workers to collect and segregate waste. They repackage and re-envision 'old' practices using new labels, and through this repackaging help validate and legitimize these activities again (e.g. recycling going from a thrifty practice to a green practice).

These leaders also take on an active role in monitoring the day-to-day operations of the program. Using multiple tactics such as awareness drives, special events, signage and old-fashioned face-to-face goading, they encourage and enforce the segregation of waste within households. For example, in another apartment complex, the "Lady Generals" who run the waste management initiative display the names of non-compliant residents on a notice board, publically identifying and shaming them. Through these actions, these leaders are trying to make waste segregation and recycling the new norm in these neighborhoods.<sup>2</sup> These attempts to create new norms around waste management have not always been successful, and there are some cases where a waste management initiative has been disbanded because of resistance from some residents, usually related to concerns about health and aesthetics. In other cases, waste management systems that have been set up with great enthusiasm have fallen into disrepair in the absence of monitoring by resident volunteers. In all these cases it is clear that the success of these programs is highly dependent on the ability of leaders to convince and compel their neighbors, manage workers and monitor the system. These volunteers actively draw on

<sup>2</sup> This suggests that normative messaging can be a useful way of encouraging and enforcing behavior change in developing world contexts, just like they are in the West (Schulz 1999, 2002).

their social capital and networks to organize systems that can provision sustainable waste management behaviors in their neighborhoods.

The infrastructure and processes set up at the level of the neighborhood and community in turn produce and are reinforced by changes in household behaviors. In an interview with a housewife who is part of a community waste management initiative, she explains how she ensures the segregation of waste within her home

*“I became interested in waste management and started separating my waste at home. Of course, my husband and sons were initially not that keen, but they have now begun to follow my lead. The waste is separated into two main categories, dry and wet, inside my house. I have instructed my cook to strain vegetable and fruit peels and keep them aside, which I then put in my compost pot. Leftover food is thrown away as my compost doesn’t do well if I add cooked food to it. My maid (who sweeps the floor and empties the dustbins) knows that all paper, plastic and metals should go into one bag and only dust and other things should be discarded. I monitor it occasionally, but right now my cook and maid know what to do with the different types of waste. My sons have been harder to train, but they are getting the idea too”.*

#### 4.2.2. Case 2: Circulation and Institutionalization: Experts, Networks and Policies

The emergence of city-wide coordination groups that promote solid waste management has helped replicate the set-up described in the first case in more middle class neighborhoods and complexes. One such group is the Solid Waste Management Roundtable (SWMRT) which is a consortium of non-governmental organizations, advocacy groups, environmental entrepreneurs and individual volunteers who function as waste management facilitators in the city of Bangalore. In a visit with a SWMRT member to an apartment complex that was interested in going zero waste, I got a sense of how these ideas circulate and replicate, and how SWMRT enables this process.

The complex we visited was a relatively new luxury gated community in the outskirts of North Bangalore. During the visit, the SWMRT representative made a presentation to the residents of the apartment complex on why waste management was the need of the hour. His PowerPoint slides talked about multiple problems ranging from the threat of global warming (especially in terms of how waste contributes to greenhouse gas emissions); to the plight of villages that abut landfill. The presentation included pictures of small children sitting on heaps of garbage in a landfill, eliciting sighs from the assembled audience. A graphic picture of a cow’s innards filled with plastic covers provoked gasps. After this general introduction on *why* waste management is important, he moved on to talking about the *how*. He ran through the different steps that comprise the day-to-day operations of a waste management program. While talking about each of these aspects, he told the assembled audience about tips and techniques that had worked in other programs in Bangalore. For example, he spent a fair amount of time talking about the tactics that other successful waste management programs use to encourage and enforce compliance among residents, such as putting up signs on mailboxes, organizing special events, refusing to collect waste if it is not segregated, getting children involved and organizing competitions, among others. He also suggested that the apartment complex give whatever money was collected from

selling recyclables to housekeeping staff and domestic workers, to compensate them for the extra work and motivate them to do it properly.

