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The journey to a sustainable society: The power of sharing information

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Abstract

In the past decades environmental problems have continued to multiply and change character from both local to global and from low complexity to high complexity. As the complexity enlarges, business enterprises are confronted with social, economic and environmental claims (Oribu, King'oriah and Agwata, 2014). In this regard, there is need for businesses to establish what the local communities consider to be the greatest influence over their sustainability so that the same is taken into account in the preparation of business strategic plans. In order to do this business enterprise will need to share information on the initiatives that they are putting in place to mitigate on environmental degradation. The main objective of this paper is to establish the role of information sharing in attaining a sustainable society. The specific objectives are to analyse the role of voluntary business action in achieving sustainable development, analyzing the role of stakeholder collaboration in sustainable development and analyzing the effects of government regulations in achieving sustainable development. A survey was conducted in September and October 2013 to establish what the local communities considered to be the greatest influence in the achievement of sustainable development around the Lake Naivasha Ecosystem in Nakuru County, Kenya. Respondents were asked to rate on a Likert scale what among voluntary business action, collaboration with stakeholders and government regulations that they thought would influence sustainable exploitation of the natural resources. Data collected was analyzed using pie charts and bar charts. The study recommends that in order to achieve sustainable development, there is need to share information and collaboration with all the stakeholders. This implies that there should be stakeholder involvement in the development of various business strategic plans in order to understand how various business activities will affect the community.

Keywords: Sustainable development; Stakeholder collaboration; Lake Naivasha ecosystem

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1. Introduction

The word *sustainable development* emerged in the mid 1990's due to the worrying evidence of ecological degradation and other biophysical damage to the environment despite the huge overall increase in material wealth. It had been noted that there was disappointing record of post World War II (WWII) 'development' where there was worsening poverty and desperation (Kemp et al., 2005). The World Communication on Environment and Development (WCED) was formed to address these concerns. WCED concluded that the ecological and social failures had common causes which demanded a common response. This led to the publication of "*Our Common Future*" (WCED, 1987) which raised a lot of interest in debate about sustainable development. The subsequent publication and adoption of Agenda 21 also referred to as the Rio Declaration on Environment and Development. Later the statement of principles for the sustainable management of forests was signed by more than 178 governments (Kemp et al., 2005) at the United Nations Conference in Rio de Janeiro, Brazil, in June 1992. The concept of sustainable developmenthas attracted considerable discussions. It comprises of three essential aspects;

- *Economic: A*ble to produce goods and services on a continuing basis, avoiding extreme imbalances within the sectoral areas which may lead to the damage of agricultural or industrial production and maintaining manageable levels of government and external debt.
- *Environmental*: Mmaintenance of a stable resource base through the avoidance of over-exploitation of natural resources, and avoiding the depletion of non-renewable resources through the investment in adequate substitutes. This should include maintenance of biodiversity, atmospheric stability and other ecosystem functions not classed as economic resources.
- *Social*: A socially sustainable system achieves fairness in distribution and opportunity, adequate provision of social services including health education, gender equity, and political accountability and participation. It is in this regard that Kates, Parris & Leiserowitz (2005) concludes that sustainable development involves negotiations in which workable compromises are found that address objectives of competing interest groups.

Covering an area of approximately 3.400 km²the Lake Naivasha catchment and ranges in altitude from 1,900m to about 3,900m above sea level. The main economic activities include: pastoral farming, small-scale and large-scale agricultural farming, horticulture, ranching, tourism, fishing,wildlife conservation, local government activities, power generation, and basin inhabitants. Although some of the basin inhabitants are dependent on the broader Kenyan economy through tradesome are basically dependent on the geothermal power productionas either employees or entrepreneurs.Intensive commercial horticulture and flower farming covers over 50 square kilometres of land. High value fresh vegetables and cut-flowers are exported to the European and English markets by the agricultural industry. A research conducted by WWF (2012) established that these activities provide livelihoods to over five hundred thousand people living within the basin.

The current resource-intensive development patterns at the Lake Naivasha ecosystem are ecologically and economically unsustainable. Although sustainability is often seen as protection of amenities such as cultural diversity, it is also about continued advancement or *creation* of a better and more just world (Kemp,

Parto& Gibson, 2005). Poor land-use practices within the ecosystem, unregulated and excessive water abstraction for domestic, agricultural/horticultural and geothermal generation use, weak policy enforcement, population pressure, water pollution due to waste disposals and climate change due to the green house gas effects. These have resulted in degradation of ecosystem services, economic losses, worsening poverty and reduction of biodiversity are some of the identified sustainability threats in the cathment (UN-water International Conference, 2011).

