

## Assessment of local communities' awareness of biodiversity within and around Wazo Hill Quarry

### 1. Contestant profile

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### 2. Project overview

Title:	Assessment of local communities' awareness of biodiversity within and around Wazo Hill Quarry
Contest:	
Quarry name:	Wazo Hill Quarry
Prize category: (select all appropriate)	<input checked="" type="checkbox"/> Education and Raising Awareness <input type="checkbox"/> Habitat and Species Research <input type="checkbox"/> Biodiversity Management <input type="checkbox"/> Student Project <input type="checkbox"/> Beyond Quarry Borders

## Abstract

Biodiversity is an inherently international agenda mainstreamed as a serious global concern given attention locally, nationally, and internationally. This concern is based on the critical role biodiversity plays in providing essentials for our survival and wellbeing and so the fact that much of human well-being depends on biodiversity (Collins, 2013; Homewood et al., 2012). A lack of awareness means less public support in biodiversity conservation and sustainable use of biodiversity, poor participation in conservation, and eventually little readiness in addressing the various challenges of biodiversity conservation (Collins, 2013; Sanoff, 2000). This research aimed to assess awareness of local communities of biodiversity within and around Wazo Hill Quarry, Tanzania.

Both qualitative and quantitative data collection techniques were used. More specifically, household survey, key informant interviews, and consultative meetings were conducted. Data was collected from three villages - Chasimba and Basihaya on the rehabilitated zone and Chachui on the extraction zone around Wazo Hill Quarry.

The findings show that overall local communities are aware of biodiversity within and around Wazo Hill Quarry. They have general knowledge about biodiversity and appreciate the critical role biodiversity plays in providing essentials for our survival and wellbeing. They acknowledge the conservation efforts Twiga Cement Company is making towards biodiversity conservation within and around Wazo Hill Quarry. In addition, there was a general consensus that their relationship with the company has improved these days than before as the company increases its engagement with local communities.

The results of this research present important implications to the management of Wazo Hill Quarry that could improve and sustain conservation efforts and biodiversity restoration programmes by Twiga Cement Company. The results can be used to design education and awareness raising programmes for the local communities in order to increase their level of participation in biodiversity conservation in and around Wazo Hill Quarry. They can also be used to design sensitization programmes to reduce negative perception toward biodiversity restoration programmes and mining activities of the company among communities around the quarry.

The positive relationships the company has so far created with neighbouring communities could also be a stepping stone toward forging linkages that could build strong connections with communities while ensuring their involvement, readiness and participation in biodiversity conservation and sustainability of the company's business.

## Introduction

Biodiversity is an inherently international agenda mainstreamed as a serious global concern given attention locally, nationally, and internationally. This concern is based on the critical role biodiversity plays in providing essentials for our survival and wellbeing and so the fact that much of human well-being depends on biodiversity (Collins, 2013; Homewood et al., 2012). Throughout the world biodiversity conservation (ensuring that biodiversity is maintained, and that species, populations, genes, and the complex interactions between them, persist into the future) has become an important agenda, with recognition and support of the governments, international organizations, experts, and other key players across a range of sectors (Hoban & Vernesi, 2012). Biodiversity conservation remains one of the important human endeavors on the planet, given the need to maintain biodiversity and provision of ecosystem goods and services, which make up the foundation for human well-being (Chape et al., 2008). Biodiversity conservation continues to be an important stream in local, national, and international discussions as the international community strives to accelerate its efforts to achieve the Millennium Development Goals (<http://www.cbd.int/ldb/>).

There are, however, several challenges of biodiversity conservation. These include the mounting problems of: conflicts with various social actors often reflected in tension with conservation management officials; human population increase - reflected in the increasing harvest of natural resources; development expansion – reflected in the expansion of extractive industries which create growing demand on natural resources; climate change - reflected in biodiversity loss and changes in ecosystem services; emerging wildlife diseases such as bird flu; and other human and environmental factors often reflected in pollution and land degradation (Hoban & Vernesi, 2012; <http://www.wcs.org/conservation-challenges.aspx>; Neumann, 2002; Warner, 2000).