In addition to aiding the process of behavior change through information provision, one of the most important things that SWMRT does is put the sellers of recyclables (i.e. the gated complexes) in touch with buyers. For instance, we were accompanied on this trip by a contractor from a large Indian corporation that runs a Wealth out of Waste (WOW) program. This corporation buys paper and other recyclable items from households and businesses and then either recycles it in-house or diverts it to other recycling streams in the formal and informal sector. When I asked my interviewee about how this worked, he told me:

*“This is what we do- we put apartment complexes in touch with vendors who will go to the apartment once or twice a week, collect the segregated recyclables, pay the stipulated amount for the items and take it to scrap dealers for recycling (a modern, corporate, formalized hawker or kabaddiwala, I think). We work with multiple contractors like this one- different ones for different parts of the city. In the absence of a BBMP (city municipality) recycling system, private vendors step in and help collect the recyclables. If you don't have infrastructure, use personal relationships to get things done and make it convenient”*

This SWMRT member and others like him have emerged as ‘experts’ on waste management in Bangalore. They become the go to people for questions on how to set up and maintain a community waste management program. In the absence of institutionalized mechanisms for recycling and composting, these people and the organizations they are involved with transfer information, put buyers in touch with sellers, communicate best practices from one site to another and help troubleshoot when problems arise. During our visit, I witnessed an incident that typified this troubleshooting aspect of SWMRT’s work.

On our tour of the gated complex, we went to see the sewage treatment plant. The building that housed the plant also had an organic waste composter, which was currently not in operation. The organic waste composter had been put in during construction because of a city ordinance that required all new real estate developments to install and operate one in their complexes. However, this one was not currently being used. When asked about this, the facilities manager of the complex (who is employed by the real estate developer to maintain the complex, deal with water and waste issues, monitor security etc.) told us that he was not able to use the machine as he did not have proper training and had various questions about how to operate it. The SWMRT member immediately stepped in with some answers to his questions, and also said that he would send someone to the complex to train the facilities manager. When I revisited the complex six months after this initial visit, the organic waste composter was operation and used to compost the wet waste collected in the complex.

SWMRT members focus on both the behavioral and structural barriers that constrain the adoption of waste management practices. In addition to setting buyers up with sellers, SWMRT members emphasize proper training of the facilities staff, i.e. the manager and the workers who are employed to maintain the lawns, clean the pools, sweep the common areas and collect waste. Throughout our visit the SWMRT representative kept communicating with the facilities manager (usually in Kannada, the local language, though. But he switched to English when he spoke to the residents). They discussed the nitty-gritties of the process, such as where the dry waste will be stored, what days it will be

collected and who will be the point of contact. It is clear that these employed maintenance and waste workers are as critical to the success of this initiative as the residents or the SWMRT expert.

Before we left, I asked the lady who invited SWMRT here how she heard about their work. She told me that before moving here, she used to live in another apartment complex in the city, where SWMRT had made a presentation a year ago and helped the complex become zero waste. She had been in touch with this SWMRT representative ever since, and had even taken him to her children's school to give a talk on waste management and institute a zero waste program there. When she moved to this new complex she wanted to continue managing her waste, and contacted him for help.

SWMRT's message spreads through workplace, neighborhood and online social networks to different parts of the city, and their work has been covered in many media outlets. According to the group's website, they have managed to set up waste management programs in 18,000 households and 180 institutions in the city of Bangalore.<sup>3</sup> In the space of a few years, this group has emerged as a key player in waste management in the city.

Many of the waste management advocates in the city, including SWMRT members, are middle-aged housewives or retired male professionals, whose engagement with waste started off with the intention of cleaning up their neighborhoods and improving the environmental quality of their surroundings. It is through the course of their (often failed) efforts to clean up their streets that they began to encounter the environmental dimensions of the waste problem. As one of my informants says:

*'I realized cleaning up won't work. The road will just get dirty again the next day. If we are to avoid waste on the roads, then it has to be diverted at source, and for that segregation is essential. The idea of segregation is that, if you separate waste into different components at source, and each of these components can be dealt with in a different way'.*

SWMRT and other middle class waste management advocates frame waste as a predominantly environmental and resource issues. This narrative is summarized by a Facebook post from a prominent waste management advocacy group in the city. As the post says:

*"Segregate waste and improve the economy, environment, rag picker livelihoods, water quality, air quality and lives of villages around Bangalore. Put back precious recyclable material back into the loop and feel awesome about yourself. OR. Don't segregate waste and pay a fine. It really is a no-brainer, isn't it?"*

These middle class advocates point out that what is dismissed as piles of putrid trash by the majority of the city's middle class residents actually contain a number of precious resources that could be recycled back into use. The bulk of Indian waste is organic in nature and can be used to make compost for agriculture. These methods of managing waste also reduce the need for dumping in landfills, thereby avoiding environmental costs like greenhouse gas emissions, polluted land and water. By framing garbage as an environmental issue they advocate for solutions that, in their view, minimize the environmental impacts of garbage, while extracting the maximum resources out of it. The prerequisite for this, according to this group, is the segregation of waste at source by generators.