There are numerous risks and opportunities to be gained if concerted efforts are put towards sustainability.Taking the reduction in water abstraction for commercial farmers as an example, the activity affects employment, export earnings, livelihoods andbrings about social tensions. A report by WWF (2012) notes that although the manifestations of the risks are uncertain, the ultimate implications are potentially significant. Significant development pressures on the increasing urban-agricultural development and increased water abstraction has been brought about by the population pressure and economic growth in the area as a whole. This coupled with the increasing temperature-climate variability may bring about some risks in the future if nothing is done about the same.The risks and opportunities need to be identified in order to direct resources towards their mitigation in order to sustian the opportunities for social and economic development.A study was initiated in the region to demonstrate how economic incentives for both ecosystem service buyers and sellers can be used to achieve significant land and water management improvement. This study is still in its early stages of implementation and it is anticipated that the findings will significantly improve the way things are to be done going forward. It is anticipated that the study will help in quantifying the gains in water quality/quantity or livelihood improvement achievement. The overall approach used in the study has been praised as a model that can be used to serve elsewhere in Africa and other developing country contexts where conservation of soil, water and biodiversity must be seen to be delivering tangible livelihood benefits (UN-Water International Conference, 2011).

1.1. Objectives of the study

The main objective of this paper is to establish whethersharing of information to all stakeholders in the Lake Naivasha ecosystem will have any influence in the sustainable development initiatives. The specific objectives are to analyse the effects of voluntary business actions on sustainable development, analyze the effects of stakeholder collaboration on sustainable development and analyze the effects of government regulations on the sustainability of the Lake Naivasha ecosystem.

1.2. Research questions

In order to achieve the objectives of the study, the researcher sought to answer the following questions:

- (1) How does voluntary business action affect sustainable development at the Lake Naivasha ecosystem?
- (2) What are the effects of stakeholder collaboration on sustainable development?
- (3) How do government regulations affect sustainable development initiatives?

1.3. Significance of the study

Lake Naivashais both a national and international conservation area having been declared an Eco-hydrology Demonstration site in 2005. This has led to an increase in the number of stakeholders who have an interest in the way its resources are managed. In view of the number of stakeholders, the risks and opportunities to be gained through concerted efforts towards sustainability are numerous. For example a reduction in water abstraction for commercial farmers, will affect employment, export earnings, livelihoods and bring about social tensions. There is therefore an urgent need toexamine the importance of sharing of information in order to know what each of the stakeholders is doing to safeguard the environment. Guarding against the overexploitation of the natural resources will bring about sustainability. Although there have been several research findings on various issues relating to sustainability in the ecosystem, these findings are often not shared freely. It is also orth noting that the 'Wetlands Monitoring and Assessment Strategy for Kenya (2012) which was developed by the National Environmental Management Authority (NEMA) does not appear to encourage or appreciate the role ofinformation sharing.

2. Literature review

Schnurr and Holtz (1998) notes that sustainability development is about effective integration of social, economic and ecological considerations at all scales from local to global which should be over a long period. In view of this, there is need for integration of all stakeholders over a long term. It therefore goes without say that information needs to be shared in order to cement the integration of stakeholders.

Rosenau (2003) notes that the differences between localism and globalism comes about when each group of stakeholders have different mindsets and different logical actions. In order to synchronize mindsets and bring about the same logical mindsets there is need for a context specific elaboration on the requirements and rules for sustainable development. Kemp et al. (2005) recommends transparency and public engagement as key to decision making for sustainability since sustainability involves the citizenly thus a need for openness and participation in order to build understanding and commitment.

As noted by Bossel (1999), the human social system together with its component systems like resource and environment system on which they depend, are complex dynamic systems. In this regard, they require comprehensive sets of indicators to provide essential information about on how best they can be utilised to improve the livelihoods of mankind. In order to understand the developments, the state of the individual systems together with their position with respect to individual and societal goals require to be understood. Bossel (1999) therefore concludes that all systems depend on subsystems implying that sustainabilitymust have two separate aspects: the sussytem sustainability and the subsystem's contribution to the performance of the total system. These relations that exists between all the subsystems needs to be understoodand indentified in a given area if sustainability is to be addressed. This can only be achieved if information is shared between all the stakeholders in a given ecosystem.

Prescott-Allen (1997) has developed a barometer of sustainability to help in the simultaneous evaluation of both the environmental and social components of sustainable development.The barometer has been described by a two dimensional graph. The graph plots the states of ecosystem well-being and human well-being on relative scales from 0 to 100 where 0 indicates bad condition and 100 indicates good conditions.An indication of sustainability (or un-sustainability) is determined by the location of the point defined by the two values gives. In an application for Manitoba, Canada, Ecosystem well-being is computed by aggregating six indicators while human well-being uses 28 indicators (Manitoba Environment, 1997). The United Nations (DPCSD, 1996) has criticized the extensive lists of indicators that:

- (a) they are derived *ad hoc* without a system theoretical framework to reflect the operation and sustainability of the total system,
- (b) they always reflect the specific expertise and research interests of their authors,
- (c) they are overly dense in some areas (multiple indicators for essentially the same concern), and sparse or even empty in other important areas.

