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**Community Participation in Solid Waste Management
in Rapid Urbanizing Market Oriented Countries:
Morogoro Experience, Tanzania**

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Abstract

Community participation in municipal solid waste management (MSWM) is a global response to unprecedented rapid urbanization facing poor countries that has overwhelmed local government's ability to plan and manage solid wastes. Even though many poor countries adopted it since early 1990s, the state of MSWM is still critical. This study, which was conducted in Morogoro municipality, aimed to investigate the impact of organizational, coordination, legal resource and community participation factors on achieving sustainable community participation (CP) in MSWM in a market economy. The research involved a randomly sampled population of 266 households out of 26642 total households in Morogoro municipality, and several CBOs engaged in MSWM projects. Questionnaire interviews, observations, in-depth interviews and documentary reviews were used to collect data. The SPSS computer programme was used to analyze variables of the study, complemented with qualitative data in descriptive analysis. The findings show that Morogoro municipality has not yet achieved effective CP in MSWM due to various reasons, including the lack of commitment to effectively involve local communities in the strategy, existing outdated MSWM laws, and laxity in enforcing them by elites. The study also revealed that elites lacked commitment to practice the strategy. Thus, it recommends that CP in MSWM should be encouraged; while also enforcing existing laws and reviewing outdated ones so that those that generate waste pay for its management.

Introduction

Community participation in municipal solid waste management in resolving solid waste management crisis in rapidly urbanizing poor countries under a market-oriented economic situation is a timely option. Many literatures have written extensively on the failure of poor local governments in developing countries to efficiently plan and manage municipal solid wastes due to rapid but low level of urbanization (Okpara, 1999). Africa and Asia, with urban growth rates of 4.9% and 4.2%

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respectively between 1990 and 1992, experience low urbanization in the world, but record the highest rates of urbanization (United Nations, 1995). Developed countries have sustainable urbanization and great awareness on health effects of municipal solid waste to humanity and the natural environment. These factors enhance efficiency in municipal solid waste management systems through waste recycling, composting, incineration, and controlled sanitary landfills (World Bank, 1999). Unprecedented urbanization in developing countries, coupled with limited resources, modern technology and traditional institutional factors have made solid waste management critical especially at the cost of the majority vulnerable communities' health risks.

According to Onibokun and Kumuyi (1999), many municipalities in developing countries spend 30-50% of their constrained budget on municipal solid waste management. However, they manage to collect only 30-60% of the solid wastes, leaving over 50% of the urban population barely served. Moreover, over 80% of waste collection vehicle fleet and equipment of developing countries' municipalities is out of service, in repair status, or too old to perform efficiently and satisfactorily (World Bank, 2006; Onibokun & Kumuyi, 1999). Furthermore, the problem is complicated by often-impassable narrow streets that greatly impede collection of wastes in informal settlements (URT, 2005; World Bank, 2006). All these factors have critical environmental polluting effects to poor urban communities. For example, over 5.2 million adults and 4 million children under-five deaths are caused by environmental diseases each year (UWEP, 1996).

This worsening urban and wide natural environmental degradation prompted the convention of the UN Earth Summit in Rio de Janeiro in 1992. The Sustainable Cities Programme (SCP) was born primarily to underline 'participatory approaches' to replace the 'conventional approaches' to municipal solid waste management. Capitalist advanced nations imposed community participation strategy and other stakeholders in MSWM to complement poor governments' resources towards achieving sustainable MSWM under market-oriented economy (Kalwani, 2007).