<sup>3</sup> As depicted on this Green Map on their website: [http://swmrt.com/index.php?option=com\\_content&view=article&id=57&Itemid=83](http://swmrt.com/index.php?option=com_content&view=article&id=57&Itemid=83) (last accessed 8 June 2012)



Consequently, they have focused their efforts on figuring out how to make waste generators, particularly middle class households, change their behaviors and segregate waste at home. Post-segregation of waste, recycling, composting, biomethanization and biogas are among the solutions these actors advocate. They actively oppose the landfilling of waste.

In addition to propagating decentralized waste management systems in private (and mainly middle class) spaces like apartment complexes, gated communities and commercial complexes, SWMRT has been trying to change the city municipality's waste handling and disposal systems. SWMRT members tell me that they feel that the State has failed to deliver efficient, reliable and environmentally sound waste management systems. For one, despite having a door-to-door system of waste collection in place, a significant amount of waste reaches the street, constituting a public health hazard. Further, the municipality's waste disposal systems are in violation of the Municipal Solid Waste Rules 2000, which state that only reject materials that cannot be recycled or composted should be landfilled. The group first took these issues to the State through a public forum called the *lok adalat*.<sup>4</sup> It used this forum to petition the local government to set up decentralized dry waste management services. After two years of trying to lobby for the installation of decentralized waste collection and segregation centers in the city, SWMRT decided to intensify their advocacy and lobbying efforts, and filed a Public Interest Litigation in the Karnataka State High Court (the apex court in the state of Karnataka where Bangalore is located). Since then, there has been a flurry of action in the city, from the courts, the government and from civil society actors. In response to the Public Interest Litigation, the High Court passed a ruling calling for an end to the landfilling of waste and mandating the segregation of waste at source by all households and commercial establishments. It also ruled that 'bulk generators' of waste (defined as apartment complexes of more than 10 households, and all commercial establishments) be required to process their waste in-house, and has asked the corporation to set up decentralized waste processing units in the city. These rulings and policy actions dovetail closely with the agendas and stated objectives of middle class waste management activist groups like SWMRT.

### **5. Behavior change through networked ecological citizenships?**

In the narratives presented here, a small group of motivated individuals take on leadership roles in instituting and managing waste management schemes in their neighborhoods. They do this in multiple ways: they encourage their neighbors to see waste management as an important and meaningful activity by conducting awareness campaigns, they create new norms and discourses around waste and its management, they organize and train employed workers to collect and segregate waste, and they monitor and enforce waste management in their localities using multiple strategies. Many of these individuals have also gone on to form and participate in city-wide advocacy and coordination networks, and emerged as 'experts' on waste management in Bangalore. These individuals collectively enact changes in their cultural and social contexts to reduce the informational, normative and structural barriers to household behavioral change. They also engage with local government to institutionalize sustainable waste management practices.

Ecological citizenship theory asserts that individuals and communities that occupy a greater share of the global ecological footprint, i.e. ecological debtors, have proportionally greater obligations to make changes to their own resource-consuming and waste producing-practices (Dobson 2003). Applying

<sup>4</sup> Translates to *People's Court*. It is an alternative avenue for dispute resolution that is hedged by the State High Court through the Court Legal Service Committee. *Lok Adalat* benches tend to have 'expert' members. For example, the solid waste management case was heard by a bench comprising a sitting High Court judge, and a retired member of the Karnataka State Forest Department, who is considered to be an expert of Bangalore's environmental problems.

Andrew Dobson's normative theory of ecological citizenship, one can interpret the actions carried out by these individuals to constitute the discharging of historical and contemporary obligations towards ameliorating relationships of identifiable harm. While Dobson discusses these obligations in a primarily transnational sense (as horizontal relationships of ecological debt and credit existing between car drivers in the US and the people of Maldives for example), by extension these ties of obligation and identifiable harm exist between people within the same national borders.