This is an indication that the aggregate indicators are not a systematic and complete reflection of the total system. In other words the criticism indicates that the aggregate indicators do not exactly demonstrate how human society interacts with its natural environment but the thinking of the specific authors. In this regard, there is a need to involve all stakeholders when it comes to issues to do with sustainability thus the importance of sharing information.

In an attempt to be more systematic, OECD (1993) introduced the PSR (pressure, state response) and PSIR (pressure, state, impact, response) frameworks. The approach identifies isolated chains of cause and effect for a particular environmental problem in order to monitor corresponding indicators. Theframeworks developed by OECD (1993) have been widely applied to solve sustainable development problems (Swart and Bakkes, 1995). Meadows (1998) came up with a criticism of the frameworks by arguing that the neglect the systematic and dynamic nature of the processes together with their embeddingeffects in a larger total system containing many feedback loops. According to Meadows (1998) there presentation of impact chains by isolated PSIR-chains will usually not be permissible, and will often not even be anadequate approximation. He argues that the impact in one causal chain can be pressures and in another can be states, and vice versa implying that multiple pressures and impacts are not considered. This implies that the real, usually nonlinear relationships between the different components of a chain cannot be accounted for. Meadows therefore concludes that states, and rates of change (stocks and flows) are treated inconsistently.

Robert et al. (1997) recommends development of a sustainability model based on scientifically acceptable conception of the world and scientifically supportable definition of sustainability. For a sustainability model to be effective, they propose that it should be applicable at different scales, require individual not to act against self interest, be simple to disseminate, must not engender unnecessary resistance, able to get started without first requiring large scale societal changes and being used as a starting point for developing 'new economics'. For the above requirements to be met, there is need to stakeholder collaboration.

According to the stakeholder theory corporations have duties to its stakeholders who can be internal (stockholders, employees and management) or external (customers, suppliers, stockholders, banks,

environmentalists, governments and other groups). Stakeholders can also be divided into primary (direct influence) and secondary groupings (not influenced directly) as per Lindfelt (2002). Under the stakeholder theory, the corporation's fundamental obligation is to ensure its survival and thrive by benefiting and balancing the needs of multiple stakeholders, instead of purelymaximizing its financial success (Kaku, 2003). Cespedes-Lorente et al. (2004) proposes four stream of research within stakeholder theory that touch on the natural environment these are:

- (a) the role of external stakeholders in assessing environmental performance and corporate environmental risks;
- (b) the importance of pressure on environmental reporting practices and communication;
- (c) the influence of stakeholders on environmental strategy of firms; and
- (d) the development of environmental cooperation between the firm and stakeholders.

The forgoing informs this study which postulates thatinformation sharing is important for the achievement of sustainable development.

3. Study methodology

Aquestionnaire which was the main instrument used to collect data was administered to individual respondents. It was was administered to two hundred respondents who were purposively chosen to represent senior management, middle level management and other employees in the sampled businesses as follows: farming community - ninety seven (97) respondents, fisheries – forty eight (48) respondents and the hotel industry - fifty six (56) respondents. The respondents were asked to state if they agree or disagree that voluntary business action, stakeholder collaboration and government regulations will have the greatest influence on sustainable development. The responses were rated on a five-point Likert scale where,

- 1 = strongly agree,
- 2 = agree,
- 3= undecided
- 4 = disagree and
- 5 = strongly disagree.

Other instruments used included checklists and focus groups. The checklist was used to identify the main businesses that operate in the Lake Naivasha wetland. The questionnaire and focus groups were used to establish the stakeholders that may influence the strategic thinking of most of the businesses operating in the area. Purposive random sampling was used to determine the sample size from the population of interest (flower farms, fishermen and hoteliers). Descriptive survey research design was used in order to pick behaviours thatwould influence business strategic thinking.

4. Results and discussions

The data collected was analyzed using both pie charts and bar charts as shown in Figures 1 and 2.