Tanzania was one of the poor nations that adopted the participatory approach involving communities in MSWM since early 1990s, starting with Dar es Salaam City. This was due to the collapse of its public sector since late 1970s. Records show that in the 1980s and early 1990s the Dar es Salaam City Council failed to provide solid waste collection services

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efficiently due to resource constraints caused by rapid urbanization (Majani, 2000). Salha and Mansoor (2006) conducted a study in Dar es Salaam recently on privatization of solid waste collection services and found out that before privatization in 1991, the city was generating 1400 tonnes of solid waste per day, of which only 5% was being collected. By 2006, privatization of solid waste collection services had covered 44 out of 73 city wards; and that daily solid waste generation was estimated at about 2500 tonnes, of which roughly 48% was collected. They observed that this achievement was hard to maintain. It was greatly influenced by households' attitudes and behaviours, including paying the solid waste collection service user charges. Whenever households were involved in solid waste management, positive results on solid waste collections were achieved. The study concluded that the privatization of solid waste service provision would be better if customers (households) were more involved in the planning and decision-making (Salha & Mansoor, 2006).

From Dar es Salaam, the CP in MSWM strategy was replicated countrywide for the same reason that municipal solid waste management issues were equally critical in other urban areas of the country. On the average, more than 60% of solid waste is left uncollected in most urban centres. Solid wastes are often crudely dumped, leading to blockage of drains and various kinds of pollution and health hazards (Ngulume, 2003). A study by Rwegasira et al. (1996) found out that Morogoro municipality ranked first in uncollected municipal solid waste. It is now over two decades since this strategy was introduced in developing countries in general, and Tanzania in particular starting with Dar es Salaam City in 1992. Yet, municipal solid waste management in almost all the urban regional capitals of the country is still worse off as witnessed by this study.

Background to the Problem

Community participation in MSWM in collaboration with other stakeholders in municipal solid waste management under a market-oriented economy framework was expected to generate a sustainable clean and healthy urban environment for the majority urban poor living in informal settlements. However, since its adoption in early 1990s, mounting uncollected wastes, paralleled with rapid urbanization, continue to pollute urban environments diversely at the detriment of the urban poor communities who live in informal settlements. The lack of effective community empowerment, participatory organization, coordination, local resource mobilization and

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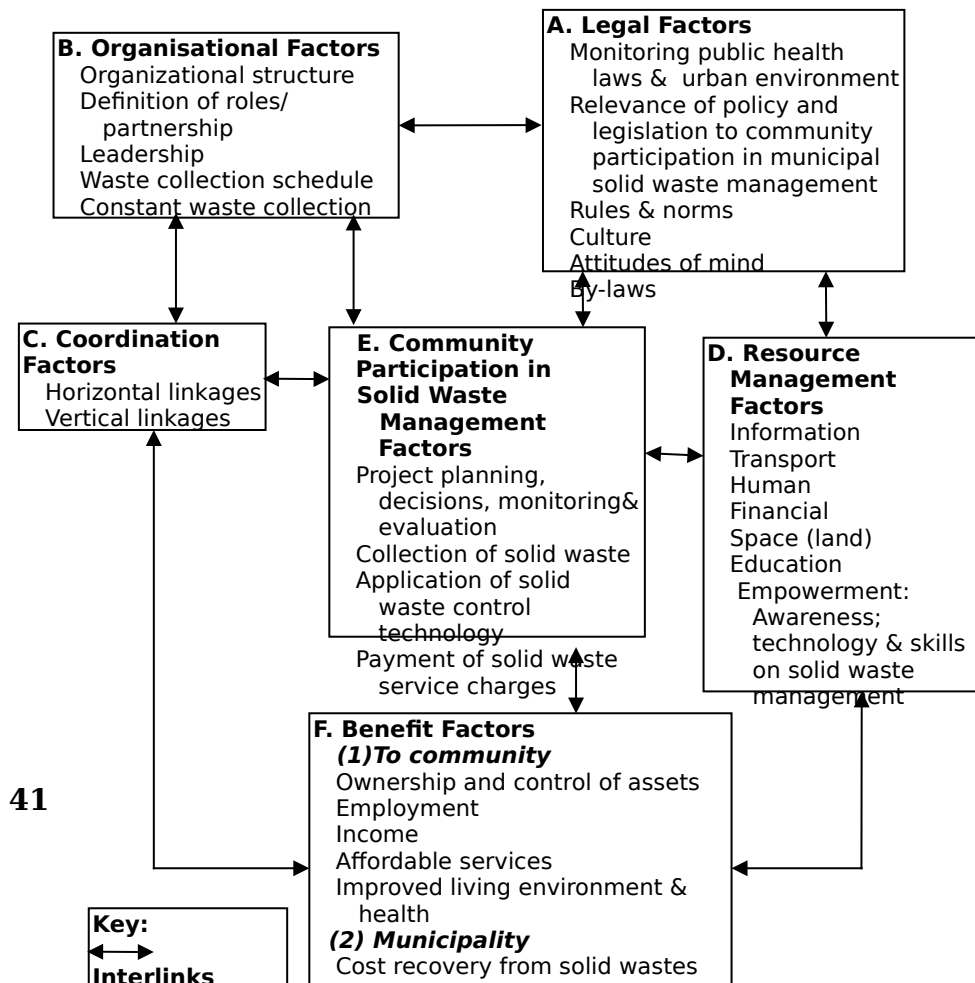
weak institutional framework has led to a failure raise the strategy to sustainable levels in a market-oriented economic situation.