Other challenges facing biodiversity conservation include the daunting task of working in areas of low income, education, and/or political and community stability, and where exploitation of resources and land is desired by local and international players. Furthermore, conservation actions or interventions (such as the establishment of PAs) are affected by, address and sometimes contribute to conflicts through clashing with local interests. This has created resentment and mistrust by various actors including local communities (Hoban & Vernesi, 2012; Hammill & Brown, 2006). These challenges together complicate the conservation of biodiversity since they put greater pressure on biodiversity that shrinks the resource base and create conservation conflicts with various social actors that eventually hinder the attainment of both conservation and human development (Warner, 2000; <http://www.wcs.org/conservation-challenges.aspx>).

One approach of addressing such challenges is through stakeholders' involvement and participation in biodiversity conservation (Niezgoda & Czernek, 2008; Lewis, 1996; Walpole & Goodwin, 2001). The inclusion of local communities is crucial for the sustainability of biodiversity conservation (Sanoff, 2000). However, to be able to conserve biodiversity one needs to understand it. A lack of awareness means less public support in biodiversity conservation and sustainable use of biodiversity, poor participation in conservation, and eventually little readiness in addressing the various challenges of biodiversity conservation (Collins, 2013; Sanoff, 2000). It is through this line of thinking that we thought to assess awareness of local communities of biodiversity within and around Wazo Hill Quarry.

Wazo Hill Quarry is located on the biodiversity rich areas along the coast of Indian Ocean. Mining activities in the quarry area disturbs habitats and leads to biodiversity loss. However, the mining company has been committed to restore its mining areas after phasing out mining activities. Restoration programmes have been in place since 2010 with the aim of restoring the disturbed ecosystem due to mines. Although restoration programs have been involving scientists and to some extent local communities, passion and level of community's participation have been low (Adégbidi et al., 2010). This tendency raises questions regarding local community's awareness of biodiversity due to the fact that community awareness and appreciation of the natural environment ultimately dictates the success of biodiversity restoration activities (Adégbidi et al., 2010).

## 1.2 Research Objectives

Our research project was guided by the following objectives:

### 1.2.1 General objective

To assess local communities' awareness of biodiversity within and around Wazo Hill Quarry.

### 1.2.2 Specific objectives

1. To examine communities' knowledge of biodiversity (plants and animals) within and around the Wazo Hill quarry
2. To assess local communities attitude towards the effects of mining activities on the biodiversity at Wazo Hill quarry
3. To assess community attitude towards biodiversity restoration programmes at Wazo Hill quarry

## 2.0 Methodology

### 2.1 Study site

Wazo Hill Quarry is located at Tegeta, Dar es Salaam approximately 25 km from the city Centre. The quarry is located between latitude 6 34' south and longitudes 39 24' east with an elevation of about 200 m above sea level (Kabede & Nicholls, 2011). The Quarry landscape looks barren with a heap of topsoil deposited along the edges of the mined blocks. It has undisturbed site located on the northern side dominated by coastal bushes.

### 2.2 Data collection



Enumerators at Cha Simba area; 7<sup>th</sup> May, 2016



Consultative meeting at Wazo Ward; 5<sup>th</sup> July, 2016



Household survey at Cha Simba; 7<sup>th</sup>, May 2016



Rehabilitated area at the Wazo Hill Quarry 5<sup>th</sup> May, 2016

**Photos by** Mangi, H.

Researchers used both qualitative and quantitative data collection techniques. Specifically, household survey, key informant interviews, and consultative meetings were conducted.

The process of data collection started with the development of research tools (questionnaires and interview guides) that consisted of closed and open ended questions. We then visited the Quarry site for preparatory meeting before heading to the villages for data collection. In the planning phase, we intended to collect information from three sites based on the Quarry land use plan; the rehabilitated sites, the extraction sites, and preserved sites (to be extracted later). However, upon moving to the third site (untouched sites/reserved sites) we realized that community members know almost nothing about Wazo Hill Quarry and its activities. We therefore agreed to re-adjust our approach and focused on the two sites; the rehabilitated and extraction sites.

There were two villages (Chasimba and Basihaya) on the rehabilitated zone and one (Chachui) on the extraction zone. We collected our data to community members living in two villages/hamlets – Chasimba and Basihaya (rehabilitated sites) and Chachui (extraction site). Respondents were chosen randomly to ensure representation of the village population, and were stratified according to habitat categories i.e. undisturbed, rehabilitated and abandoned sites. From each strata, simple random sampling was used to obtain respondents. All questionnaire surveys were administered face to face to assess communities' knowledge of biodiversity, values attached to, and attitude/perception towards biodiversity restoration activities in and around Wazo Hill area. A total of 30 face to face household surveys were conducted during a two day period of survey fieldwork.

