ASSESSING SUSTAINABILITY FACTORS OF COMMUNITY BASED GARBAGE COLLECTION AND ENVIRONMENTAL CLEANING INITIATIVES IN DODOMA REGION

By

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Certification

The undersigned certifies that he has read and hereby recommends for acceptance a dissertation entitled: **Assessing Sustainability Factors of Community Based Garbage Collection and Environmental Cleaning Initiatives in Dodoma Region** in partial fulfillment of the requirements for the Degree of Master of Public Health of the Muhimbili University of Health and Allied Sciences.

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Dedication

I dedicate this work to my parents whose moral support was vital for me to accomplish this work, without forgetting my wife, daughter and son for their encouragement.

May Almighty Allah S.W bless them. AMEN

Abstract

In Tanzania, the nature of households' solid waste (refuse) management is changing over time and with development of science and technology. These refuse cause problems towards human health, environment, drainage system etc. Many approaches of intervention are on use including empowering the communities to help them identify the problem, needs and solutions which are locally applicable to lead to better health of the community. However, community participation is not fully achieving its goals due to low public involvement, low or no coverage of garbage collection, lack of hygiene in houses etc. The main objective of this study was to evaluate factors contributing to sustainability of community based garbage collection and environmental cleaning initiatives.

The study based on four specific objectives; to assess community level of knowledge on the intervention, to assess community attitudes towards the intervention, to assess community involvement in planning the intervention and to determine financing mechanisms focusing on household fee payment for service provided and groups initiative for self financing. Findings showed that the community had high level of knowledge on the intervention benefits, although respondents expressed dissatisfaction with CBOs services. This indicates that knowledge alone does not assure the communities successful implementation of the program. Attitudes towards the intervention were generally poor. Some reasons for this were; personal, local government authority, service provider's attitudes, unavailability of funding, poor planning, monitoring, evaluation and reporting etc. Recommendations from the study were that the government should make effort to sensitize the community to make use of the program, provision of incentives to the CBOs and to pay for compensation for those individuals most active in the program and repair of equipments to improve the CBOs performances.

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Abbreviations

CBHI	Community- Based Health Initiative
CBI	Community Based Initiative
CBO	Community Based Organization
CEHA	Centre for Environmental Health Activities
FGD	Focus Group Discussion
HSR	Health Sector Reform
MDGs	Millennium Development Goals
NEMA	National Environmental Management Agency
NGO	Non-Governmental Organization
PHC	Primary Healthcare
PI	Principal Investigator
RA	Research Assistants
SDC	Swiss Agency for Development Cooperation
SF	Sustainability Framework
VEO	Village Executive Officer
WB	World Bank
WEO	Ward Executive Officer
WHO	World Health Organization

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background information

1.1.1 Program sustainability in community health initiative

In public health intervention programs, sustainability is an important dimension of improving health of the community (Pluye et al., 2004). Program sustainability is the capacity of programs to continuously respond to community issues. A sustained program maintains a focus consonant with its original goals and objectives, including the individuals, families, and communities it was originally intended to serve (Mancini and Marek, 2004). This is whereby the communities, after the interventions can be able to withstand and overcome most of the challenges on their own by applying endowed and residual capacities resulting from these interventions.

Community health programs typically involve time limited funding from foundations or government grants to support the initial activities. But if there are to be lasting improvements in health outcomes, initiatives must be sustained over a relatively long period of time (Beery et al., 2005). For programs to be sustainable after the intervention there must be community participation.

According to Mansuri and Rao (2004) through community participation, the communities develop skills for collective action, use of local resources, local commitment to project goals, integration of the program with the social and cultural settings of the community and maintenance of health benefits achieved through an initial program.

The community leaders must also accept the challenge for program sustainability and involve the whole community all along. The leader must be out-rightly accountable and answerable to beneficiaries rather than to political and bureaucratic superiors (Mansuri and Rao, 2004).

In recent years, sustainability has become one of the most crucial concepts in international development agenda and is having a dramatic impact on the way development is conceptualized and carried out (Thompson et al., 1990). Policymakers and program donors are more concerned with allocating scarce resources effectively and efficiently because some programs implemented are not sustained after period of program funding ends (Shediac-Rizkallah and Bone, 1998)

1.1.2 Planning for sustainability: Factors to consider

Shediac-Rizkallah and Bone (1998) argue that planning for sustainability requires clear understanding of the concept of sustainability and operational indicators that may be used in monitoring sustainability over time. Important categories of indicators include; maintenance of health benefits achieved through an initial program, level of institutionalization of a program within an organization and measures of capacity building in the recipient community. Second, planning for sustainability requires the use of programmatic approaches and strategies that favor long term program maintenance.

According to Savaya et al., (2009); Shediac-Rizkallah and Bone (1998) and Scheirer (2008), the potential influences of program sustainability may be derived from three major groups of factors: project design and implementation factors, factors within the organizational setting and factors in the broader community environment.

A case study conducted by Aubel and Samba-Ndure (1996) in Gambia shows that community based program designed favor sustainability outcome because of certain strategic decisions.

Evaluation of the project revealed that the factors which contributed to sustainability in community based maternal nutrition programs included among others the following key factors: involving the community in the planning, implementation, and evaluation to promote community responsibility and feelings of ownership; creating an intervention compatible with community norms and values; building on existing social units and roles without overburdening community members with new tasks; motivating, training, and supervising community members in the performance of clearly defined roles and identifying strategies that allow communities to contribute a progressively greater amount of the resources required to sustain the program.

In Tanzania many public health community based programs have ceased soon after initial funding ends. Although experts agree that community participation is a key concept under primary healthcare (PHC) programs and Health Sector Reform (HSR) in many countries, but total community participation in health priority setting is still inadequate (Mubyazi et al., 2007; Wagstaff, 2006).

1.1.3 Community involvement: The case of CBHI in Tanzania

The government of the United Republic Tanzania in collaboration with Community Based Health Initiatives (CBHI) has actively been educating and sensitizing community groups collectively identify, plan and implement initiative which will achieve health improvements. Efforts to sustain community based programs have been made using different approaches. This is mainly through capacity building, sensitizing community to use local resources, community membership contribution as well as initial funding from CBHI support (CBHI, 2008).As such, different community based organizations (CBOs) with different domains were established in three districts of Kondoa, Kongwa and Dodoma Urban in Dodoma region.

Some of the groups that have been active are working on garbage collection and environmental cleaning.

1.2 Statement of the Problem

Many community based programs related to public health in Tanzania are not sustainable and so they are not success stories according to evaluations carried out in Dodoma (Maganga, 2008); and Dar es Salaam (Castrol et al., 2009) regions. Recent observations in Dodoma on community based garbage collection and environmental cleaning initiatives indicate sustainability and success in only some of the groups. It is being proposed here that a study be carried out to determine why some of the community based initiatives in Dodoma have performed better than others. The study will be guided by observations elsewhere which indicate that community knowledge, attitudes, good community involvement and financing mechanisms are among of the input to success in community based initiatives.

1.3 Broad objective

To evaluate factors contributing to sustainability of community based garbage collection and environmental cleaning initiatives in Dodoma region.

1.4 Specific objectives

1. To assess community level of knowledge on the intervention
2. To assess community attitudes towards the intervention
3. To assess community involvement in planning the intervention
4. To determine financing mechanisms focusing on household fee payment for service provided and groups initiative for self financing

1.6 Rationale of the Study

This study will add new and relevant knowledge to the available collection of literature on the refuse collection and safe disposal. Furthermore, it fits well with the current global trends of community-based approaches to environmental problems. Secondly, the information obtained from this study will inform the need to advocate for the importance of program sustainability when planning and designing effective intervention. The study will also provide valuable information for local health policymakers, donors and stakeholders involved in community health programs to effectively plan, implement and scale up future interventions in the country for improving community health status.

CHAPTER TWO

2.0 LITERATURE REVIEW AND CONCEPTUAL ISSUES

2.1 Introduction

As a management tool, evaluation is a systematic way of learning from past events and drawing lessons to correct and improve ongoing and future activities. Evaluation allows for necessary adjustment to fit people's needs within the framework of established and agreed upon goals of the intervention (Narayan, 1995a) which include program sustainability and expansion of services. To achieve these goals, Wright (1997) suggests developing a demand based on what users want and the resources they are willing to use to finance the program and the degree to which they are willing to provide a long-term and effective management system. Successful implementation of these strategies requires timely participatory evaluation of the programs.

Participatory evaluation is a process of collaborative problem-solving through the generation and use of knowledge. It is a process that leads to corrective action by involving all stakeholders in shared decision making (Narayan, 1995a). Participatory methods are adapted to fulfill specific tasks. Validity and reliability are achieved through the use of multiple methods and through including different users and stakeholders in consensus building.

This study uses qualitative techniques to assess factors contributing to sustainability of community based garbage collection and environmental cleaning initiatives in Dodoma region. This chapter reviews key concepts that are used in this study which include; community participation and management, sustainability, and environmental cleaning. Current literature on the concept of sustainability and techniques of sustainability assessment are also presented.

2.2 Community Participation and Management

It is now widely accepted that community participation and management is a critical factor in the creation of an enabling environment for sustainable urban and rural community based programs. Paul (1998) defines community participation as an active process whereby beneficiaries influence the direction and execution of development projects rather than merely receiving a share of project benefits. Community participation emphasizes the participation of beneficiaries as a group and recognizes the project to be a process of generating goods and services rather than a product of goods and services (Kaliba, 2002). According to Christine (1995), Sara and Katz (1998), community participation creates an enabling environment for sustainability by allowing users not only to select the level of services for which they are willing to pay, but also to make choices and commit resources in support of the choices made by the community.