The main objective of this study therefore is to investigate the impact of organizational, coordination, legal resource and community participation factors on achieving sustainable CP in MSWM in a market economic situation in informal settlements, using the case of Morogoro municipality. The aim is to add knowledge on the global catch-phrase ‘community participation’ in various urban social developmental issues underlined in the UN Sustainable Cities Programme for sustaining MSWM among the urban poor. This knowledge is expected to add to the expanding research works on how to empower poor communities with the appropriate skills, knowledge and technology to self-sustain CBOs involved in municipal solid waste management projects in collaboration with other stakeholders.

Theoretical Background

Conceptual Framework

In brief, the conceptual framework suggested that effective CP in MSWM is interlinked to different variables and their contents as shown in Fig. 1.



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Fig. 1: Conceptual Framework - Community Participation in MSWM

As Fig 1 shows, it involves concerted efforts from different stakeholders in MSWM, symbolized by interlinking arrows ranging from legal, organizational, coordination, and resource factors focused to community participation in MSWM projects.

Theoretical Background

The assessment on the workability of the CP in MSWM in a market-oriented economic situation can better be done through the use of an efficient economic theory. This study chose the institutional economic theory (IET) for its efficiency in analyzing inter-institutional transactions (Majani, 2000). The theory was propounded by North (1990) who asserted that institutions were the rules of the game in a society. They are the *human devised constraints* that shape human interaction. In the course of life, people are continuously involved in reflecting and actively setting out to transform their conditions of life. In this respect, therefore, the theory tries to cultivate the understanding that no ‘institution’ can exist on its entirety but through interaction with others. Nevertheless, these institutions have to be controlled by norms and rules for rational transactions to occur. The government is the custodian of such rules. In essence, the theory underscores that under market-oriented economic situations, transactions are guided by rationality, price mechanism—or demand and supply—determined by the technology employed, costs of transacting and production. **By is bounded rationality i.e. fair transaction costs based on transparency and exchange of perfect information in a market-oriented economy (North, 1990).** This aspect is central to this study as it seeks to understand the behaviour of institutions—both public and private—involved in the provision of municipal solid waste services. North (1990) asserted several assumptions for this theory as discussed by Majani

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(2000). Institutions are guided by both formal and informal rules. The formal rules and their enforcement characteristics are featured by the need for sudden change in society. **While, informal ones, like norms and social values, are equally useful but change gradually.**