We held three consultative meetings with representatives from Chasimba, Basihaya and Chachui villages, and another consultative meeting was held with the quarry senior personnel. These meetings provided an opportunity to understand collective meaning and values attached to biodiversity by community members.

Field observations were also conducted where by researchers noted on their observation sheets issues related to biodiversity and communities. Some of the observed issues included presence or absence of animals on the rehabilitated sites, environmental conditions of the extraction sites, visible associated impacts of mining to the environment, potential threats to biodiversity, etc. Observation helped researchers to corroborate some of the information provided by communities and quarry personnel during interviews and consultative meetings. Observation also helped to seek more clarification on a particular issue.

A number of relevant documents, including study reports were collected and reviewed. Specifically, documents pertaining to community awareness of biodiversity (wildlife, land, forest resources, water etc.) and conservation both in the study area and elsewhere were collected and analysed.

### **2.3 Data analysis**

Content analysis was used to sort out qualitative information and organize into relevant topic and themes. Interpretation of themes was carried out to analyze pattern and relationships among themes generated to provide meaningful information.

Quantitative data (especially that from the household survey) was analyzed using SPSS for descriptive statistics, given the number of sample size. Mean, frequency, bar charts and standard deviation were extracted from the SPSS output after running the necessary analysis.

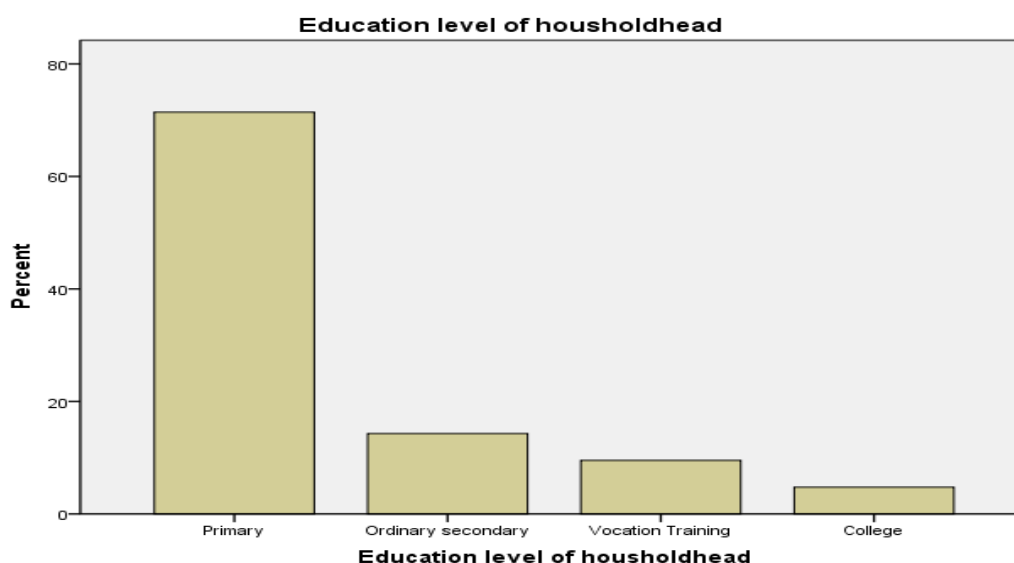
## **3.0 Results and Discussion**

Table 1 below lists the characteristics of the members of the local community around Wazo Hill Quarry who responded to the household survey. The study population comprised a total of 30 respondents from households in three villages. Of these respondents, 9 were from Chachui, 15 Chasimba and 6 Basihaya. However, all respondents were males except one (Table 1).

