

Public-Public-Private Partnership for Sustainable Solid Waste Management in Eldoret Town, Kenya

Mwengei Kennedy B. Ombaba^{1*}, Phyllis A. Arogo², Elizabeth Murey³, Lagat John Kipngetich⁴

1.Garissa University College Faculty of Management and Social Sciences

P.O BOX 1801-70100 ,Garissa-Kenya

2.University of Eldoret Dept. of Development Studies

3.Moi University School of Human Resource & Development

4. Mount Kenya University

Abstract

Solid waste management is one of the most difficult environmental problems in the urban centers of developing countries, where services are often grossly deficient, especially within low-income settlements. The purpose of this study was to investigate if Public-Public-private Partnership contributed to sustainability of solid waste management, in Eldoret town, Kenya. The objective was to investigate the effects of public-private firm's resource capacity on sustainability of solid waste management in Eldoret town, Kenya. The researcher used stratified simple random sampling to get the respondents. Data was collected using interviews and questionnaires. Interviews were conducted to the management while the questionnaires were distributed to the sampled staff. Study findings revealed that resource centre has a significant effect on sustainable solid waste management; regulatory framework has a positive significant effect on solid waste management. The involvement of private partners in ensuring sustainable solid waste management is a positive contribution. Municipals should build a uniquely capable workforce enabling it to counter the problem of solid waste management. Clear health and sanitation regulations governing waste procedures should be in place. Municipal should relate well with residents, employees, SMEs and industries since good mutual relationship are paramount for sustainable solid waste management. Private partners should be consulted in formulation and development of bylaws and in making environment management systems for the public and private sectors.

Keywords:Sustainable, solid waste, Public private partnership, Eldoret, Kenya

Introduction

Sustainability is the continuous improvement of a present state without compromising the future state (Choguill, 1996). Solid Waste management is the collection, transportation, processing, recycling or disposal, and monitoring of waste materials. Development is incomplete without sustainability. In this modern world, there is the need for, not only development, but sustainability of the environment and the world in general. Lack of solid waste management can have major implications for the health of the environment, economy and society.

Awortwi (2004) describes Public-public-private partnership (PPP) as a government service or public-private business venture which is funded and operated through a partnership of government and one or more public-private sector companies. PPP involves a contract between a public sector authority and a public-private party, in which the public-private party provides a public service or project and assumes substantial financial, technical and operational risk in the project.

Overburdened and ineffective solid waste management systems are congruent with the rapidly changing consumption patterns that plague cities within the developing world. The resulting discrepancy between the current solid waste management systems and the growing need for expanded collection and disposal facilities has left an accumulating amount of solid waste within the urban environment producing unaesthetic and unsanitary conditions. The development of city wide initiatives for waste disposal is limited by the rapid pace of urban growth itself and the limited amount of financial resources available to the municipality for waste management. Filling the void, local initiatives to create urban solid waste management play a key role in building better solid waste management systems. Kenya's Vision 2030 also includes implementation of an integrated solid waste management system as a driver for development. The research will focused on public-public-private partnerships and deliberative democracy approaches in order to achieve sustainability within the solid waste management sector.

Problem Statement

Solid waste management is one of the most difficult environmental problems in the urban centers of developing countries, where services are often grossly deficient, especially within low-income settlements (Rathi, 2007).

A survey conducted on the residents around the dumping site in Nairobi during the JICA (2010) study revealed that there were serious complaints about smoke, smell, and broken glasses. Respiratory and stomach problems among children were common in the nearby clinics and were cited by the people interviewed. School children passing through the dumpsite often picked objects, which were dangerous to their health.

Also, according to JICA study (2010), there was the absence of a regular solid waste collection service and wastes were dumped in open spaces, on access roads, on the streets and along watercourses. Dumps were invaded by waste pickers and animals which scattered the wastes and the wastes served as breeding grounds for disease vectors, primarily flies and rats. Decomposing garbage percolated into soil and nearby water sources and the resultant contamination of food, water and soil had serious environmental consequences. Uncollected refuse also found its way into open drains which became blocked, and the dammed-up stagnant water encouraged the breeding of mosquitoes resulting in turn in many cases to various diseases.