However, three of the models used in that study will be examined briefly due to their relevance to the IET. It is imperative, therefore, to examine one basic contractual model called “Concession Model” which is often employed by municipal governments in Tanzania to contract CBOs in MSW service provision. According to Kaare (2002), the concession model involves a public institution authorizing a private sector or civil society institution to deliver or perform the function on its behalf. In this case, the authorizing public institution does not pay the agent for the service. Instead, it passes on the responsibility to the service user or beneficiary to directly pay the agent. However, under the concession model the service user (purchaser) has no direct rights and legal obligations, which are transferred to the public institution. Nevertheless, in both models the public institution assumes full responsibility. The terms and conditions agreed upon make the concessionaire supply the service and the purchaser pay for it. Many developing countries governments that are constrained by financial and organizational capacity prefer the concession model. It is often practiced by poor countries that have adopted the Sustainable Cities Programme. These countries take privatisation as a way of mobilizing local resources from the private sector. The Dar es Salaam City and Morogoro Municipal councils are among the examples.

What models? There has not been any mention of 'models' so far

Many urban government authorities in Tanzania use the concession model in contracting CBOs handling MSWM in community areas. In actual practice, an urban government authority (principal) contracts a CBO on terms dictated by it, e.g., rate and mode of payment. The principal is legally empowered to alter the contract any time irrespective of consulting the CBO. Moreover, the beneficiary is required by the principal to pay SW service supplied to it by the CBO (agent). The weakness of this model is that it denies the beneficiary (or the purchaser of the service) the opportunity to determine the terms and conditions of service. It does not give the sense of self-regulation on the part of the beneficiary. The model relies on delegating authority to enforce the contract in exclusion of self-regulation by beneficiaries, and increases transaction costs in various ways. This absence of delegation of direct legal rights and obligations to the service user is a weakness as it leaves no control of the agent's performance in the service provision by the service users or recipients. In case the agent

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is not honest, beneficiaries have no mandate to control the agent's deviant behaviour in service delivery. In short, the model marginalizes the agent from the principal, just as the latter marginalizes the beneficiaries (served communities) in planning and decision-making.

Community Participation Approach (CPA)

The community participation approach (CPA) is an elusive concept as it is perceived diversely by different scholars. The UNCHS (1986) defines CPA as an approach that views community participation as voluntary and democratic involvement of beneficiaries in contributing to the execution of a project, in sharing the benefits derived thereof, and in making decisions with respect to setting goals, formulating projects and implementing subsequent plans. This definition, which this study adopts, recognizes community participation in the form of organized community groups such as CBOs. Community participation in this arrangement becomes a moral obligation and a precondition for empowerment, and facilitates development (Friedmann, 1992). This point is emphasized by UNCHS by stating that the success of privatization and voluntary organizations in social infrastructure provision in a neo-liberalism domain will depend on the right direction of decentralization. It is important community participation should go along with the formation of CBOs. If a community does not organize itself, it will be difficult to achieve the collective action necessary in negotiations with authorities, and even with groups among itself such as tenants and property owners (UNCHS, 1994 in Kyessi, 2002:74).

Msambichaka (1998 in Ndaro & Kishimba, 2001: 254-255), identified three main types of community participation strategies. First, is community participation by consultation whereby an external agent approaches a community but often defines the problem and its solution. Normally, the external agents merely go to seek approval of decisions that have been made by other people elsewhere. They also ask the community to implement decisions that have been decided by other people. **Second, is community participation by community contribution to introduced programmes and projects. The community ought to be consulted in order to participate fully in the whole decision process which leads towards making a decision that every member of the community contributes towards the project's activity.** Finally, by community self-help where community participation is not confined to consultations and contributions but also participates fully in other project stages. The problem with this approach is the lack of consensus among stakeholders in a given project as to which

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mode of community participation to be adopted in a particular geographical area according to the prevailing social economic situation (Meshak & Sheuya, 2001).