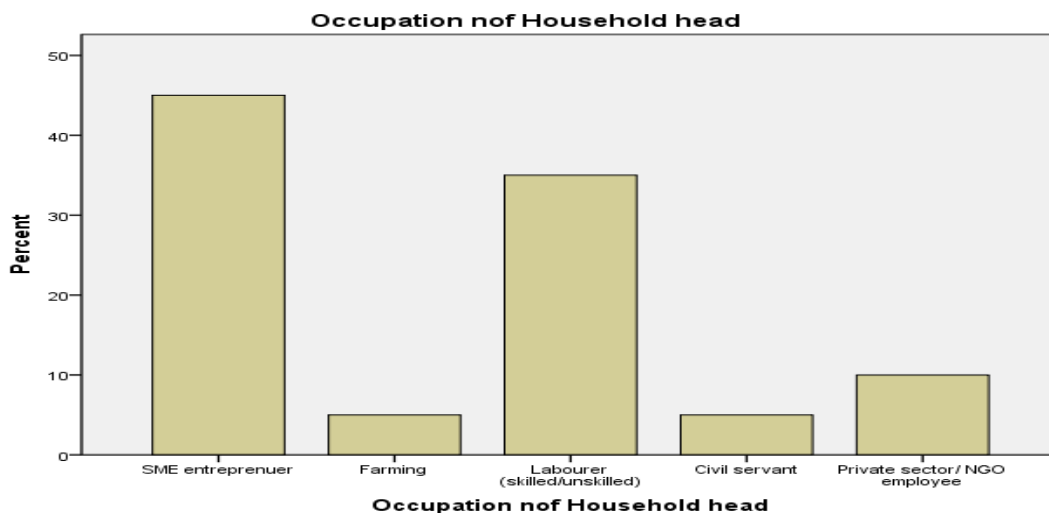
Table 1: Respondent's characteristics

		Sex of household head		Total
		Female	Male	
Village Name	Cha chui	7	2	9
	Cha simba	12	3	15
	Basihaya	5	1	6
<b>Total</b>		<b>24</b>	<b>6</b>	<b>30</b>

Interestingly, none of respondents had no formal education. As a whole, almost 75% of respondents had a primary school education, 15% had a secondary school education, 10% had vocational training, and a very small percentage of respondents, 5%, had a college or university education. It is, however, clear that a large majority of respondents had a low level of education in a formal sense, which could impact on their level of awareness of biodiversity (Figure 1).



Of all the respondents, nearly 45% were small-scale entrepreneurs doing small-scale business activities, 5% peasants or small-scale farmers and another 5% were civil servants. There were almost 37% labourers - skilled or unskilled mainly working for the Wazo Hill company while 10% were employed full-time in the formal sector, particularly as private sector/NGO employees (Figure 2).



### Local communities' knowledge of biodiversity

Overall responses on local communities' knowledge about biodiversity spread between 'I know and 'I've heard about biodiversity' (Table 2), which implies that local communities in the study area had general knowledge about biodiversity. About 73% of respondents heard about biodiversity and the remaining 27% claimed that they never heard about biodiversity. In addition, about 47% of respondent were able to describe biodiversity, were as 53% did not answer the question (Table 3). On testing about access to biodiversity education and sensitization with regards to biodiversity issues and management, about 37% of respondents claimed that they have never been sensitized about biodiversity conservation; 60% said they learned from school and newspapers, the rest from other sources. About 3% said they were sensitized by Twiga Cement Officials (Table 4).

Table 2: Respondents knowledge of biodiversity

		I've heard about it and know what it mean	I've heard about it but do not know what it mean	I've never heard about it	Total
Cha chui	Frequency	3	3	3	9
	Percentage	10%	10%	10%	30%
Cha simba	Frequency	5	5	5	15
	Percentage	17%	17%	17%	50%
Basihaya	Frequency	3	3	0	6
	Percentage	10%	10%	0%	20%
<b>Total</b>		<b>11</b>	<b>11</b>	<b>8</b>	<b>30</b>
		<b>Percentage</b>	<b>36.7%</b>	<b>36.7%</b>	<b>27%</b>
					<b>100%</b>

Table 3: Respondents description of biodiversity

		Diversity of species - flora and/or fauna	Diversity of ecosystems and habitats	All of the above	No response	Total
Cha chui	Frequency	2	0	0	7	10
	Percentage	7%	0%	0%	23%	30%
Cha simba	Frequency	3	1	2	9	15
	Percentage	10%	0%	7%	30%	50%
Basihaya	Frequency	3	1	2	0	6
	Percentage	10%	3%	7%	0%	20%
<b>Total</b>		<b>8</b>	<b>2</b>	<b>4</b>	<b>16</b>	<b>30</b>
		<b>Frequency</b>				

**Percentage                      27%                      7%                      13%                      53%                      | 100%**