Furthermore, a study done by Frank (2006) in Uganda showed that the privatization of urban services can be motivated by the following considerations; reducing the cost of public services to the consumers, relieving the financial and administrative burden on the government, satisfying unmet needs, increasing productivity and raising efficiency and promoting competition, adopting innovation and new technologies, maintaining the condition of equipment and improving responsiveness to cost control measures. The study will contribute more private public partnership which has been encouraged by World Bank as a solution to waste management. The millennium development goal and Kenyan vision 2030 stipulates that there is need to ensure environment sustainability. It is with these stated problems that the research studied to find out whether introduction of public-public-private partnerships would be appropriate for the sustainability of solid waste management in Eldoret town, Kenya.

Resource Based Theory

This study was guided by resource based theory. The popularity of the resource-based view (RBV) of the firm has turned the focus on the black box of the firm. Theoretically, the central premise of RBV addresses the fundamental question of why firms are different and how firms achieve and sustain competitive advantage by deploying their resources. During the last 50 years, many management academics have contributed to the development of this topic (Selznick's 1957). For example, Selznick's (1957) idea of an organization's 'distinctive competence' is directly related to the RBV. Also, Chandler's (1962) notion of 'structure follows strategy', as well as Andrews' (1971) proposal of an internal appraisal of strengths and weaknesses, led to the identification of distinctive competencies.

However, the founding idea of viewing a firm as a bundle of resources was pioneered by Penrose in 1959. Penrose argued that it is the heterogeneity, not the homogeneity, of the productive services available from its resources that give each firm its unique character. The notion of firm's resources heterogeneity is the basis of the RBV. The significance of the resource perspective as a new direction in the field of strategic management was broadly recognized with the path-breaking article by Wernerfelt (1984). Wernerfelt (1984) suggested that evaluating firms in terms of their resources could lead to insights that differ from traditional perspectives.

Literature Review

Policy makers and the academics who are studying the role of the states in 21st century and those who try to bring about the efficiency, development and provision of high quality public services are very interested in public public-private partnerships. International organizations such as the European Union, the OECD (Organization for Economic Co-operation and Development) and the World Bank have strongly advocated and promoted public public-private partnerships. According to them public public-private partnerships can bring about improved efficiency and quality in public services (Osborne, 2000), similarly, Awortwi (2004) argued that a Public-Public-private Partnership (PPP) is a system in which a service or a project is funded and operated through a partnership of government and one or more public-private sector organizations e.g. solid waste collection,

Public-Public-private Partnership (PPP) often starts when a crisis is identified. Crisis can occur when a service is not delivered, the need is high and the government cannot do it anymore. Also when there is long term planning, driven by a clear understanding of and respect for the needs of various actors and when there is an individual, somebody who pushes for change called the 'champion' that is very influential and can make a huge difference, (Gentry, B & Fernandez, L 1999). Public-Public-private Partnerships are happening because public and public-private actors cannot meet their individual needs alone. Governments should not assume that public-public-private partnerships provide easy outs to difficult servicing issues. They should expect that increased transfer of risk will result in higher expectations for reward by the public-private sector and that the negotiation of contracts may require a high degree of expertise. Governments have to take into account the potential benefits and risks associated with public public-private partnerships.

Public-private firm's resource capacity and sustainability of solid waste management

Public-public-private partnership is a long or medium term arrangement between the public and public-private sectors whereby public sector transfers part of its responsibilities to the public-private sector (World Bank 2011). These arrangements are typically formed with clear goals and agreements for delivery of public services or

delivery of public infrastructure.

Due to increasing problem of municipal solid waste management in most cities in the developing countries, public-private sector participation in providing solid waste services started as a response to major failures of service delivery by the public sector (UNESCAP, 2011). It is often believed and proposed that public-private sector participation in providing municipal services could be the best possible way to solve the current waste problems in developing countries and in particular public public-private partnership is seen as a potential alternative to the traditional service delivery system fully controlled by the public sector. More importantly, public-public-private partnership is believed to provide the services that the public sector have neither the resources nor the expertise to supply alone (Forsyth 2005).