The Study Area

Morogoro municipality lies between 6° 35′ S and 6° 57′ S; and 37° 33′ E and 37° 50′ E. The Municipality covers around 100km². It is bound by various administrative regions including Tanga and Arusha (North), Coast (East), Iringa and Dodoma (West). **It is a central railway highways node opening Dar es Salaam city's hinterland across borders.**

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The selection of Morogoro municipality was made on the basis that it is a rapidly urbanizing town, with over half its population lacking basic services (URT, 2005). Six out of nineteen wards in Morogoro Municipality were randomly selected. These were Boma, Mbuyuni, Mji Mkuu, Mji Mpya, Mazimbu and Mwembesongo. These partial informal settlements were selected because they were inhabited mainly by a poor urban population. There were no typical informal settlements due to frequent overlap of planned and squatter housing units. The six wards were taken for informal settlements because they had over 50% or all 'informal settlement' characteristics as formally defined by the Town and Country Planning Ordinance Cap 378, of 1958, revised in 1961.

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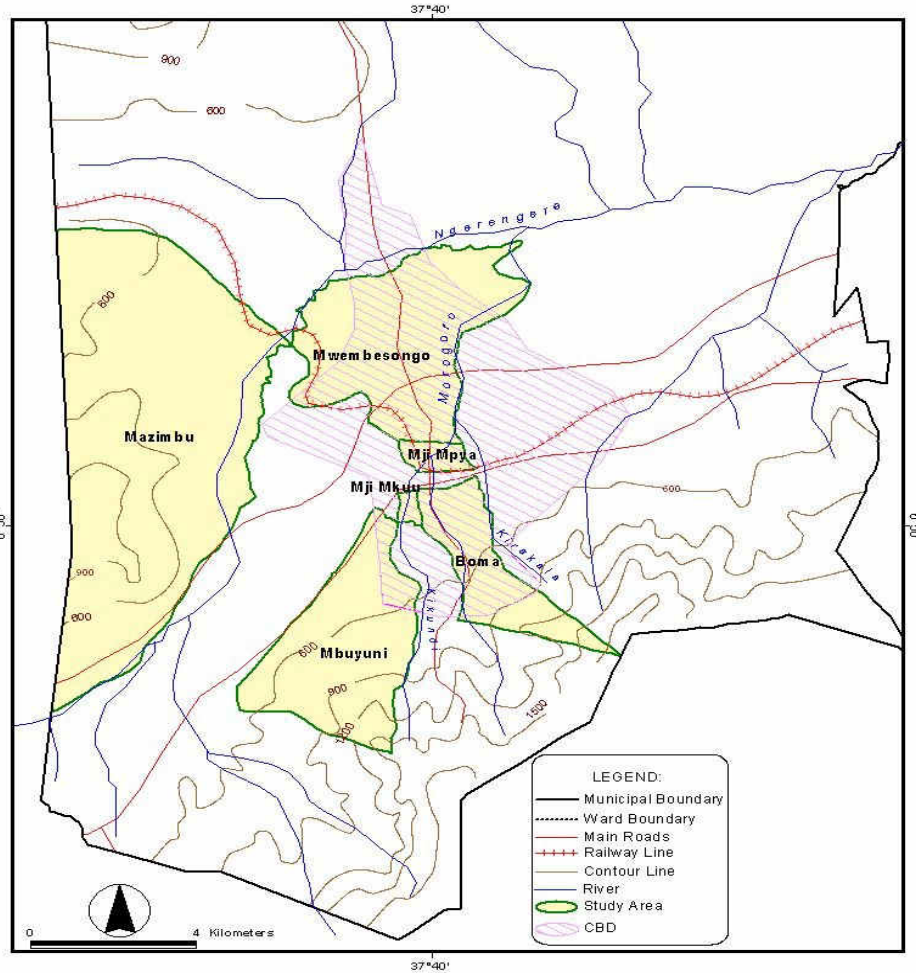


Figure 1: A Map Showing Selected Study Wards of Morogoro Municipality

Source: Own Construct Modified from Morogoro Municipality Records, 2005.

The sampling frame consisted of 266 proportionate representative samples drawn out of a total sample of the six wards with registered 26,642 households (URT, 2003). Table 1 summarizes the representative sample of each study ward.