Table 4: Respondents access to education and sensitization on biodiversity issues

		Central government	Regional/Local government	Conservation Stakeholder and Companies such as Twiga Cement	learned at school or university	None	Media (Television, the radio, newspaper)	National gvt, region/local gvt & teacher at school, university	Total
Chachui	Frequency	0	0	0	0	8	1	0	<b>9</b>
	Percentage	0%	0%	0%	0%	27%	3%	0%	<b>30%</b>
Chasimba	Frequency	2	3	1	1	3	3	2	<b>50%</b>
	Percentage	7%	10%	3%	3%	10%	10%	7%	<b>50%</b>
Basihaya	Frequency	1	0	0	3	0	0	2	<b>6</b>
	Percentage	3%	0%	0%	10%	0%	0%	7%	<b>20%</b>
<b>Total</b>	<b>Frequency</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>11</b>	<b>4</b>	<b>4</b>	<b>30</b>
	<b>Percentage</b>	<b>10%</b>	<b>10%</b>	<b>3%</b>	<b>13%</b>	<b>37%</b>	<b>13%</b>	<b>13%</b>	<b>100%</b>

Broadly similar opinions (about general knowledge on biodiversity, its description and access to education and sensitization on biodiversity issues) were noted during interviews and consultative meetings with community leaders. They acknowledge the conservation efforts the company is making towards biodiversity conservation within and around Wazo Hill Quarry. These results suggest that local communities understand and appreciate the critical role biodiversity plays in providing essentials for our survival and wellbeing.

In addition, there was a general consensus that their relationship with the company has improved these days than before as the company increases its engagement with local communities. “The situation was worse before and now it’s much better. The company has positive contribution to surrounding communities and collaboration in many issues is higher than before. For example, the company has organized a seminar with us tomorrow (the day after our consultative meeting), so we will be there with them (Wazo Hill company management) discussing various issues of our interest and that of the company. We are happy for the current situation with the company, we are ready to cooperate more and more”. One community leader narrated during consultative meeting.

Community leaders also had the feeling that sometimes the company bypasses them and go straight to deal with community members. But the outcomes have been so frustrating. One community leader for example pointed out that “Twiga Company should not bypass us when it comes to resolving problems with communities and the company. For instance, they had been struggling with gravel miners along their boundaries for long time but when they decide to invite us to speak to the community, we were able to talk to people and now there is now one mining gravels in those areas. Communities are now watchers of one another”.

#### **Local communities’ attitude towards the effects of mining activities on the biodiversity**

The results further indicate that all respondents who participated in this research generally agreed that their landscape is degraded at certain degrees by mining activities. Their responses spread between ‘highly degraded and ‘moderate degraded’ (Table 5). About 37% said the landscape is highly degraded, 40% said it is degraded were as 23% said it is moderately degraded. When asked if they are aware about biodiversity loss associated with landscape degradation, 73.3% responded that they are aware, 10% said they are not aware and 16.7% preferred not to respond on the question (Table 6).

Regarding communities’ views on the impact of quarry activities on the biodiversity the findings indicate that many people (70% respondents) said they destructs habitats, 13% said it leads to decline of plants and animal species and 17% had no response (Table 7). Interestingly 70% of interviewed respondents agreed that there is need to conserve biodiversity in the areas, while 13 % said they don’t see the need to conserve biodiversity in urban settlements like theirs, and the remaining 17% did not want to respond to the question (Table 8).

Table 5 Expression best describe the condition of the landscape

		Highly degraded	Degraded	Moderate degraded	Total
Chachui	Frequency	3	4	2	9
	Percentage	10%	13%	7%	30%
Chasimba	Frequency	7	4	4	15
	Percentage	23%	13%	13%	50%
Basihaya	Frequency	1	4	1	6
	Percentage	3%	13%	3%	20%
<b>Total</b>	<b>Frequency</b>	<b>11</b>	<b>12</b>	<b>7</b>	<b>30</b>
	<b>Percentage</b>	<b>37%</b>	<b>40%</b>	<b>23%</b>	<b>100%</b>