In the past the success of community participation was measured as the amount of labour or up-front contribution by communities during project construction, but now community participation means that communities are actively involved in project development activities, through making appropriate labour, time and financial contributions to both the initial and long-term operation and management of the projects (Yacoob and Walker 1991). As reported by McCommon, Warner and Yahalem (1990) community participation alone does not guarantee sustainability.

Whereas community participation emphasizes beneficiaries' participation in the decision making process. Community management refers to the capabilities and willingness of communities to take charge, influence and determine the nature of the project.

Community participation and management create both desires and capabilities within communities to influence and control the goods and services to be produced by the project during its life cycle.

Following Wright (1997), Narayan (1995b), Yacoob and Walker (1991), and McCommon, Warner and Yohalem (1990) studies, indicators of community participation and management can be summarized as follows:

Participation in decision making; all aspects related to project development and implementations have to be based on community preferences. The community has to communicate their needs and decide what is best for them. Issues such as project design, community contributions, external assistance, and user fees or tariffs have to be decided upon by the community or beneficiaries of the project. Thus, communities need to be involved as equal partners and not as a special group of beneficiaries.

Informed choice; communities must be informed on the available options or alternatives and associated costs. Informed choice helps communities to make decisions concerning community capabilities to manage the project.

Community contribution; communities should willingly contribute to the development and operation of the project if they are to feel that they own the project.

Contributions such as monetary investment, material equipment, labor, and general participation in project related committees and meetings should be voluntary.

Representation; community based project leaders should represent the diversity within the community. They should be elected democratically representing all community members. Women representation as an important group should be clear.

Responsibility; the community should be ready to take on the ownership and attendant obligations of the project. They should understand that the project belongs to them and its survival or collapse depends on community investments (i.e., in terms of human, physical and

financial capital). Roles of each stakeholder should be clearly defined in order to avoid confusion in management or creating false expectations among community members.

Authority; the community has a legitimate right to make decisions regarding the project on behalf of the users. Interference from the donor or government should be minimal and occur only when requested by the community or when intervention is in the interests of the beneficiaries.

Control; the community is able to carry out major decisions and determine the outcome of the decisions. Donors or government agents can be involved in decision making through consultation

2.3 Definition of project sustainability

Sustainability is the capacity of programs to continuously respond to community issues. A sustained program maintains a focus consonant with its original goals and objectives, including the individuals, families, and communities it was originally intended to serve (Mancini and Marek (2004).

Although there is no common agreement on a definition of sustainability, the principle idea contained in the various definitions is that any project is designed to produce a continuous flow of outputs/goods, benefits or services throughout its intended economic life cycle (Kaliba, 2002). The concept of sustainability also refers to the continuation of programs (Shediac-Rizkallah and Bone, 1998). According to Scheirer (1994), a sustained program is defined as a set of durable activities and resources aimed at program-related objectives. Little consensus exists in the literature on the conceptual and operational definitions of sustainability.

Several terms have been in use to refer to the phenomenon of program continuation. Among these are: program 'maintenance', 'sustainability', 'institutionalization', 'incorporation',

'integration', 'routinization', local or community 'ownership' and 'capacity building' among the community (Shediac-Rizkallah and Bone, 1998).

Project sustainability is defined by many economists and international development agencies as the capacity of a project to continue to deliver its intended benefits over a long period of time (Bamberger and Cheema, 1990).

Sustainability thus appears to be a multidimensional concept of the continuation process and the term encompasses a diversity of forms that this process may take. For example, an entire program may be continued under its original or an alternate organizational structure, parts of the program may be institutionalized as individual components, or there may be a transfer of the whole or parts to community ownership (Shea et al., 1996). Moreover, continuation may occur at levels other than the organizational level, including the individual and network levels (Shediac-Rizkallah and Bone, 1998). At the individual level, key community members assume a personal commitment to continuing program messages, products or services. At the network level, individuals and organizations are brought together to create networks that reinforce program goals and promote coordinated efforts (Lefebvre, 1990).

2.4 Sustainability concepts

The most inclusive framework for summarizing the available empirical studies on sustainability is the work by Shediac-Rizkallah and Bone (1998), which reviewed literature available to date about community based health intervention programs.

Recent frameworks with similar components have been suggested by Johnson, Hays, Center, and Daley (2004) for interventions in the substance abuse prevention field and by Mancini and Marek (2004) for family support programs.

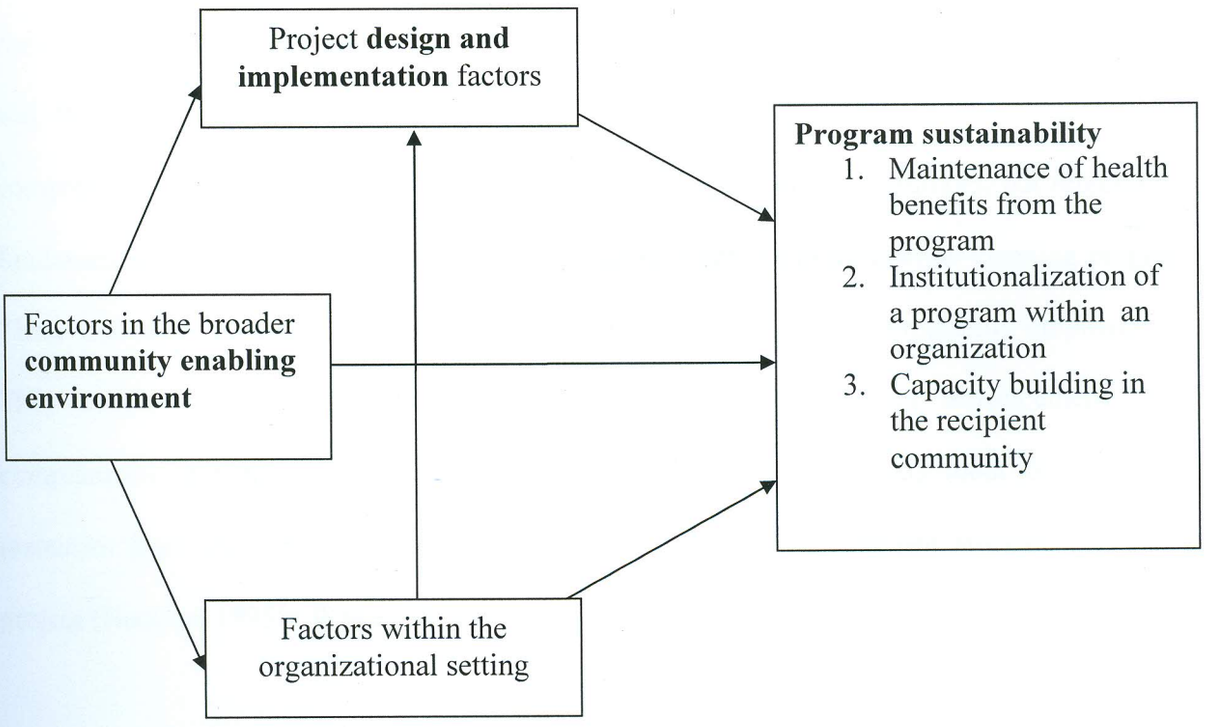
After examining various definitions for what constitutes program sustainability from different studies, Shediac-Rizkallah and Bone (1998) suggested that indicators of sustainability fall into three distinct types of measures (i.e., different operational definitions): measuring continued health benefits for individuals after the initial program funding ends, particularly continuing to achieve beneficial outcomes among new consumers or other intended recipients (in contrast to maintaining behavioral change among earlier clients); inquiries concerning the continuation of program activities within an organization, often termed "institutionalization" or "routinization," within an organizational focus; questions about the continued capacity of a community to develop and deliver health promotion programs, particularly relevant when the initial program worked via a community coalition or other community capacity–developing process.

These three types of measures relate to different units of analysis for sustainability measurement: individual-level outcomes, the organization-level implementation of activities, and community-level capacity (Scheirer, 2005). Conceptually, these three levels might reasonably relate to linked components of a program's logic model;

Community capacity→sustained program activities →outcomes for clients.

The Sustainability Framework (Figure 1) conceives sustainability as a process within a local system whose aim is to maintain improved health status. This local system is composed of local stakeholders (individuals, communities, and local organizations) that operate within a larger environment. A sustainable process enables these local stakeholders to express their potential through balanced improvements in several key components: service delivery, organizational capacity, and community capacity. The actors within the local system improve their functioning and develop mutual relationships of support and accountability. Local stakeholders should decrease their dependency on insecure resources (financial, technical, and institutional) as they strive to fulfill their mutually agreed-upon roles in pursuit of their common vision of a healthy population, to be attained outside the bounds of any one project.

Figure 1 shows a framework for conceptualizing program sustainability
(Source Shediac-Rizkallah and Bone, 1998)



The outcome we measure is progress toward this mutually agreed-upon vision of population health. Its improvement in this outcome shows that the sustainability process is working successfully (Sarriot, Ricca, Yourkavitch and Ryan, 2008). Establishing sustainability of community based health programs is largely dependent upon factors specific to the local context, such as cultural norms and socioeconomic/political variables. It is therefore important to define your strategies within the context of the local system in which you are working, and to ensure that systems are in place for you to monitor critical program developments.