Table 1: The Study Sample Size for Household Questionnaire on SWM

Ward	Total No. of households	10% proportional representative sample	No. of households sampled
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(PRS) of households			
Boma	1634	1634/ 26642 x 266	16
Mbuyuni	1991	1991/26642 x 266	20
Mji Mkuu	1514	1514/26642 x 266	15
Mji Mpya	2723	2723/26642 x 266	27
Mazimbu	12008	12008/26642 x 266	120
Mwembesongo	6772	6772/26642 x 266	68
Total	26642	X	266

Source: Morogoro Municipality Survey, (2009).

The CBOs running solid waste management in their *mitaa* or community were also randomly picked. These were Kikundi cha Usafi wa Mazingira (KIUM) in Mji Mkuu ward; and Upendo Group in Mji Mpya ward. Moreover, simple systematic random sampling was used in selecting households where the questionnaire was administered. In addition, two types of observations were employed to investigate geographical phenomena related to municipal solid waste management in the study area. These were participant and non-participant observations, which helped to record the attitudes and behaviours on CP in MSWM, collected and uncollected solid waste by households, CBOs and the Municipal authority. The study recorded these different observations in various ways including maps, plates and video-shootings.

Findings of the Study

Reasons for Community Participation in MSWM

The study established two main reasons that accounted for community participation in MSWM. First, Morogoro municipality was rapidly urbanizing mainly due to rural-urban migration, which contributed 78% of the Municipal population. Furthermore, rural-urban migration was accompanied by proliferation of informal settlements, coupled with inadequate public provision of municipal solid waste services. These observations tallied with the SUMO (2001) baseline survey of 1998 and Morogoro Municipal Records (2005). Before 1998, Morogoro Municipal Council was the sole provider of MSW services, but this was overtaken by rapid urbanization in the 1990s. As a result, much of the generated solid waste remained uncollected or haphazardly dumped, polluting the municipal environment mainly in informal settlements. In 1998 the municipality roughly generated 3,300 tons of solid waste per annum, but it managed to collect only 30% of the solid waste which it dumped at the Tunji Estate quarry (SUMO 2001). The waste was left to burn and decompose in open air, hence polluting the environment with smoke and

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offensive smell. Secondly, according to a Municipal official, failure to manage municipal solid waste coincided with Tanzania government's decision to adopt the SCP. Morogoro Municipality replicated the participatory approach in MSWM from Dar es Salaam City in 1998 through DANIDA support, after which it was named Morogoro Sustainable Urban Programme (SUMO). It aimed partly at building Morogoro Municipal Council's capacity by integrating to it community participation in MSWM. Were communities really involved?

This study employed multiple methods of data collection to establish how communities were approached in the formation of CBOs in MSWM projects, and the whole question of actual participation in planning and decision-making process. According to a Municipal official respondent, communities were involved right from the introduction of SUMO through their representatives who were invited in consultation meetings to participate in understating the 'community participation' concept, and in drawing work plans and other project technical factors. It all ended in the Municipality putting a community participation component in its municipal framework, which is known as *Mpango wa Udhibiti wa Taka Ngumu Morogoro* (MUTAMO) in Kiswahili (meaning 'Plan to Control Municipal Solid Waste in Morogoro'). The document was prepared by the SUMO Project (2005). MUTAMO (2005) carried a catchphrase saying: "Every household is required by law to contribute to municipal solid waste collection service charges." It underlined the employment of a privatization strategy for municipal solid waste management aimed at "keeping wards aesthetically clean for prevention of environmental associated diseases, income generation, and to keep the Sub-wards solid waste free" (MUTAMO, 2005).