The new middle classes are among India's highest footprint consumers (Myers and Kent 2003) and one significant externality of their consumption practices is the waste that they produce within their homes (Baviskar 2011, Mawdsley 2004). In the cases I describe in my paper, new middle class individuals recognize that their household waste, if disposed in landfills or dumped on streets, produces environmental and public health impacts that are predominantly experienced by the poor, especially those who live in villages that abut landfills, and by animals and the ecosystem. As the producers of wastes that either rot in landfills polluting land and water or lie discarded on streets jeopardizing public and animal health, they have an obligation to take up public and private actions to address these impacts. These individuals call on these obligations and discourses of responsibility to motivate themselves and their communities to adopt pro-environmental behaviors like recycling and composting. By taking ownership of the environmental impacts of the waste they generate and by spending time, effort and money on addressing these impacts using a set of solutions they deem appropriate, they perceive their actions as benefiting diverse human and non-human constituencies. Moreover, the expression of this ecological citizenship is inherently collective. These individuals reach out to others to form networks and coalitions within their neighborhoods and across the city. As these coalitions grow, their spheres of influence increase and they begin to be able to change public policies. This makes them potent agents for cultural and institutional change.

In the cases I describe here, the collective dimensions of these processes are essential to its private expression. For one, in the absence of infrastructure, waste management requires collective coordination to ease structural barriers. Also, while some form of waste management has existed among Indians for a long time, waste continues to be met with apathy, distancing or disgust in many quarters of middle class Indian society (Kaviraj 1998, Ghertner 2011). In such a situation, framing waste as an environmental issue where every individual has a responsibility to take ownership and contribute to its amelioration is a relatively new project. This requires the creation of new norms and discourses to support it, which cannot be done by individuals alone. Finally, through networked collective action, these initiatives are beginning to scale from the level of households and neighborhoods to city-wide schemes. The work of leaders who work collectively through networks is critical to all these processes. This echoes findings by Kennedy in Edmonton, Canada where the participation of ecological citizens in a network engenders cultural and structural change (Kennedy 2011).

The individuals and communities I describe actively leverage their class-derived cultural, social and economic capital to effect changes to their structural and social contexts. The preferences and actions of urban new middle classes have tangible impacts on urban spaces, as previous work on slum demolitions has shown (Ghertner 2011). Middle class groups have access to certain key technologies and relationships that enables the sort of collective action we see here. First, internet access has made it much easier for groups across the city to network, coordinate and share knowledge and resources. It has also enabled the detailed chronicling of various successful efforts on blogs, Facebook and websites, which increases the circulation of these ideas. Middle class groups have relationships with various media outlets and their concerns and actions get frequent coverage, giving them more

exposure (Upadhyaya 2009). Some middle class individuals also have the ability to access bureaucrats and other government officials, unlike members of the working classes, which means their ability to influence policy agendas are also greater (Harriss 2006). Recent work in Delhi and elsewhere has also shown that middle class groups use the Courts and the judiciary to push forward their projects through Public Interest Litigations (Baviskar 2011, Ghertner 2011), a strategy used by SWMRT members too. In summary, the elite positions of new middle class individuals, and their access to social, economic and cultural capital enable them to be effective networked ecological citizens who can affect cultural and institutional change. Even if the total number of waste management adopters or advocates is small compared to the population of Bangalore, they can have effects on urban landscapes that are disproportionate to their size.

Recent developments in Bangalore point to this rising influence of middle class waste management advocates. In October 2012, the Bangalore city municipality passed legislation mandating segregation of waste at source in households and businesses. This landmark decision came in response to a series of protests by the residents of villages that abut the large landfills outside Bangalore, where city trash is dumped indiscriminately. The villagers were protesting the contamination of their land and water bodies by leachates from the landfill, and the resultant illnesses and deaths in their communities. City waste management advocates, including the ones I describe in this paper, came out in support of these protests and leveraged them to push forward reforms in the waste management system through the judiciary. In response to this crisis, and under direction from the Karnataka State High Court, the city municipality closed the landfill and mandated segregation of waste at source, recycling of dry waste and composting of wet waste. While the infrastructures for city-wide zero waste management are yet to be commissioned, the priorities and proposals of the new middle classes are central to these developments.