2.5 Sustainability Indicators

For the community–based projects, sustainability is a major cause of concern to all the stakeholders (Panth and Bhattarai, 2008; Kaliba, 2002). In order to monitor and evaluate the sustainability of these projects, different indicators are identified for measuring their effectiveness. In case of garbage collection and environmental cleaning initiatives in Dodoma region, a series of indicators has been identified to measure conditions relating to sustainability, and the effective use and reliable/consistent of the projects. These indicators may not be comprehensive/ exhaustive and may mean different things to different authors, but represent the fundamentals of community participation and management of environmental cleaning programs. These indicators provide the basis of communities' satisfaction and community empowerment. They create a sense of community ownership, self-reliance and advancement within communities, and they strengthen community organizational and management skills, mobilize resources from all stake holders, and help in determining the long-run sustainability of the project (Narayan 1995b; Wakeman, 1995; and Christine, 1995).

Following Narayan (1995b); Wakeman (1995) and Christine (1995) key indicators of sustainability can be divided into categories as follows.

Reliability of the systems; for communal systems, the availability of local skills to operate and maintain facilities play a critical role in ensuring that the system remains functional.

Human capacity development; specialized training of project managers and operators is needed to build local capacity for operation and management. Since women in most cultures have a greater role in managing the program, their involvement is important.

Local institutional capacity; sustaining the efforts and results of participatory programs require relatively autonomous community and agency organizations. An appropriate management structure enables project managers to be flexible when taking necessary remedial measures.

Collaboration among organizations; a sustainable community based garbage collection and environmental cleaning program can only be planned and implemented through collaboration with stakeholders such as combination of the community, government, NGOs, the private sector, research institutes, and other organizations. Stakeholders' collaboration is needed both in the planning and implementation of program activities.

Reliability with local adaptation; this is the capacity to duplicate the processes and benefits of a set of development activities in new locations after their effectiveness has been demonstrated in one area. In other words, the experience gained can be useful for developing sustainable programs in other areas.

List of indicators predicting the sustainability of community based garbage collection and environmental cleaning initiatives specifically include: continuity of the intervention and training that are matched with program goals and needs; financial resources and financing strategies; local partnership synergies or community support for the program; presence of refuse pits, bins or specified area at market place ; community attendance to public meeting addressing health issues i.e. attending awareness meeting; cleaning public places; household garbage collection and fee paying; legal recognition or governing committee or board or community bylaws; local practice and applicability; observed evidence of environmental cleaning practice and diversity of community based project leaders within the community (Ahsan and Ahmad, 2000).

2.6 Household solid waste generation

The nature of household solid waste is changing over time and with development of science and technology (Mongkolnchaiarunya, 2005). Household solid wastes, such as plastic and polyethylene goods cause problems towards human health, environment and drainage system (Memon, 2002). These goods are cheaply and easily available in the markets. The users do not care to reuse them. They rather throw these things out of the door and window. During floods, floodwater does not drain quickly, as one of the major reasons due to polyethylene in the draining system. Polyethylene and plastic materials are none biodegradable. Natural process cannot decompose it. Polyethylene remains intact in the soil, disturbs the flow of nutrients to the soil and hinders entering sunlight. It destroys the beneficial bacteria of soil compaction. In the long run it affects the foundation of physical infrastructures (Jayaratne, 1996; Mongkolnchaiarunya, 2005)

2.7 Adverse impacts of inadequate household solid waste management

In poor communities of urban areas, the most adverse impact of household solid waste is incidence and prevalence of various diseases. In Tanzania, malaria, cholera, respiratory problems, eye, skin and gastro-intestinal diseases (Markalio, 2008; Ahsan and Ahmad, 2000) are the worst impacts. Moreover, contamination of ground water and air also leads to such adverse health impacts.

On the other hand, household solid waste blocks the drainage system and creates flooding in the streets leading to mosquitoes' breeding grounds, bad odor, and inconvenience. For example, Dar es Salaam city with its geographical and climatic conditions is prone to flooding when it rains; hence, household solid waste in the streets and drains multiplies the health impacts and miseries. Some of the child morbidity could be related with this problem, as contaminated ground water and malaria are the major causes of this morbidity (Mongkolnchaiarunya, 2005) .

2.8 Problems associated with poor household solid waste management

The problems associated with poor household solid waste management includes the following; low or no coverage of municipal waste collection; odors due to bio-degradation of household solid wastes; lack of hygiene in houses, schools, hospitals etc; proliferation of vectors of diseases due to unsafe disposal of household solid wastes; litters thrown everywhere which in turn become nuisance to the environment; household solid waste disposed of in watercourses hence pollute the water and others (Jayaratne,1996).

The problems of household solid waste management in Tanzania are important issues that must be addressed to achieve better health. At the core of the problems of household solid waste management are the absence of adequate policies, enabling legislation, and an environmentally stimulated and enlightened public.

Government policies on the environment are piecemeal where they exist and are poorly implemented. Public enlightenment programmes lack the needed coverage, intensity, and continuity to correct the apathetic public attitude towards the environment. Up to now the activities of the state environmental agencies have been hampered by poor funding, inadequate facilities and human resources, inappropriate technology etc.

Successful household solid waste management in Tanzania will require a holistic program that will integrate all the technical, economic, social, cultural, and psychological factors that are often ignored in household solid waste programs.

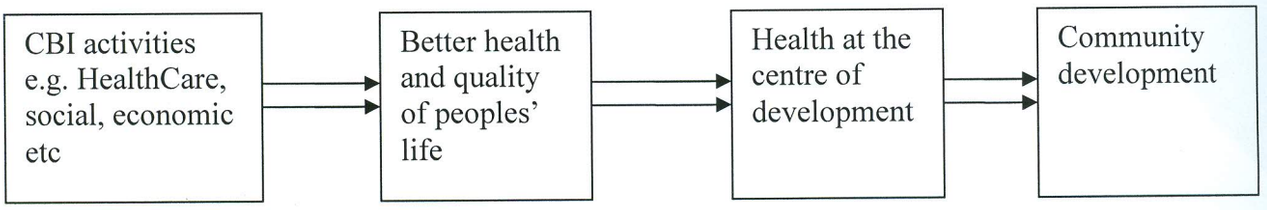
2.9 Community based initiatives for household solid waste collection

As it were due to limited resources and organizational capacity it is hard for city or municipal authority, to ensure efficient and appropriate delivery of household solid waste collection and disposal services to the entire population.

Therefore, CBHI project and Ministry of Health and Social Welfare are encouraging community based organizations and local NGOs to organize and carryout community household solid waste management program (mainly house to house collection and safe disposal). The community groups working on environmental cleaning and garbage collection in Dodoma region were established after CBHI project call for the initiative proposal.

The call endorses the principle of community based initiative of empowering the communities to help them identify their problems, needs and solutions which are locally applicable for implementation, such as self reliance, self financing and self management leads to better health hence project sustainability. Anschutz (1996) suggests that community-based waste projects often fail because of low participation from households. If solid waste management is not a 'felt need', this will have consequences for their participation in the service and their willingness to pay. Mockler's (1998) study suggests that a 'felt need' is a necessary prerequisite for successful implementation of a community-based solid waste management system. Dhungel, (1992) who conducted research in Balaju, Nepal found that residents dispose of their garbage indiscriminately around the neighbourhood in the belief that the municipal sweepers would somehow collect and dispose of it. The system was not efficient because of the community's low willingness to participate in the project.

Figure 2: Community based initiative (CBI) concept



Raki (2002) and Jayaratne (1996) stipulated strategic issues to consider in a sustainable community based household solid waste initiatives as follows: health protection must be at the centre of political, social and community development agenda; environmental services including household solid wastes are an investment for improving peoples' health; promotion of the sense of community ownership; enhance partnership between the community and local authorities, civil society and stakeholders; enhance inter-sectoral efforts for health protection; encourage gender awareness and capacity building for behaviour change; involve the community and community associations such as women associations in planning, implementation and monitoring of community based household solid waste initiatives; mobilizing support: broad based and cross party support and active involvement of the community leaders; community organization in rural settings include focal point, village development committee, technical support team and cluster representative; in case of poor urban areas include project manager, city committee, intersectoral technical support team and cluster representatives (Raki, 2002).

CHAPTER THREE

3.0 METHODOLOGY

3.1 Background information of CBOs under study

In order to assess how people understood the nature of garbage collection and environmental cleaning initiatives, the principal investigator conducted a series of qualitative surveys. A total of six CBOs in Kongwa, Kondoa and Dodoma Urban districts were interviewed. The later included area community leaders, CBOs leaders, CBOs members and beneficiaries (community members). This study concentrated on CBOs that had received funds from the CBHI project support in order to provide services that would improve garbage collection and environmental cleaning for the communities that they were serving.

Kongwa district

The study areas were Kongwa, Kondoa and Dodoma Urban districts which are parts of Dodoma region. In Kongwa district, one CBO from Kibaigwa town-WEKISA group was included in this study. Kongwa district has a total population of about 249,000. The female population is 52% of the total population and the rest are males. The literacy rate is 52% with only 4% of the total population having attained secondary level of school education. Large numbers of females than males are more disadvantaged in education literacy. Kibaigwa town is located about 90Km East of Dodoma town, on the highway to Dar es Salaam. It is used as a stop over for many buses and truck drivers. The residents of Kibaigwa depends a lot on small business and farming which falls under the natural course of long periods of annual drought seasons. Among the foods grown in the areas are: maize, millet, sorghum and groundnuts.