However, through observations supported by in-depth study, basically FGDs, it was discovered that the MUTAMO was somehow imposed by elites. According to FGDs, those who represented communities at consultation meetings were selected by elites and not by the communities. Allegedly, they were not true representatives of communities. Besides, they had no capacity to comprehend the technical aspects of the programme; in other words, they were bulldozed. One reliable key informant (a retired officer from the Municipality) admitted that the MUTAMO was prepared by elitist planners and descended down to 'community representatives' for adoption. It consisted, among other pre-determined decisions, fixed prices for solid waste collection service charges to be paid by households regardless of their income differentials. **Even the roles between the CBOs**

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engaged in MSWM projects and the skip bucket (communal steel container for solid waste storage) service charge they had to pay for using this municipal facility was fixed by the Municipal authority. A similar complaint was expressed by households during household questionnaire interview that heads of households said the price for the MSW service collection fee was fixed by the Municipality under a 'by-law' cover. According to their opinions, this act invalidates the essence of participatory decision-making process.

Organizational and Resource Factors

It was under such circumstances the MSWM roles and activities between CBOs in MSWM projects, households and the Municipal authority were distributed by MUTAMO (2005) criteria. Besides, the Municipal Council was the overseer and chief coordinator of the entire MSWM system. In brief, at primary MSW collection point households had to sweep to clean their houses and compounds and deposit wastes into plastic bags. The Municipal Council authorized the use of plastic waste containers instead of dustbins for various reasons, but mainly because they were comparatively affordable by the poor. Households were directed by the Municipal authority to pay a fixed solid waste collection service charge to CBOs engaged in the MSWM project. As a result, only a small proportion of households—largely those with formal occupations—managed to pay MSW service collection fees, while over 60% of households—mainly self-employed in the informal settlements—could not pay the charge for different reasons. The reasons were coded. There were those who said that they could not afford to pay the MSW collection service because they were poor; and there were those who adamantly refused to pay that charge claiming that they were not involved in setting it.

On the other side, CBOs claimed to have failed to pay the skip bucket service charge imposed on them by the Municipal authority for using its skip buckets for the storage of wastes from households. Few CBOs that served the municipal centre in the commercial zone received relative better revenue collection from MSW service charge collected from several businessmen. Unlike the latter, many of the CBOs operating in the outskirts, where majority of households were poor, barely collected enough revenue to sustain them in the market. They were observed to have frequent conflicts on the distribution of the small income collected. As a result, most either became inactive or were kicked out of the market. All these factors negatively affected community participation in MSWM in the Municipality. The Municipal authority as a stakeholder in MSWM was

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assigned by MUTAMO (2005) to transport MSW stored by CBOs at secondary transfer stations to the municipal dump site for final disposal of the waste. The study found that the Municipality failed to fulfil this role. As a result, a lot of solid wastes in overflowed skip buckets decomposed at site, transmitting polluting effects and breeding disease-borne insects to surrounding communities.

Legal Factors

During household questionnaire interviews, most of the 266 respondents said to have awareness both on the negative effects of uncollected solid wastes and the public health laws. However, the interview recorded that 174(64.9%) out of 266 heads of households practiced illegal solid waste dumping methods. Further, the same study sample was probed on the enforcement of public health laws against such MSWM by-laws. Out of 266 total responses, 70(26.3%) said no legal action had been taken, compared to 187(70.4%) who said the Municipality authority had rarely taken legal action. This implies a general laxity by the municipal authority to prosecute defaulters of public health laws in its area of jurisdiction. Discussions with CBOs and FGDs revealed that unchecked haphazard waste dumping practices undermined CBOs' solid waste collection targets. In aggregate, it highly contributed to offsetting the Municipal goal of keeping households in informal settlements free from uncollected solid waste pollution. This state of laxity was confirmed by a Municipal official who indirectly admitted that the Municipal authority was inefficient in timely removing solid wastes from secondary transfer stations to final authorized disposal sites. As already seen, this act prevented CBOs from dumping more solid waste collected from household into overfilled skip buckets, causing much waste to be thrown on the ground haphazardly.