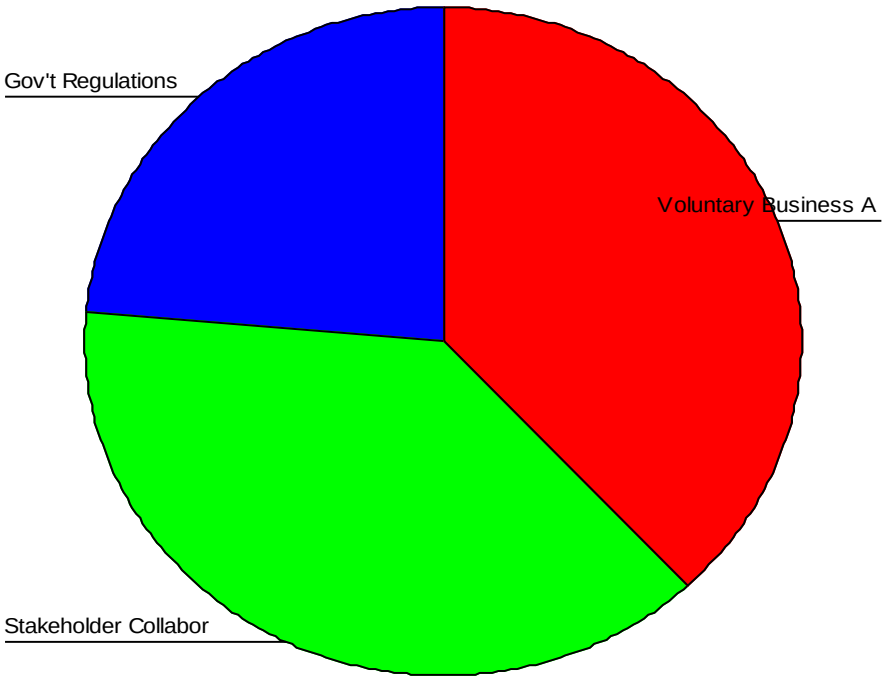

Figure 1. Summary of responses (Source: Author, 2014)

Figure 1 indicated that most of the respondents thought that stakeholder collaboration will influence sustainable development.

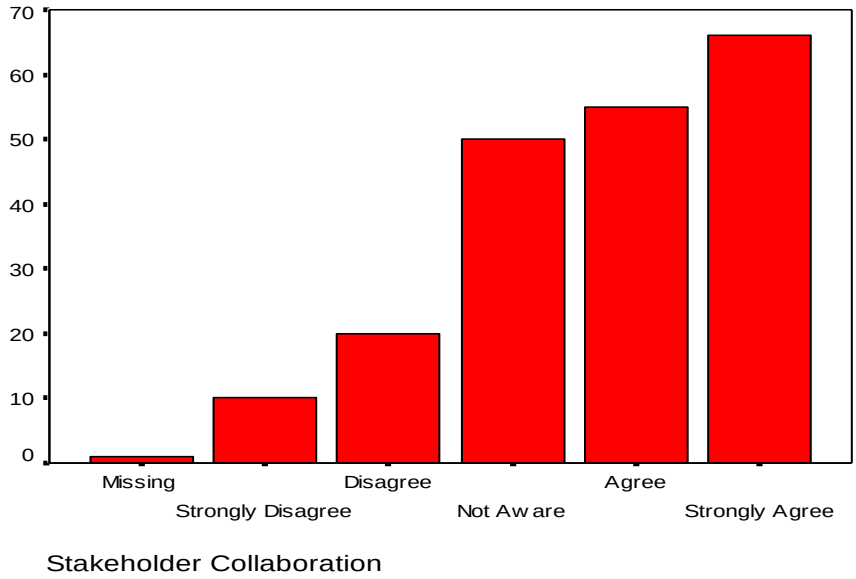

Figure 2. Detailed response on Stakeholder Collaboration (Source: Author, 2014)

Figure 2 shows that most of the respondents strongly agreed that stakeholder collaboration would influence sustainable development.

5. Conclusions and recommendations

The Bellagio Principles – Guidelines for practical assessment of progress towards sustainable development (Hard and Zdan, 1997) demands that there should be a guiding vision and goals, should have a holistic perspective, essential elements need to be identified, must have adequate scope, should have a practical focus, needs openness, effective communication, broad participation, assessment should be ongoing and there should be institutional capacity. Bossel (1998) states that in order to assess sustainable development of a system there are six essential subsystems that must be identified. The six essential subsystems are individual development; social system; government; infrastructure; economic system and resources and environment. In order for the total system to be viable each of these subsystems must be viable. This is to say that the viability of the total system depends on the proper functioning of the identified sub-systems.

The study recommends that development and sustainability be merged into a set of goals for sustainable development by involving all the stakeholders but according to the principle that the 'broadest shoulders bear the heaviest loads. In other words, common but differentiated responsibilities be allocated with the business community taking the lead. In this regard, information must be shared with all the stakeholders so that efforts are properly coordinated in order to achieve sustainable development. The goals for sustainable development need to be set in key resource areas such as water, fisheries, forestry, biodiversity, energy, agriculture and food security. It is essential to recognize the right of individuals and communities in managing their own natural resources including their right to access natural resources within the capacities of the ecosystem. Lastly, there is need to integrate the right to participation with access to information and available mechanisms and frameworks for in order to achieve a meaningful citizen – and civil society inclusion. This should include the acknowledgment of education which should be addressed as a human right.

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