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3.1.1 WEKISA group

WEKISA is an abbreviation of '*Weka Kibaigwa Safi'* (Keep Kibaigwa Clean). The group comprises 12 members, 5 men and 7 women. The group members are engaged in farming activities, e.g. cultivating maize, sorghum and sunflowers. The group works at Kibaigwa town. The group existed since 2004 doing environmental health education covering a small area within Kibaigwa with rudimentary equipments for environment cleaning. Their aim was to improve the environment in the area as well as getting income from garbage collection.

Later they were contracted by the district council for collecting waste products in Kibaigwa, whereby they were being paid monthly by the council Ths.70,000. The group received CBHI fund which were used for purchasing working gear such as wheelbarrows, uniforms, gumboots, dustbins etc.

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Kondoa district

Kondoa district is located North of Dodoma Urban district. The main town lies at least 140Km from Dodoma town. The total population is estimated to be 428,000. The female in Kondoa district comprises half of the total population. Literacy levels are a bit higher than Kongwa, with 64% of the population being able to read and write in Kiswahili, English or other languages. The trends of female literacy are more disadvantaged than males with 38% to 30%. The CBOs under focus in the study included Eju Maendeleo and Tupendane groups.

3.1.2 EJU – Maendeleo group

The group comprises 15 members, 11 women and 4 men. The members live in Kondoa town, are engaged in different activities as a means of livelihood. One member is employed by the government, 3 are small businessmen and the other 11 (all women) are tailors.

The group was formed in 2006 as a result of CBHI information campaign with the aim of improving the environment's cleanliness by educating the community on the importance of having toilets, cleaning the environment and boiling drinking water. The area experienced frequent outbreak of cholera during rainy season. Funds from CBHI were used for buying working gears such as racks, trolley, gloves, gumboots and shovels. Other funds were used for compensation for food and transport during awareness meetings.

3.1.3 Tupendane group

The group is composed of 6 members: 4 men and 2 women. Of group members, 2 are carpenters, 2 primary school teachers, one a business man and one is a religious teacher. The group project targets residents of two wards of Kondoa town: Kondoa urban and Kingale.

The group started in 2006 after seeing the CBHI leaflets. It started with 10 members, but 4 left the group after seeing their expectation were not met, since they expected immediate personal gains from the initiative.

The group members sensitizes community on environment cleanliness, garbage handling and the use of safe and clean water through meetings and leaflets with the objective of preventing cholera outbreak. CBHI funds received by the CBO were used for buying equipment such as wheelbarrow, racks, hoes, overalls, gloves and gumboots.

Dodoma urban district

Dodoma Urban district was also included in this study. Three CBOs from the district were chosen from Viwandani ward (Upendo women group), Chamwino ward (Vendors care participation) and Majengo ward (Mazingira women group). The Dodoma Urban district carries a total population of 323,000 with 51% being females.

Unlike Kongwa and Kondoa districts, the area experiences frequent outbreak of diseases like typhoid and dysentery due to poor burying of garbage in the pits and most of them dispose the waste offensively on the areas. The literacy level is higher in Dodoma Urban (69%) than Kondoa (64%) and Kongwa (52%), the trends of males being more literate than females are almost the same in all districts.

3.1.4 Mazingira women group

The group has 20 middle aged women members. All members in the group are petty traders selling food, bites, second hand clothes and crops like maize and groundnuts. The group lives and works in Majengo ward at the town centre of Dodoma. Most of the houses in this area are rented by multiple families with an excess accumulation of garbage in the area. The group started in 1999 with 30 members doing voluntary environmental cleaning after being irritated by the garbage surrounding their streets, to improve health by reducing and containing sanitation and hygiene related diseases.

After hearing about CBHI in the year 2004 they applied and received fund to improve their activities. The group clean (sweeping, slashing and collecting garbage) in the streets and households of Majengo ward. With the CBHI funds they bought equipments for environmental cleaning. These equipments includes pushcarts, rakes, brooms, shovels and working gear such as overcoats, masks, boots and gloves. They also started providing health education to the community through trainings.

3.1.5 Vendors care participation

This is a group of 10 people, having 4 female members and 6 males. This group lives and works in Dodoma town at a highly populated area known as *Chamwino*.

All members of the group are petty traders earning their income from selling food and second hand clothes, and having small shops or kiosks. The group started in January 2005 with environment cleaning activities covering a small area and without sufficient working tools. The group provides primary health education among community members through trainings and carries out environmental cleaning by means of garbage collection from households. Funds received from CBHI were used to buy necessary equipment for cleaning and collecting garbage. Some funds were used for conducting trainings to the community regarding primary health issues.

3.1.6 Upendo women group

This is a group of 7 women. All members of the group are petty traders, earning their living by selling food, having small shops and tailoring. The group lives and work at the town centre of Dodoma (*Viwandani area*) which is more the business area.

The group existed since 1999 providing environmental health education to community, working with community in cleaning environment as well as collecting garbage from households. They only covered a small area as they had insufficient equipments and used hired equipments. The aim was to improve the environmental situation in the area as well as obtaining income from garbage collection. With the CBHI fund they managed to expand their working area from only one street to now 110 households and purchased their own working equipments. They also hire labour to pull the pushcart to the dumping areas and his paid on every working day.

3.2 Study design

This was a descriptive study. A qualitative method of data collection was employed. The methods included focus group discussions, in-depth interviews, observation and documentary review.

3.3 Study area

The study was conducted in Dodoma Region Tanzania, in the districts of Kongwa, Kondoa and Dodoma urban. The area was chosen because community based initiative working on garbage collection and environmental cleaning was carried out by community based organizations (CBOs) with initial financial support from CBHI project for the first two phases (2004 - 2007). According to the National Population Census Report (2002), Kongwa district has a total population of 249,000; Kondoa has a total population of 428,000; while the Dodoma urban district has a total population of 323,000 people.

3.4 Selection of study Sites and Participants

Within every district CBOs were purposefully chosen only those working on environmental hygiene (see table 1). After selecting the CBO the participants were then selected from the areas where these CBOs had once operated their services of garbage collection and environmental cleaning

3.4.1 Selection of Community Based Groups

Purposeful selection of the CBOs came after the review of CBHI project documents, which included: the profiles for the CBOs, the annual evaluation reports and the CBHI concept papers.

Six CBOs from all the three districts out of 14 CBOs, which were carrying out intervention on garbage collection and environmental cleaning, were included in the study. The main criterion for selection was variation, which means initiatives were as different as possible in their goals, approaches, localities and activities (see table 1).

The assumption was that by using these criteria there might be some possible differences that will be reflected in efficiency, relevance, effectiveness and impact of the CBOs.

The following criteria of selection were used in order to get the CBOs from each district.

- The CBO should be working on garbage collection and environmental cleaning activities
- Each CBO should be having at least 5 members and over in order to have an interview with its members
- The CBO in the districts must have been supported by CBHI project in first or second phase of its operation

3.4.2 Selection of the Beneficiaries

Selection of the direct and indirect beneficiaries was done purposefully. The beneficiaries were selected during the field study. Based on the information gathered from the CBO group interview, the discussion moderator then requested for particular beneficiaries who were included in the beneficiaries' group discussion.

Definition

The CBO member and beneficiaries were defined as follows

i. CBO member; the bona fide member of the CBO which received funding support from CBHI and who was present during the funding period.

ii. Beneficiary; any person who directly or indirectly benefited from the CBOs services of the CBOs.

3.4.3 Selection of the Community Leaders

Community leaders representing each local area of the CBOs were selected using the following criteria. Out of the 25 elected community leaders, only a total of 6 to 8 leaders were allowed to participate in the discussion. The voluntarily priority was given to 2 leaders who were directly involved with the CBOs either by the reason that the CBOs area of operation was under his/her area of control or participation in CBOs activities.

If there was none then ordinary members (who were not officials) were invited for the discussion.

Table 1: Selected CBOs that carried out garbage collection and environmental cleaning activities

Name of the group	District	Location	Activity	Members	When established
Vendors care participation	Dodoma urban	Chamwino ward	Environmental cleaning and health promotion	4 women 6 men	2005
Mazingira women group	Dodoma urban	Majengo ward	Environmental cleaning and health education	20 women	1999
Upendo women group	Dodoma urban	Viwandani area	Environmental health and garbage collection	7 women	1999
Weka Kibaigwa Safi group	Kongwa	Kibaigwa town.	Environmental Health and Garbage Collection	7 women 5 men	2004
Eju maendeleo group	Kondoa	Kondoa town	Environmental Cleanliness	11 Female 4 Male	2006
Tupendane group	Kondoa	Mnarani	Water and environmental cleanliness	4 women 2 men	2006

3.5 Research assistants and Pilot-Test

3.5.1 Research assistants

Two research assistants (RAs) with some experience in research were recruited. Before the actual fieldwork, RAs were given a one-day training conducted by the Principal Investigator (PI). The training comprised of an overview of the study and familiarization of research tools and process. Similarly, the RAs were introduced to research ethics and administrative issues such as work schedule, how to take field notes (non-verbal expressions) and other logistics. During the fieldwork, there was a daily feedback meeting between the PI and RAs after interviews and FGDs to evaluate the work and to discuss if any, problems encountered.