While ecological citizenship theory in general assumes that individuals adopt pro-environmental behaviors out of their political obligations to ecological creditors and motivated by an internal commitment to do justice (Dobson 2003), it is also critical to note that these actions also produce positive outcomes for the ecological debtors themselves. The new middle classes benefit directly from living in cleaner cities with better air and water quality. Their desires to participate in initiatives that clean up the city directly reflect local anxieties about degrading environmental quality and lifestyles. Clean and green cities also mesh well with middle class aspirations to live in world class cities (Ghertner 2011). Soper's formulation of 'alternative hedonisms' where she sees people entering into pro-environmental practices for both self and other oriented reasons (Soper 2007) provides a useful extension to the ecological citizenship concept as it allows these activities to be understood as not just being purely altruistic or derived only from a political obligation to do justice, but also encompassing self-interest.

Thus, ecological citizenship theory helps analyze and highlight the voluntary pro-environmental behaviors taken up by the socio-economically privileged and high-consuming new middle classes in addressing the environmental impacts of their lifestyles. It helps articulate the latent potential in these networked communities to bring about behavioral, cultural and institutional change through individual and collective actions.

However, the theory's focus on the obligations of ecological debtors and relative silence on the rights and roles of ecological creditors limits its applicability and hence its usefulness for examining the potential for equity and justice in proposed debtor-creditor relationships. Hayward best summarizes this critique of ecological citizenship theory saying "the environmentalism of the poor seems to stand

in an unclear or problematic relationship to ecological citizenship” (Hayward 2006a Pg. 445). Dobson in a response to Hayward’s critique defends his formulation by saying that ecological citizenship is not a status or an entitlement but a practice, and consequently, not a privilege that one seeks to achieve but an obligation that one tries to avoid. Individuals can find their place in the ecological citizenship structure by asking “do I owe or am I owed” (Dobson 2006, Pg. 449). Latta in an acute assessment points out that one of the biggest problems with the ecological citizenship framework is that it ignores existing inequalities in social status and political power. To quote Latta “An emphasis on obligation as the core feature of ecological citizenship necessarily leads to a focus on already powerful actors as the key protagonists” (Latta 2007, Pg. 385), while reducing the roles of the so-called ‘recipients of ecological justice’ (Dobson 2006, Pg. 449) to constitute nothing more than bystanders with limited agency in the ecological citizenship polity (Latta 2007).

Applying these critiques to the empirical case I present in this paper shows how the theory, with its normative assumptions, can replicate the unequal social hierarchies that produce imbalanced consumption patterns and unequal ecological footprints in the first place. The systems described in this paper are dependent on a set of actors whose job descriptions have older cultural roots. The powerfully connected elite actors are reinforced both by paid workers who sit in sheds and sort through waste and the domestic servants who act as conduits in enforcing good behavior amongst elites. As Ray and Qayum (2011) show in their work, these *cultures of servitude* are an integral part of middle class lifestyles and politics. The waste management systems being promoted by the middle classes rely on paid labor within the home and in the community to carry out waste handling functions such as segregation and transport, and consequently replicate these cultures of servitude. These waste workers are recruited from the city’s urban poor whose ecological footprints are significantly smaller than those of the middle classes (Parikh et al. 2009), and would consequently be classified as ecological creditors. However, because of its focus on obligations, and voluntary and internally-driven exercise of citizenship, ecological theory obscures the roles of individuals who *do not* themselves live unsustainably.

In my cases, the fact that such ecological creditors, who are themselves ‘owed justice’, are actively engaged in producing the pro-environmental behaviors of the ecological debtors, further problematizes this formulation. In essence, do the waste workers I describe in my narratives count as ecological citizens as per Dobson’s definition? How does ecological citizenship understand the livelihood practices of the poor whose actions produce the very same positive environmental outcomes that are produced by the voluntary and ‘virtuous’ actions of the well-off? While Dobson asserts that claiming an ecological citizen identity is not a privilege but an obligation, its normative connotations unwittingly laud the often marginal voluntary actions of the ecological debtors without bestowing the same ‘status’ to those who already live within ecological bounds.

In summary, my case study shows that while ecological citizenship theory helps identify the potential that networked elite action has for engendering sustainability, the culturally-situated dynamics of waste management in urban India demonstrates that the theory has limited applicability in situations where pro-environmental behaviors are made possible by collective networks that are composed of people with different levels of obligation, capacity and social status, and where contractual relationships of service and servitude exist between members of these networks. This analysis points to the need for a focus on the processes and political arrangements that produce ecological citizenships and pro-environmental behaviors, and an explicit engagement with the roles, capacities, priorities and powers of the diverse actors who are involved in these processes. As Latta suggests, recasting ecological citizenship as a democratic process with a focus on the conflicts that shape it

evaluates the kinds of relations that might promote a just and sustainable society (Latta 2007). For the waste management cases I discussed here, this would render the dynamics of voluntary action and incorporation in ecological citizenship more visible and allow an evaluation of the differential contribution of actors in relation to these positionalities.