According to UNESCAP, public-public-private partnership itself is not a solution option for the service delivery problems but rather a viable project implementation mechanism for a desired solution option (UNESCAP, 2011). Public-public-private partnership arrangements pave the way to both the public and public-private sectors to share the responsibilities in providing the services (Cointreau 1995). Public public-private arrangements can have many forms, but the common distinguishing characteristic is a shared governance structure and decision-making process. Such a partnership, combines the public-private sector's dynamism with the public sector's responsibility of public interest which makes it work better (Ahmad et al., 2006).

Furthermore, a third party—the people—can also play a considerable role in public public-private partnership. Citizens can contribute significantly to service delivery for instance they can support public-private sector participation with payment of service charges and also they can play an active role in accountability improvement and service quality of both public and public-private sector. These kinds of arrangements turn the people's role from passive service receivers to active service partners that in return lead to high quality and efficiency of work (Ahmad et al., 2006, UNESCAP, 2011).

Organizational capability, (Grant, 1991) is a firm's ability to perform repeatedly a productive task which relates either directly or indirectly to a firm's capacity for creating value through effecting the transformation of inputs into outputs. The internal capacity (human resources, machinery capacity) of an organization affects or shapes the organization's performance (Lusthaus et al., 2002). The simple theory of public service improvement is that more resources lead to better results. But the resources must be effectively managed in order to deliver the maximum potential benefits. According to public choice theorists, budget maximization leads to allocative efficiency (meeting demand) but not productive efficiency. The quality of service can be expected to deteriorate as the sizes of the public budget expand. However, in the public-private sector, extra resources couple with prudent operations management is likely to lead to improved performance in order to maximize profit. Financial resources allow real resources to be purchased and this in turn influences service performance. The proposition is that the relationship between resources (financial and real resources) and service improvement is positive (Boyne, 2003).

The managerial task is very demanding and essential for success. The need to produce creative work requires special managerial efforts and capabilities. The impact of managers on their firms' performance is likely to vary depending upon such factors as the knowledge, intelligence, and experience of the persons holding the managerial position. The management literature suggests several measures to capture the relative competence of managers and among them are: the level of qualifications, number of years of experience, lengths of managerial experience (Nachum, 1996). The quality of employees depends on the individual knowledge (creation of manuals, expert systems, team work, business code and so on), which is transformed into organizational knowledge. The quality of the employees could be measured by the salary level. As an operational measure for the quality of employees average salaries are used as proxy (Nachum, 1996). Using higher salaries to attract the best talents has become a common strategy in many industries.

Management (operational and strategic processes) in public-private organizations has relationship with performance of the companies (Boyne, 2003). The management variables include both strategic variables (strategy processes and content, leadership styles, and human resources management) and operational/tactical variables (capacity planning, operations supervision, operations improvements, and service design and maintenance management).

Research Methodology

The study used quantitative research methodology.

Research Design

Research design is adopted by this study is survey research design. Some interviews were done face-to-face with people at home, in school, or at work. Other times questions were sent in the mail for people to answer and mail back. Increasingly, surveys are conducted by telephone (Rand, 2009).

Study Area

The researcher conducted the study in Eldoret town, Uasin-Gishu County, Kenya. Eldoret town is located about 300KM North West of Nairobi. It lies in the north rift part of Kenya. It is located at 0° 31' 54" N and 35° 15' 58" E. The altitude varies from 2100 above the sea level at the airport to more than 2700 meters in nearby areas. Eldoret town covers an area of 11.2 sq. km and has 5 wards.

Target Population

The study was conducted the study in Eldoret town, Uasin-Gishu County, Kenya. The target population for the purposes of this research consisted of the Uasin-Gishu County total population of workers from the department of environment and the National Environmental Management Authority personnel within Eldoret town. The target population of the respondents was 310 in NEMA, Eldoret Office (NEMA 2013) and 162 in Uasin-Gishu County, Department of Environment (EMC 2013).