3.5.2 Pilot -Test

Out of the already-selected CBOs, one was randomly picked for the pilot test. The intention was to see if the results from this test would have an effect in the amendment of the study approach by a greater degree. If the results changed the study approach by a great margin, then the CBO that was used for the pre-test, would not be included in the main study, otherwise it would still be included. This pre-testing involved the use of a guide to conduct interviews and discussions in Majengo ward where one of the CBOs got supported by the CBHI project. This was a similar approach that was going to be applied in the main study. Pre-testing exercise was done in order to mirror the real study which would assist in confirmation, adjustment or replacement of resources, approaches, or the tools that had already been prepared for the main study. It also showed whether the people understood most of the questions well and what needed to be accustomed in the methodologies, or the study approach as a whole.

It resulted that out of this pre-test nothing much emerged that would make the study approach and tools to be modified. The minor modifications included the change of the times of meeting the groups for discussion and the increased flexibility of meeting them. Therefore, it led to inclusion of the pilot-test CBO into the main study.

3.6 Methods and Procedures of Data Collection

The data collected was obtained using qualitative measures. It involved the use of multiple methods such as: document review, focus group discussion, individual interview and observations. These methods were chosen because divergent findings were expected from different documents, groups and individuals that would assist in drawing more credible conclusions from a synthesis of results using various form of triangulation. At the filed, the language used to collect the data was Swahili. It was chosen because is the national language in Tanzania and understood by everybody.

3.6.1 Document Reviews

A special document review was done on the demographics and the population of the area where the study was conducted. The results of this special review have been included in the result section. The main documents used to obtain in-depth review of the population and demographic characteristics of the study areas were the reports from the 2002 Population and Housing Census, for Kongwa, Kondoa and Dodoma Urban districts. Baseline information on the CBOs was obtained from CBHI reports. These reports included: annual evaluation reports from the CBOs, CBHI concept paper and advertisement flyers. All this was done to help in validation of the study as well as to avoid duplication of efforts.

3.6.2 Group Interviews and Focus Group Discussion with the CBOs

Group interviews were used to get information from the CBOs while focus group discussion (FGDs) were conducted in a quite, comfortable and independent place in order to avoid any influential bias of the choice of place and interruptions when the discussions were going on. 6 to 8 CBO members including 3 members from the research team were all sited in a circle to create a sense of an atmosphere of equality in participation during the discussion. An interview guide for the discussion was used in order to maintain a systematic collection of the data (see annex 3b and 3c). Before the actual interviews about five minutes were spent to familiarize with each other and relieve any tensions while at the same time obtaining their verbal consent of voluntary participation and also to establish whether the participants were comfortable and willing to be tape recorded during the discussion. The discussion took an average time of between 60 to 80 minutes. Ending of the discussion was dependent on the assessment whether the information collected had reached its completeness. Completeness was defined by two things: redundancy of information and its saturation.

3.6.3 Interviews with the Community Leaders

Definition

The leader was any member of the community in focus who held an official position elected by the community through the voting process. The leaders could also come from different wards/village irrespective of area of operation of the CBOs.

Interviews with the Community Leaders

Guided interviews were carried out with leaders varying from a total of three to four (see annex 3a and 3d). The events took place in comfortable environment with no disruptions although at once instance there were interruptions that lasted for few minutes. The interview took an average time of between 40 to 60 minutes. All the recordings were done using tape recorder and notes taking after obtaining a verbal consent from the participants.

3.6.4 Observations

Guided and open observations were part of the study throughout the process. Body language, local gesture, use of tone and language, were among the things which were observed during the discussion in order to read and associate more meaning to what was being discussed. Participants' research takes place in natural setting. The researcher often goes to the site of the participants to conduct research (Cresswell, 2003). Through direct observation of people in the field the researcher was able to overcome the discrepancy between what people say they do and what they actually do. It provided the researcher with evidence of good and bad environmental cleanliness practices. The researcher kept good record of experiences, interactions, relation and social events in the natural settings.

3.7 Data analysis

Data analysis method by Krueger (1988) guided the analysis of qualitative data. The tape-recorded interviews and FGDs were transcribed precisely word for word (verbatim) in Swahili. The researcher then translated the transcription from Swahili to English. To ensure accuracy a second translator double-checked the translation. The analysis started with listening to tapes, reading and re-reading of the participants' descriptions, and extracting important statements from the description. Thereafter, the researcher formulated meanings to these statements. Participants' statements were divided into meaning units, condensed into more abstract forms of text that created codes, categories, and arguments. Finally, changes obtained from participants were incorporated into the final description.

3.8 Ethical considerations

Ethical approval was obtained from the Research and Publication Committee of Muhimbili University of Health and Allied Sciences. Research permission was requested from the authorities of the Dodoma Region through the Regional and Districts Administrative Secretaries respectively. Special permission was requested from participants to tape record information they provided during the interview and FGDs. Participants were informed about the objectives of the study and their participation was voluntary, they were free to participate or withdraw at any time from the study. However, information provided by participants, whether orally or in writing, was treated strictly confidentially and information collected only used for research purposes.

CHAPTER FOUR

4.0 RESULTS

4.1 Data presentation, interpretation and analysis

This chapter presents the findings of the study entitled "Assessing sustainability factors of community based garbage collection and environmental cleaning initiatives in Dodoma region." The findings are reported under the research specific objectives.

4.2 Social demographic characteristics

The study population consisted of 97 participants. Among these participants 77(79%) were female with mean age of 33.6 years and ranging between 15 to 58 years. The rest were male whose age ranged from 15 to 76 years. The social demographic characteristics of the study population were as summarized in Table 2.

The majority of the respondents 61(62.9%) were married, 7(7.2%) were single and the rest were either divorced, widowed, separated or in cohabiting relationship. Literacy level was about 81.8% in Dodoma urban, 93.9% in Kondoa and 73.6% in Kongwa, and the rest of participants were illiterate. This level of literacy is high compared to literacy averages in Tanzania, which are 77.5% for male and 62.2% for female. About three quarters of the participants were petty traders or peasants and the rest were housewives, government officials and retired civil servants.

Table 2. Demographic characteristics of respondents from the CBOs intervention area in Dodoma Urban, Kongwa and Kondoa districts.

Characteristics of participants	Dodoma Urban (n= 42)	Kongwa (n= 22)	Kondoa (n=33)
Female	**38 (90.5%)**	**16 (72.7%)**	**23 (69.7%)**
15 – 24 years	2 (5.3%)	3 (18.8%)	3 (13.0%)
25 – 34 years	10 (26.3%)	4 (25.0%)	8 (34.8%)
35 – 44 years	12 (31.6%)	2 (12.5%)	7 (30.4%)
45 – 54 years	8 (21.0%)	4 (25.0%)	2 (8.7%)
55 years or older	6 (15.8%)	3 (18.8%)	3 (13.0%)
Married	13 (34.2%)	8 (50.0%)	20 (87.0%)
Single	5 (13.2%)	1 (6.2%)	1 (4.3%)
Single mother	8 (21.0%)	2 (12.5%)	0 (0%)
Widowed	12 (31.6%)	5 (31.3%)	2 (8.7%)
Primary education	27 (71.0%)	9 (56.3%)	18 (78.3%)
Ordinary level education	8 (21.0%)	2 (12.5%)	3 (13.0%)
No education	3 (7.9%)	5(31.3%)	2(8.7%)
Male	**4 (9.5%)**	**6 (27.3%)**	**10 (30%)**
15 – 24 years	0 (0%)	0 (0%)	0 (0%)
25 – 34 years	0 (0%)	3 (13.6%)	0 (0%)
35 – 44 years	2 (50%)	2 (9.1%)	4 (40%)
45 – 54 years	1 (25%)	1 (4.5%)	5 (50%)
55 years or older	1 (25%)	0 (0%)	1 (10%)
Married	4 (100%)	6 (27.3%)	10 (100%)
Primary education	3 (75%)	2 (9.1%)	3 (30%)
Ordinary level education	1 (25%)	3 (13.6%)	7 (70%)

4.2.1 CBO in Kongwa district

Community knowledge on the intervention (WEKISA group)

Beneficiaries and community leaders interviewed knew about the project though not all were directly involved with project activities. When the community leader (chairperson) was asked to describe the CBO objectives he said, the CBO (*WEKISA*) is collecting the garbage from residents and business places and they use pushcart to carry the waste collected to the dumping sites. During the FGD conducted in Kongwa one beneficiary said, we learned about the group project from observing the various activities that were taking place; obtain information from the CBO members and local meetings. The CBO members received training for a period between two to five days mostly provided once at the beginning of the year of CBHI support. The beneficiaries associated the garbage mismanagement with cholera outbreak and malaria in Kongwa.

Community attitudes towards the intervention

CBO members, beneficiaries and community leaders interviewed welcomed the project and appreciated the activities, since the project aimed at mobilizing community to do something to improve the environment. It was felt that the objective to prevent disease outbreak (cholera) through environmental hygiene was particular beneficial. A beneficiary said, our environment nowadays is clean compared with last few years when the CBO was not present, things like bad smell and cholera outbreak were normal before. The CBO chairperson said that, community members do not properly manage waste; they just throw it on the road, which makes collection difficult for the group members, and the district council is delaying the payment to the group. When the community leaders and beneficiaries were asked whether they were motivated to help sustain this initiative and its achievements in the community?