## **6. Conclusions**

Rising consumption-driven greenhouse gas emissions in India necessitate investigations of the environmental behaviors, ethics and politics of the new middle classes, a strategic section of the Indian population (Mawdsely 2004). The new middle classes are important to sustainable consumption and production efforts not only because of their resource-intensive consumption patterns, but also because of the hegemonic role they play in the political and cultural imaginaries of the nation (Fernandes 2009, Upadhy 2009). My work represents one of the first studies to carry out an ethnographic investigation of a 'pro-environmental' behavior in India and speaks to the intersection of environmentalism, consumption and citizenship research. Recycling or composting do not, by themselves, address or ameliorate the consumption of the new middle classes. However, they can reduce the negative environmental impacts produced by the landfilling and burning of the increased amounts of waste that are being produced as a direct consequence of this heightened consumption. More importantly, they are widely considered to constitute a fundamental component of a pro-environmental lifestyle. This makes them pertinent to sustainable consumption and production efforts.

In this paper I have described the process by which particular type of pro-environmental behavior is emerging among Bangalore's new middle classes. Waste management is being implemented in Bangalore through the work of individuals who collectively enact changes in their cultural and structural contexts to enable these practices. These cases also demonstrate that these systems are highly dependent on local actors whose roles and positions have older cultural roots, such as the domestic servants and waste workers who are often responsible for the actual implementation of these systems

By applying ecological citizenship theory (Dobson 2003) and recent work on the role of neighborhood networks in changing behaviors (Kennedy 2011) I analyze and highlight how socio-economically privileged individuals from the new middle classes of Bangalore can simultaneously change personal behaviors, while also participating in collective action to change norms, institutions and policies to support pro-environmental behaviors. Thus, elite volunteerism is a potent force in urban India and can produce significant behavioral, cultural and structural changes. Through my narratives I also show how the implementation of these middle class conceptualized waste management systems is dependent on replicating a culture of servitude (Ray and Qayum 2011) within and outside the home, where waste work is delegated to paid domestic servants, housekeeping staff and other workers. While this will come as an unsurprising finding for anyone familiar with Indian cultural politics, it provokes certain questions of theoretical formulations such as ecological citizenship.

I contribute to theoretical and empirical work on ecological citizenship by showing how the theory's focus on the political obligations of ecological debtors, who are often also the socio-economically privileged, fails to see the contributions of those actors (the domestic servants and neighborhood waste workers), who through their livelihood practices play a critical role in producing the systems that make pro-environmental behaviors possible among the elite. This critique is in alignment with

Hayward (2006a, 2006b), Latta (2007) and Machin (2012) and provides an empirical instance of ecological citizenship's inability to conceptualize the 'environmentalism of the poor'.

The theoretical problematic my case substantiates provokes avenues for further empirical research. Critical ethnographic studies that look at the social, cultural and political processes that produce behaviors that are recognizable as pro-environmental or constituting ecological citizenships are important to sustainable consumption and production research. Such research would have to look at practices both within and outside the home, and also pay explicit attention to the roles, capacities, status and powers of the different actors who are involved in producing these behaviors. A focus on the citizen relations that produce sustainability, however defined, will help ascertain how sustainable consumption and production relates to social and environmental justice concerns.

The narratives present here also provoke new lines of inquiry and analysis for this case. As the waste management movements I describe scale from neighborhood to city-wide initiatives, the environmental politics they embody begin to have more tangible and widespread consequences. Middle class involvement in waste management impacts the lives of domestic workers within the home, waste workers in the neighborhood and municipal conservancy workers and waste pickers in the city. While the middle classes enjoy social, political and economic power and privileges, the urban poor who are engaged in waste-related activities for their livelihoods have been historically and contemporarily marginalized. In such a scenario, critically analyzing how these middle class movements interact with the State and with other class groups in the city becomes increasingly important. An explicit engagement with power and politics makes theories of ecological citizenship more relevant to sustainable consumption and production research in emerging economies like India

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