Community participation in MSWM is one of the concerns of the Tanzanian National Environmental Policy of 1997. However, the policy puts emphasis on raising public awareness, understanding the essential linkages between environment and development, and promoting individual participation in environmental action. It does not define the equal power relations before law in the contraction of CBOs in MSW service provision by local governments. The concession model, as pointed out earlier, is government centred, marginalizing CBOs from a fair play in the SWM market. Not only that but it also violates the principle of bounded rationality in MSWM transactions as underlined in the **institutional economic** where transactions are determined by demand and supply forces, and not by government monopoly. Thus, the market imperfections experienced in the study area

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showed the lack of effective community participation in Morogoro most likely contributed failure to achieve sustainable MSWM in informal settlements. It means that community participation is just on paper because elites practice non-participatory solid waste management on a conventional way as usual. This observation corresponds with Mvungi's (2004: 78) argument that the issue of development in Tanzania has been addressed by a number of people with the conclusion **that it has failed**. This is because, as Mvungi stressed, **it** lacks the important input from the real actors — the people whom the development 'experts' have turned into passive subjects. Real cooperation cannot be accorded out of 'forced consensus' but through a 'negotiated vision' that allows people to work together. This would define not only the parameters and responsibilities of each actor, but also mechanisms through which benefits will be distributed.

This study established that local communities were partially involved since the community participation strategy was adopted by the Morogoro Municipality. In reality, community participation remained on paper as elites practiced non-participatory MSWM in a conventional way. **This observation corresponded with Mvungi's (2004: 78) argument that the issue of development, in Tanzania, has been addressed by a number of people with the conclusion that it has failed. It lacks the important input from the real actors- the people whom the development 'experts' have turned into passive subjects. Mvungi argued further that, real cooperation cannot be accorded out of 'forced consensus' but through a 'negotiated vision' that allows people to work together. This would define not only the parameters and responsibilities of each actor but also mechanisms through which benefits will be distributed.**

Repetition

Finally, the Local Urban Act 8 (URT, 2004) clearly empowers local governments to take legal measures against public health law defaulters, failure of which can be interpreted as local government institution's negligence to enforce MSWM. This does not mean that all existing MSWM are credible. Although Act No. 20 of the Environmental Management of 2004 has reviewed some sections to enforce the National Environmental Policy along the Sustainable Cities Programme principles (URT, Act No. 20 of 2004: 119), there are still some obsolete sections. For example, despite the adoption of the neo-liberal participatory approaches in municipal solid waste management, the 1982 Urban Authority Section 55 still states:

Waste management in Tanzania is liable directly to the local authority's responsibility [specifically]....to remove refuse and filth from any public or

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private place and to provide and maintain public refuse containers for the temporary deposit and collection of rubbish.

Literally, even the term “municipal solid waste management” implies that it is still the sole responsibility of local government. The issue here is not the availability of the legal instruments per se, but rather their appropriateness, particularly when they are too outdated to cope with the present needs.

Conclusion and Recommendations

Community participation in MSWM strategy in rapid urbanizing market-oriented countries has not yet taken root despite elites institutionalizing it. One of the main reasons is that there is not enough political will to implement this strategy under the existing MSWM laws, which are either outdated or not enforced effectively. This has led to increased polluting effects that put the health of the majority of the urban poor mainly living in informal settlements at risk. Rectification of these deficiencies will improve performance of community participation in MSWM for the betterment of the urban poor.

Community participation in MSWM in rapid urbanizing market-oriented countries can improve to expectations if the following policy and legal recommendations will be considered.

- The National Environmental Policy should be reviewed to provide mechanisms that will facilitate community participation in MSWM. Specifically, it should define parameters under which by-laws and community involvement can apply in MSWM decision making in a market-oriented economy.
- Outdated and contradicting paragraphs of the environmental laws should be reviewed and replaced with workable ones in market-oriented economy. Besides, there is need to review contracts signed between municipal authorities and CBOs for solid waste management in local communities in order to make them more participatory.
- Local governments should ensure that they enforce public health laws just like any other instituted legal instrument, including MSW service collection charge. This will motivate community-based groups to participate fully with a view to maximizing profits by providing satisfactory solid waste management services in a market-oriented economy.

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