The beneficiaries said, when the garbage get scattered in the working area, they kept it in the barrel and collectors come to collect them on time, pay the collection fee of Tsh.500 per month and the garbage collectors are doing good job, we are happy to work with them. Therefore beneficiaries acknowledged that, the intervention is useful because it has helped to control cholera outbreak, although it was thought that more effort was needed to mobilize and engage the entire community to participate in the implementation of the project.

Community involvement in planning the intervention

Community members confirmed that community involvement is a critical factor of an enabling environment for sustainable community based programs. The CBO leader said, this intervention aimed at raising awareness on garbage collection and environmental cleaning and a respective behavior change of the community members. Consequently he said, the participation of community members, at least to some extent attending meetings supports the efforts of environmental hygiene. A beneficiary said, community members needed not only to be informed about the project activities, but even to be mobilized to participate in them.

However, the necessity to make community members participate remains open at which stage of the project cycle, in which function and with which say community members participated.

The collected data was not detailed enough to draw conclusions about the question , how far the community, and which parts of the community actively shaped the implementation plan or objectives of the project cycle would have allowed a comparison of different relationships and different ways of interaction between the CBOs and their target communities.

When asked on the role of community members during the implementation of the project, beneficiaries reported that they were just involved through meetings and joint environmental cleaning events. Another beneficiary said, we were not involved in anyway, we just saw them collecting the garbage; I know they work for town council and health officer is working with them. The community leader when asked the question, how were the community involved before and after the start of the initiative? "*The chairperson said, the CBO came for introduction to us when started and we recommended them to district council for approval, when they get problems with the community members we do help them as well; as I say now we are still working together to keep our place clean* ". The CBO in collaboration with local government managed to put barrels in the street for garbage collection.

Financing mechanism and group initiative for self financing

CBO leaders and members were asked how the group gets financial support to implement the project. The CBO secretary said, we firstly got fund from CBHI that were used for purchasing working gear such as CBOs wheelbarrows, uniforms, gumboots, dustbins etc. secondly, garbage collection fees whereby every business premise is contributing Tsh.500 per week and household contributing Tsh.300 per household per week. The group also started pig and poultry projects which assist the group to earn more income.

The group members narrated that they were engaged in sunflower cultivation whereby in the 2006/2007 farming season, they earned Tsh 1,500,000. Furthermore the group was contracted by the district council of Kongwa for collecting waste products in Kibaigwa town, where they are being paid monthly by the council Tsh 70,000.

4.2.2 CBOs in Dodoma urban district

Community knowledge on the intervention (*Vendors care participation group*)

Community leaders and beneficiaries interviewed understood the objective of the project. The beneficiaries said, the project sought to improve the appearance of the environment, and relating the project to cholera outbreak. The group leader narrated that, in most areas of Chamwino the problem of improper waste disposal is decreasing. There is a good sign of decrease in diarrhoea cases. Now more than 616 households have been trained on primary health care such as: boiling drinking water, washing hands with soap after using the toilets, eating cooked food, and wash raw food properly before eating. The chairperson complained that, the community is not concerned with rubbish in anyway due to the fact that the government is supposed to be responsible to collect and dispose the wastes. The local community leader said, few households are paying the collection fee of Tsh.300 per household per week. A beneficiary said, we are paying land and house tax, what is the money doing, garbage should be collected without payment. I am a retired civil servant, just receiving Tsh. 20,000 per month, I can not manage to pay collection fee two times a week.

The knowledge of garbage collection and environmental cleaning among the community in Chamwino ward is still very poor simply because the community is not ready to participate to take care of their wastes sustainably. There are a lot of excuses of saying the garbage collection fee of Tsh.200 per household per week is too much to pay. The households prefer digging pit-holes and burning wastes in their homes which is hazardous to the environment.

Community knowledge on the intervention (*Mazingira women group*)

When asked the question of how the idea of starting this initiative did come up? The group chairperson said, the environment was dirty and frequent outbreak of cholera and other health problem. The project aim is to strengthen the communities' capacity for collective action and to help the community acts as catalysts for change. The group stimulated the demand for garbage collection and environmental cleaning. The group chairperson said, at first it was difficult to convince people to pay for the service, but later once we told them about the health and environmental threats of having garbage in the street many were happy to pay.

During the FGDs beneficiaries said, we understand the work of the group (CBO) and the health related problems with garbage mismanagement like cholera outbreak. When asked of what is seen as the outcomes of this initiative in improving community health problems? The beneficiaries said "*magonjwa ya mlipuko (kipindupindu) yanayosababishwa na uchafu yamepungua sio kama zamani, mazingira yamekuwa safi tofauti na siku za nyuma tumefurahia sana*" *meaning that; the disease outbreak has declined and not like it used to be (cholera) in previous days, we are very happy*. The community leader also recited that, we have understood the initiative through seminars and meetings with the group members.

Community attitudes towards the intervention (*Vendors care participation*)

The group chairperson said community inspiration is very low; we spend a lot of time to educate them. Community members still use pit holes to dispose their garbage, they resist paying the collection fee of Tsh.300 per household per week.

Beneficiaries through FGDs said, *the issue of garbage collection and environmental cleaning is a responsibility of the government. He continue saying, we are not employed, very poor and we can not afford to pay for services.*

Through observation the area looks dirty with a lot of garbage thrown in streets. Many household possess pit holes to keep and dispose their garbage.

Community attitudes towards the intervention (mazingira women group)

The CBO leader said, the community is well educated and knows the important of garbage collection and safe disposal. When asked community leaders on community inspiration to care for the garbage they produce he said "*usafi umeimarika katika kitongoji change, wananchi wamebadilika, uchafu haukai majumbani kwao muda mrefu (si zaidi ya siku tatu)*" meaning *that state of cleanness have improved in my ward, community have changed their bad behavior, rubbish does not stay at home any longer (not more than 3 days).*

The beneficiaries said community members have understood the significance of garbage collection from home; we pay the fee of Tsh.200 per week with no problem. The community leader said " *vitendea kazi ni duni na sehemu wanahudumia ni kubwa, pia hakuna mfumo wa kulazimisha kila kaya kuchangia pesa za uzoaji takataka"meaning that the working gears are very weak and the area is a bit large, the community contribution is voluntary; therefore there are no any mechanism to force household to pay for garbage collection.* The CBO leader also said the area is surrounded with many bars and guest houses they throw the garbage everywhere which is difficult for us to collect and dispose them.

Community involvement in planning the intervention (Vendors care participation)

The beneficiaries complained of being involved only at the initial stages of inauguration of the CBO project but not in the later stages when the CBO has started operating.

The community leaders complained of the system in which the group was formed, saying that it appears the only task is to approve the group to CBHI but later on we are not involved in the actual implementation of the project.

Beneficiaries and local leaders expected the CBOs leaders together with CBHI personnel to do consultations during their implementation and to involve us during seminars. One of the beneficiaries when the FGDs was still discussing as to how did the community go about planning the initiative before implementation, he mentioned that, they never involve us (CBO), they only look for their benefits through us. CBO leaders believed that, the local government is not dedicated to support our task by saying; we have been asking to have collection sites in the area for many months but with no reaction.

The community leaders also complained about the CBHI personnel saying that CBHI is not close to local government when dealing with particular CBO activities. The CBHI is not involving us in the disbursement of funds, implementation and evaluation of the project. She continued saying I am a patron of this CBO, I should be involved in every activity of the group, seminars, allowances and even consultations.

Community involvement in planning the intervention (Mazingira women group)

The community leaders and community members complained of having been left out in the process of what was brought for them (CBO) but at the same time admitting that they need skills to know different strategies of project implementation. During community leaders' interviews, one said we need training and attending seminars to how we can know and solve those problems. One beneficiaries observed that why most of the projects are not planned by the community members themselves instead bringing ideas from CBHI to work for their project?

She said CBO does not involve us or CBHI either, what I know they come here every week to ask payment of Tsh.200 or 300, but I suggest the community is suppose to be involved in planning and implementation of the program.

The community leaders said the project that is planned from within the community themselves; the members are willingly to contribute to the development of the project and feel that they own the project.

Financing mechanism and group initiatives for self financing (vendors care participation)

A group was set up with the help grant from CBHI with the aim of cleaning up the environment by removing household garbage from the streets. With the help of local government the group introduced garbage collection fee of Tsh.300 per household per week from few households in Chamwino ward.

The group in collaboration with local government has requested loan from the municipal council of Tsh.600, 000 which up to now have not been granted to the group yet. The group chairperson said, the group is in bad state, they have no other source of income than fee collection only.

Financing mechanism and group initiatives for self financing (Mazingira women group)

CBO leaders and members asked where the group is getting the financial support to implement the project. The group secretary said, we are collecting fees of Tsh.200 per household per week and now negotiating with guest houses and bars to pay at least Tsh.1000 per week due to volume of wastes they are producing. The group members said, we have bank account with a total amount of Tsh.720, 000 and looking for sponsor to finance the project in order to buy modern equipments like truck or tractor.

4.2.3 CBOs Kondoa district

Community knowledge on the intervention (*Eju maendeleo)*

Community leaders interviewed said the community is highly motivated to clean and collect garbage. The community leaders demonstrated an understanding concept behind garbage collection and safe disposal by saying that, the mismanagement of garbage causes ill-health community, example cholera outbreak and breeding site for mosquitoes which transmit malaria pathogens.

The beneficiaries demonstrated that, they have acquired education of health related problems from the CBO members and during local meetings called by local leaders. The CBO members are visiting primary schools to teach on safe handling and disposal of garbage from household.