Findings

Involvement of Private Partners

The researcher sought to establish the involvement of the private sector in solid waste management. Research findings revealed that 16.9% (35) of the respondents affirmed that private partners are consulted in formulation and development of the bylaws and this was supported by a mean of 3.78. In addition, 41% (85) of the respondents affirmed that there are incentives put in place to motivate individuals and organizations engaging in solid waste management. However, findings on whether there are incentives put in place showed impartiality as shown by a mean of 2.99. Further findings showed that private partners are involved in making environmental management systems for the public and private sectors as evidenced by 18.3% (38) of the respondents. On the contrary research findings on whether private partners are involved in making environmental management systems for both the public and private sectors showed impartiality as evidenced by a mean of 3.2. Finally, private partners involvement in engaging the community in waste management by establishing and supporting community based recycling and composting summed up to a mean of 3.07 showing impartiality whereas only 41.6% (86) of the respondents generally agreed on the matter. In general, involvement of private partners summed up to a mean of 3.2585, standard deviation of 0.66299 and skewness -1.991.

		GA	n	sd	Mean	Std. Deviation	Skewness
private partners are consulted in formulation and development of the bylaws	Frequency	35	17	155	3.78	1.11	-1.013
	Percent	16.9	8.2	74.9			
there are incentives put in place to motivate individuals and organization engaging in waste management	Frequency	85	29	93	2.99	1.012	-0.283
	Percent	41	14	44.9			
private partners are involved in making environmental management systems for the public and private sectors	Frequency	38	85	84	3.2	0.902	-0.573
	Percent	18.3	41.1	40.6			
private partners are involved in engaging the community in waste management by establishing and supporting community based recycling and composting projects	Frequency	86	8	113	3.07	1.164	-0.375
	Percent	41.6	3.9	54.6			
Involvement					3.2585	0.66299	-1.991

Hypothesis Testing

Hypothesis 1 (H_{01}) revealed that there is no relationship between resource capacity and sustainable solid waste management. Findings showed that resource capacity had coefficients of estimate which was significant basing on $\beta_1 = -0.134$ (p -value = 0.008 which is less than $\alpha = 0.05$) implying that we reject the null hypothesis stating that there is no significant relationship between resource capacity and sustainable solid waste management through PPP. This indicates that for each unit increase in the negative effect of resource capacity, there is 0.134 units increase in sustainable solid waste management. Furthermore, the effect of resource capacity was stated by the t-test value = -2.698 which implies that the standard error associated with the parameter is less than the effect of the parameter.

RECOMMENDATIONS AND CONCLUSIONS

Research findings revealed that resource capacity has a significant effect for sustainable of solid waste management. Research findings showed that the resource capacity in the study area was not sufficient. Resources

such as ICT resources, financial resources and logistical capacity aid the management in operations and their availability positively influences performance. Research findings showed that human resource manpower in the municipal was not sufficient hence there was no sustainable solid waste management since the availability of human resource is the key factor for sustainability of solid waste management. Impartiality among respondents on the availability of underground water points out the possibility that solid waste disposal is not managed properly and has affected underground water. Therefore the study findings show that to achieve sustainability of solid management through PPP, firms with strong resource capacities should be involved.

Resource capacity has an effect on sustainable solid waste management. Therefore private firms should have unique and quality resources in order to achieve sustainable solid waste management

There is enough evidence to conclude that resource capacity is positively associated with sustainable solid waste management. This is because when there is no sufficient resource capacity, sustainable solid waste management cannot be achieved since the resources used to meet the goal of sustainable solid waste management are unavailable.

Further Studies

This study main objective was to investigate if Public-Private Partnership contributes to sustainability of solid waste management in Eldoret town, Kenya. From the study findings, the findings were only limited to determinants such as resource capacity more determinants need to be used.

The new study can also make use of other theories a part from resource based theory like the societal theory.

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