Table 6: Respondents awareness about loss of biodiversity

		I am very much aware	I am aware	I am not aware	I better not respond	Total
Cha chui	Frequency	2	5	0	2	9
	Percentage	7%	17%	0%	7%	30%
Cha simba	Frequency	2	9	2	2	15
	Percentage	7%	30%	7%	7%	50%
Basihaya	Frequency	0	4	1	1	6
	Percentage	0%	13%	3%	3%	20%
<b>Total</b>	<b>Frequency</b>	<b>4</b>	<b>18</b>	<b>3</b>	<b>5</b>	<b>30</b>
	<b>Percentage</b>	<b>13.3%</b>	<b>60.0%</b>	<b>10%</b>	<b>16.7%</b>	<b>100%</b>

Table 7: Observed impacts of quarry activities on biodiversity

		Destruction of habitat/environment	Decline of plants and animal species	No response	Total
Cha chui	Frequency	7	1	1	9
	Percentage	23.3%	3.3%	3.3%	30%
Cha simba	Frequency	13	2	0	15
	Percentage	43%	7%	0%	50%
Basihaya	Frequency	2	1	3	6
	Percentage	7%	3%	10%	20%
<b>Total</b>	<b>Frequency</b>	<b>22</b>	<b>4</b>	<b>4</b>	<b>30</b>
	<b>Percentage</b>	<b>73.3%</b>	<b>13.3%</b>	<b>13.3%</b>	<b>100%</b>

Table 8: Respondents perception on conservation of Biodiversity

		I Strongly Disagree that conservation should be conserved	Agree that biodiversity should be conserved	Strongly agree that biodiversity should be conserved	No response	Total
Chachui	Frequency	2	5	0	2	9
	Percentage	7%	17%	0%	7%	30%
Chasimba	Frequency	1	2	9	3	15
	Percentage	3%	7%	30%	10%	57%
Basihaya	Frequency	1	2	3	0	6
	Percentage	3%	7%	10%	0%	20%
<b>Total</b>	<b>Frequency</b>	<b>4</b>	<b>9</b>	<b>12</b>	<b>5</b>	<b>30</b>
	<b>Percentage</b>	<b>13%</b>	<b>30%</b>	<b>40%</b>	<b>17%</b>	<b>100%</b>



Livestock's grazing at Chasimba area, May 7<sup>th</sup>, 2016 Gravel mining at Chasimba area, May 7<sup>th</sup>, 2016. Photos by Mangi, H.

### Local communities' attitude towards biodiversity restoration programmes

Regarding communities' perception toward biodiversity restoration programmes conducted by Twiga Cement Company, the findings show that 10% of respondents strongly agree that Twiga Cement Company restores biodiversity after phasing out restoration activities, 27% agrees, 43% are neutral and 20% do not agree (Table 9). While those on community involvement in such restoration programmes indicated that 10 strongly agreed that they are being involved, 27 agrees, 40% disagree, 3% strongly disagree and about 20% were neutral (Table 10). On testing communities appreciation of the restored biodiversity at the Wazo Hill Quarry, about 20% strongly agreed that restored area resembles the situation before extraction, 13% agreed, 17% were neutral and 50% strongly disagreed arguing that quarry activities destroys natural environment and restoration never takes back what was there before extraction (Table 11). Generally 33% agreed that restoration programs performed by Twiga Company are better for biodiversity restoration and conservation.

Table 9: Respondent attitudes with respect to restore biodiversity implemented by the Twiga Cement Company

		I strongly agree that Twiga Cement restores biodiversity after extraction	I agree that Twiga Cement restores biodiversity after extraction	Neutral	I do not agree that Twiga Cement restores biodiversity after extraction	I strongly do not agree that Twiga Cement restores biodiversity after extraction	Total
Cha chui	Frequency	0	3	3	3	0	9
	Percentage	0%	10%	17%	10%	0%	30%
Chasimba	Frequency	1	4	7	3	0	15
	Percentage	3%	13%	23%	10%	0%	50%
Basihaya	Frequency	2	1	3	0	0	6
	Percentage	7%	0%	10%	0%	0%	20%
<b>Total</b>	<b>Frequency</b>	<b>3</b>	<b>8</b>	<b>13</b>	<b>6</b>	<b>0</b>	<b>30</b>
	<b>Percentage</b>	<b>10%</b>	<b>27%</b>	<b>43%</b>	<b>20%</b>	<b>0%</b>	<b>100%</b>

Table 10. Perception on their involvement of quarry activities

Community are involved in biodiversity rehabilitation activities being conducted by Twiga Cement Company