Another frequently used way of providing health education were visits at household level. The community leaders played an important role in the mobilization of community members to attend meetings. The group members were trained by the health expert on environmental sanitation and awareness meetings and seminar participation organized by CBHI.

Community attitudes towards the intervention (Eju maendeleo)

When the community leaders were asked question on how the community is motivated to help sustain the initiative and its achievement in the community. The chairperson said we are highly motivated, I am also working very closely with the group, they even volunteer for about 80% of their time. The beneficiaries said communities are motivated, scattered garbage on streets has reduced these days. Community members are more responsible for their garbage, always keeping the environment clean.

The group leaders said, when the group started, we faced problem because of the negative attitude of the community members that the group belongs to the group members, but after being given education is where they come to realize that the group is formed to help the community. But still there is resistant from the community members, they thought we are benefiting something. The group members also clean bus stops and market area twice per month.

Community involvement in planning the intervention (Eju maendeleo)

When the CBOs leaders and members were asked how the CBO did planned this initiatives and its implementation. According to the CBO members interviewed said, the proposal to start the CBO came from other people who did not become a group member later on. Other person with the idea to form the CBO motivated others to join and later became either secretary or chairperson of the group. The CBO leaders said, community leaders were involved at different stages of the project such as; village chairperson, village executive officers, street leaders or ten-house leaders in their health promotion interventions. Some of the village chairpersons were not cooperative in mobilizing the community members during awareness meetings; they were demanding funds from the group but were not paid.

The beneficiaries said, our understanding is that if the group uses the leaders for example; street chairperson, ward executive officer or councilor, all these can be the very good key people to carry the message to their people. CBOs members also said, the presence of community leaders on our events brought an impression to the community members that CBO is accepted by the community. When the discussion were going on, street chairperson said seminars should be arrange in collaboration with local government officials, we need to be involved in research to sought out the CBOs which are after money and not the community; when the fund come to CBO we also need to know how they should spend the money, the group should also be given tender by the district council not just an individual person. Privatization should target CBOs instead of individual benefit; this will help to strengthen CBOs performances. The group together with the village environmental and health committee has designed a plan that directs all households to have dustbins for waste deposit, but were not seen in street during our field study.

Financing mechanism and group initiatives for self financing

The question asked to CBO leaders and members of how the group managed to finance implementation of the project. The CBO chairperson said, basically we rely our support from CBHI. At first they gave us money to buy equipments and hope they help us again. We are also contributing from our pocket to make things going. The group plan to start garbage collection at a modest fee to households approximate of Tsh. 300 to 500 per household per week for repairing working gear as well as rewarding group members.

4.3 Sustainability of the Intervention

The term sustainability was defined as the capacity of the successes or efforts of intervention to carry on at the local community after CBHI support was over. The aspects of programme sustainability were found to be theoretical and practical among CBOs. Majority of respondents asserted that they were passing the knowledge and skills they got from CBOs to other community members. Their responses also depicted the actual practice of the skills acquired from these seminars in their daily lives. Beneficiaries also complained about poor performance of CBOs. Example respondents in Chamwino ward complained concerning Vendors Participation group having poor equipments and not performing to a required standard which hinder public joining the programme. Actually community was not satisfied with their service provision in the area. Sustainability was also seen in the efforts of both the communities and the CBO members trying to continue the project by means of establishing income generating project. Although these efforts were not actually seen in all the CBOs some had documented plans of the intention, but others had already initiated the activities. Example WEKISA group had poultry farm, garbage collection fees and incentive of Tsh.70,000 per month from the town council as their source of funds.

In Kondoa, Eju Maendeleo and Tupendane groups have no source of funding to carry on the programme. The groups only depend on CBHI and other donors for financial support which in turn sustainability of the programme becomes questionable.

The continuity of this intervention was also measured by looking at local partnership that the CBOs had formed and were still continuing within their local communities. Local government authority in Kongwa and Dodoma Urban districts were continuing to join hands with WEKISA and Mazingira groups respectively to contribute to the efforts of reducing the burden of refuse and enforcing community by-laws to comply with garbage collection fee payment and environmental hygiene.

4.4 Summary of findings

Study findings have shown that community level of knowledge about the intervention were very high, revealed by findings that most of the participants obtained the information from various sources. The frequently mentioned source of information was: community meetings, community outreach volunteers, community leaders, friends and CBO members.

Findings showed that participants had negative perception towards the CBO project activities before they were informed their role. This includes exaggeration of CBO getting funds from sponsors to carry out environment hygiene, not believing that CBO is working to strengthen the state of the environment. Community leaders also demanded to be paid in order to mobilize the community to attend meetings or joint clean the environment.

These perceptions changed to some extent when the communities were educated concerning the objectives of the initiatives. Some community started to pay for garbage collection fee to the CBOs.

Participants said the negative attitudes toward the group initiative are held because they had poor knowledge towards group initiative concerning their role in garbage collection and health hazards associated with poor garbage disposal.

Research findings showed that factors for non-success and non-sustainability of the intervention among the CBOs were: poor availability of local skills, poor CBOs and LGAs leadership skills, human capacity development, poor local institutional capacity, collaboration among organizations, poor monitoring and evaluation and unavailability of funds.

The participants demanded the government officials to appreciate the work of CBOs by providing them contract to collect garbage and capacity building of community members instead of individual benefits. The participants also demanded the CBHI to involve the local government in planning, implementation, monitoring and evaluation of the project so as to measure performance if each CBO concentrated to achieve their objectives.

Research participants suggested the CBOs and local government work together to sensitize the community through public meetings from household to national levels in order to change the negative perceptions embedded within the society as these have been seen as source of community knowledge and behaviour change towards the project intervention. Therefore the society will be able to change their garbage handling and disposal behaviour.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION

This chapter starts by discussing the findings of the study. The chapter then presents conclusions and recommendations from the study. The presentation is organized into three sections. The first section is the discussion about to what extent communities were knowledgeable on the intervention, attitudes towards the intervention, community involvement in planning the intervention and financing mechanisms and group initiative for self financing. Second section is conclusion followed by recommendations and lastly lessons learnt.

5.1 DISCUSSION

5.1.1 Community level of knowledge on the intervention

The results showed that community members were highly knowledgeable about the intervention benefits. This indicates high level of success in information spreading on the intervention in the districts. This is shown by the responses from the study population who identified community leaders, community outreach volunteers and community meetings as their main source of the intervention. Male and female participants were equally knowledgeable of the intervention. But between CBOs, participants from Mazingira women group and WEKISA groups showed higher understanding of the intervention compared to Vendors care participation and Eju Maendeleo group.

Under this high level of knowledge, then one would expect a high degree of community involvement in implementation of garbage collection and environmental cleaning initiative seriously.

Despite the intervention knowledge being high, communities do not take care of their rubbish sustainably and pay garbage collection fee as required by service provider (CBOs). This may somewhat express community dissatisfaction with the CBO services. This also indicates that knowledge alone does not assure that the communities will successful implement the initiative, but the community needs to be satisfied with the service being provided in return for their participation, financially or other way.

The huge difference between knowledge and community involvement in the program implementation underscores the need for further studies to find other factors to improve CBO performance in the district and country at large. It does not need to rely on knowledge and garbage collection fee as the main reasons; there are other factors which as well may determine such decision of paying for garbage collection or even the community to volunteer in environmental cleaning.

Because the CBO initiative is voluntary, willingness to join and pay for garbage collection is a function of the value judgment including: cultural factors of the community, perceived risk associated with garbage and perceived benefits of the initiative.

This is consistent with findings of the study which was done in Nepal. The later study found residents' dump their garbage indiscriminately around the neighborhood in the belief that municipal sweepers would somehow collect and dispose it (Dungel, 1992; Memon, 2000).

Poor CBO performance may also influence community not to join the intervention. This may continue to hinder sustainability of the CBO initiative. In this study poor performances was related to: shortage of working equipments, distance of dumping sites, absence of dust bins in streets, lack of incentives and improper management of rubbish among households, bars and guest houses.

The study has shown that the community understood the dangers associated with mismanagement of garbage and environmental cleaning. They knew the diseases associated with poor garbage management which includes: cholera, typhoid and malaria. This was also reported in other studies done by Markalio (2008); Ahsan and Ahmad (2000) that poor communities of urban areas, the most adverse impact of household solid waste is incidence and prevalence of various diseases such as: malaria, cholera, respiratory problems, eye and gastro-intestinal diseases.

5.1.2 Community attitudes towards the intervention

Participants' perception and attitudes towards the intervention were negative towards poor garbage management and its health hazards. But the positive part is that participants appreciated the existence of CBOs in the area because they help to collect the garbage as the only service provider. Findings consistently showed that community changed their attitudes toward CBOs intervention after being educated on health related illness with poor garbage management.

Findings show that the community perceived that the responsibility of garbage collection and safe disposal is the responsibility of the government. No one volunteered to clean the garbage from the street because they thought it was the responsibility of the local councils.
The communities were not trained in volunteering and that experience had also shown that the community could not contribute money towards garbage collection and environmental cleaning activities. This implies that there is a need to give appropriate knowledge about volunteering in community works, so that negative effects can be minimized. This is important so that people can handle garbage safely to minimize spread of waste related diseases.

These findings have shown that after the community was educated their attitudes about garbage collection and environmental cleaning changed significantly, the community were positive towards the initiative. These findings are consistent with a study done in Bangladesh among the community concerning household solid waste collection where it was shown that positive attitudes towards household solid waste management was associated with use of incentives and education (Ahsan and Ahmad, 2000).

These findings show that the community progressively reduced disease outbreak after the CBO activities. The garbage was not staying more than three days and community started to clean their environment. Respondents reported considerable achievements with regard to behaviour change, but at the same time they stressed that after funding period of one year only, the amount of funds and transportation problems of garbage from the households due to poor infrastructures and equipments hampered the performance of the project and endangered a sustainable behaviour change among the community.

5.1.3 Community involvement in planning the intervention

Programs from donors that have not been properly integrated within the local contexts often results in non success and are not sustainable. In order to achieve success of a community based intervention that fits local capacities, readiness and resources under this short time of funding, planning for the program has to be comprehensive. The CBOs under study had limited planning. Effective planning goes hand in hand with situation analysis to identify the strategies, weakness, opportunities and challenges of the program.

The establishment of CBOs in rural and urban areas could have contributed in minimizing the situation if they are inclusive. According to TDHS statistics there is difference of the literacy level of the urban population versus the rural population in both districts. Thus low literacy level can not be considered as having contributed to poor planning on the intervention.

Some members of these groups had already taken the initiative previously working as volunteers in the local area before the CBHI project called for proposals. This previous experience of serving the communities created a good start for this initiative under the support from CBHI. Most of the community members preferred public meetings with the CBOs leaders when planning for this intervention. Community leaders were regarded as good by most of CBO members, but better still was to arrange the project plan together with the community members. But the question was whether it is practical to involve the whole community in planning the program.

Definitely it is not achievable to involve every person in the process, since many community members expect leaders to communicate to them on which way to follow in order to solve the problem of inappropriate garbage disposal.

The same leaders, on the other hand do not have the full capacity to identify the health problems of the communities and hence they also needed capacity building.

The community leaders and community members are expecting skilled personnel from outside the area to take the lead in identifying their problems. Indeed giving the communities the full independence to decide on health program often makes the projects very slowly to achieve its goals, even the program run the risk of become complicated in the sense that the communities are over ambitious. Therefore community approach alone to community based interventions might fail unless measures are taken to build the capacities of the targeted communities to head these interventions. With the current situation of global warming pattern there are various determinants of health that communities have limited knowledge on them. But still involving the community to some extent has its setback and advantages too.

In most cases success of the intervention can be evaluated effectively at the end of the health intervention when participatory evaluation remains the principle right from planning stage of any community interventions. Certainly shared ownership increases trustworthiness and ensures the significance of project evaluation. It also increases the community sense of ownership and local utilization of resources which enhance project sustainability.

Actually it can not be practicable to involve the whole community but involvement does not necessarily mean more financial expenses to CBOs. For example when the community leader gets the progress reports of the intervention, the important aspect is identifying and utilizing the best local means of communication that the local communities prefer so as to involve as many members as possible in the program.

Otherwise many of the community members who are not involved will consider the intervention as unsuitable although they might still find it beneficial to the community.

Lack of proper communication leads to resistance against community mobilization to attend meetings by community leaders may hampers the progress of the initiative; fee payment among the members and proper handling of garbage and volunteering in implementation of the project.

5.1.4 Financing mechanisms and group initiative for self financing

The objective of CBO initiative was to attract large numbers of people to the intervention to pay garbage collection fee and reduce poor disposal of garbage in residential areas, which is a source of cholera outbreak and other diseases in low income communities. Although CBHI support has been one of the financial sources for the CBOs its availability has been problem. This is because it was mentioned by participants that CBO has received support from CBHI only once since the initiative started to operate in the districts. Denying the CBHI support to the CBOs may be taken as one of the contributing factors in poor performance.

This is due to the fact that, when the CBOs collects a certain amount of money from the households, the local government or donors is supposes to top up because the garbage collection fee is not enough to pay for compensation and repair of equipments. When this is not done the community efforts to improve the initiative performances are declining.

For a particular community to decide to join in particular initiative a number of factors are considered such as acceptability or perceived benefits of the intervention as well as its applicability.

However it has also been found that price is not only factor related to willingness to pay for garbage collection but complex human behaviour, choice and motivation can also determine it.

It has been indicated that in voluntary intervention program it is important to minimize the favored community and involve the majority because this may be one of the causes of intervention to fail to meet its objective. Individuals to decide to take part several factors are contributing; it can not be only one, but a combination of various factors.

Therefore the knowledge of imitative has not been properly internalized by the community. CBOs have not been successful in attracting the majority of the community as it was expected by the original plan. This is expressed by the fact that since the initiative started in three districts, it has only attracted few community members.

The problem reported for community members were identified to be lack of money (inability to pay), poor performance of CBOs due to shortage of proper equipments, poor infrastructures and human behaviour being not ready to change. A bureaucratic procedure to get the money from the local councils also mentioned as the cause of poor performance of the CBO initiative. CBO members said to be disappointed with this bureaucracy. Some CBOs showed good performance than others due to the fact that they have various source of funds to finance the project does not depend to donors alone.

5.2 CONCLUSION

The level of knowledge above the initiative in Dodoma region is high. This is an indication of cooperation between CBOs and community leaders. However the community members' participation in the initiative is low.

There is a need of work to be done to fill the gap of the discrepancy between the level of community knowledge about the intervention and attitudes of the community members towards the intervention. The main identified sources of information were community meetings and house-to-house outreach, then these types of information dissemination shows to be working properly in the community. Although the community members is aware of ill health associated with improper disposal of garbage still community members were disposing garbage in pit holes and streets of their residents unpleasantly. This act shows bad attitudes of the community towards the intervention in Dodoma region.

The intervention in Kongwa was a model to community participation. The activities were taken up with great enthusiasm and dedication. They were carried out routinely and successfully with the considerable support of the district and local health authorities.

In marked contrast there was a general reluctance in the community of Chamwino ward to participate in the initiative activities. People expected the project to provide them with financial benefits which were not given. Community involvement and planning process of CBOs had some challenges due to insufficient environmental scanning.

But involving the whole community does not guarantee CBOs success but a few people who have the capacity to lead should be included.

The problem is that getting capable team that can guide the community become also hard especially when the local personnel have less capacity to carry on the project.

The already existing CBOs in the communities seem to do better and have the likelihood to be sustainable. If the once funded CBOs get funded again, might even bring more achievement. It will be less costly to do refresher training than newly established CBOs. Capacity building during this time should be done sufficiently in order to assist these CBOs to develop proper concepts which can be monitored and evaluated at all stages of the process. Communication should be done publicly in community gathering and not just to CBOs and one of few community leaders.

5.3 RECOMMENDATIONS

5.3.1 Identify good leadership

The project activities can only be successful if the leaders and community members think it is a good idea. In this study two of the intervention sites suffered from weak leadership, which became one of the prime reasons for the lack of community involvement. In the future greater efforts must be made at the beginning of the activity to identify good local leadership that has strong community support.

One approach might be to identify CBOs already working with local communities to seek their help in identifying active communities. Community leaders should be asked to arrange a community meeting to discuss the problems of intervention in the community; and conducting monitoring and evaluation.

5.3.2 Community participation

For any intervention to be successful it is important to engage the community in the decision making processes at every opportunity. This is particularly difficult in urban settings where social structures are weak since the community is diverse and family connections are limited. Although the current project sought to engage the community, the process was a slow and lengthy one that would not be rushed. Considerable time with expert should be spent with the local community, building support and explaining the nature of the activity.

5.3.3 Volunteerism versus monetary rewards

The communities with which the project worked are poor and have little time for anything other than the daily grind of finding a means to survive. The study team believed that the best way to make intervention sustainable is to provide an incentive for individuals to participate. The alternative view was that, like many other community services, should be based on voluntary work.

While this approach is favored by many, there are few success stories that resulted from it, particularly in urban areas where communities are often weak and fragmented. In these situations the logic of *"why should I do the work for my neighbor if my neighbor does not do the work for me?*" can prevent or destroy the possibilities of volunteerism.

If any future program bases its approach on voluntary team, it must define the precise nature of this approach to everyone involved from the beginning of an intervention. Otherwise, people may perceive it differently and some may expect to be paid for their services. The study assumed that volunteerism should be understood and practiced.

5.3.4 Income generation

Even if the project is based on volunteerism, there will be remain a need to generate a small amount of money to pay for repairs and purchase new equipment, e.g., rakes, spades and wheelbarrow. If additional money can be generated beyond those requirements, small payments could be made to those individuals most active in the program. The established CBOs should be encouraged to carry out environmental cleaning and garbage collection for a small payment. Payment should be made by local authorities, directly from residents or some combination of all these. If these CBOs develop and expand they should be funded either directly from the local budget for garbage collection or sub-contracted to private companies who carry out waste clearing paid by the local councils or municipal authorities. In essence the CBOs should collect rubbish and clear drains, while the private companies would use their trucks to collect the waste from the community.

5.3.5 Activating by laws

Many by-laws exist that are designed to prevent people from disposing off their waste in roads and streets or creating potential mosquito breeding sites, but these are rarely, if ever, enforced. Local politicians and environmental health officers should be encouraged to review and possibly implement these powers.

5.3.6 Memorandum of understanding

In order to ensure from the start of the activity that everyone clearly understands their roles, a memorandum of understanding should be produced, not just for each CBO team member, but also all key players, including representatives from the local councils and communities. This may help increase the prospects for sustainability of the intervention activities.

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