		Strongly agree	Agree	Neutral	Strongly Disagree	Disagree	Total
Cha chui	Frequency	0	2	2	1	4	9
	Percentage	0%	10%	10%	3%	13%	30%
Cha simba	Frequency	2	4	4	0	5	15
	Percentage	7%	17%	10%	0%	17%	50%
Basihaya	Frequency	1	2	0	0	3	6
	Percentage	3%	7%	0%	0%	10%	20%
<b>Total</b>	<b>Frequency</b>	<b>3</b>	<b>8</b>	<b>6</b>	<b>1</b>	<b>12</b>	<b>30</b>

Percentage	10%	27%	20%	3%	40%	100%
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Table 11 Community appreciation of quarry restoration activities

Restored sections of the Quarry resembles what was there before extraction							
		Strongly agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Cha chui	Frequency	2	0	2	0	5	9
	Percentage	7%	0%	7%	0%	17%	30%
Cha simba	Frequency	4	3	2	0	6	15
	Percentage	13%	10%	7%	0%	20%	50%
Basihaya	Frequency	0	1	1	0	4	6
	Percentage	0%	3%	3%	0%	13%	20%
<b>Total</b>	<b>Frequency</b>	<b>6</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>15</b>	<b>30</b>
	<b>Percentage</b>	<b>20%</b>	<b>13%</b>	<b>17%</b>	<b>0%</b>	<b>50%</b>	<b>100%</b>

In addition, demand for biodiversity resources such firewood, grazing and building materials and Wild food is on the increase in the Wazo Hill area. There are many concerns of community's illegally entering Wazo Hill Quarry area to collect firewood, grazing and other things. These tendencies have been causing endless friction between the Quarry management authority and the community hence threatening their relationship. In addition this situation is threatening the safety of the Quarry and the company at large and the overall sustainability of biodiversity conservation in and around the quarry area.

## Conclusion and Recommendation

Evidence from this research demonstrates a number of important implications to the management of Wazo Hill Quarry that could improve and sustain conservation efforts and biodiversity restoration programmes by Twiga Cement Company.

Overall, the findings build an impression that the study sample population is aware of biodiversity within and around Wazo Hill Quarry. Community awareness of biodiversity in and around Wazo Hill area is fairly high. People have some knowledge about biodiversity and appreciate conservation efforts by the company. In addition, the study community is aware of issues related to biodiversity loss such as landscape degradation through various social economic activities including quarry mining activities. However, motivation and sensitization of local communities to participate in conservation activities is still low despite the current strategy by the company to engage third parties (Jane Goodall and MVIKIUTA) to work for community outreach activities.

The company could consider at least to have someone stationed for community outreach activities. Currently, it appears that there is loose connection between the company and local communities. As researchers, we had the feeling that the company has weak Cooperate Social Responsibility (CSR) or if not, then it does not strongly work with adjacent communities. In this situation it is not surprising that there is less support and participation of the public in biodiversity conservation.

Although a significant segment of the community is positive about restoration activities being undertaken by the Twiga Company, majority still need to be sensitized and educated about the importance of restoration activities currently undertaken. Involvement of community to restoration activities could boost their motivation and keep them aware of the activities conducted by the quarry. The results of this research can be used to design education and awareness raising programmes for the local communities so as to increase their level of participation in biodiversity conservation in and around Wazo Hill Quarry. They can also be used to design

sensitization programmes to reduce negative perception toward biodiversity restoration programmes and mining activities of the company among communities around the quarry.

The positive relationships the company has so far created with neighbouring communities could also be a stepping stone toward forging linkages that could build strong connections with communities while ensuring their involvement, readiness and participation in biodiversity conservation and sustainability of the company's business.

**To be kept and filled in at the end of your report**

<p><b>Project tags (select all appropriate):</b></p> <p>This will be used to classify your project in the project archive (that is also available online)</p>	
<p><b>Project focus:</b></p> <p><input checked="" type="checkbox"/> Biodiversity management</p> <p><input type="checkbox"/> Cooperation programmes</p> <p><input type="checkbox"/> Education and Raising awareness</p> <p><input type="checkbox"/> Endangered and protected species</p> <p><input type="checkbox"/> Invasive species</p> <p><input type="checkbox"/> Landscape management - rehabilitation</p> <p><input type="checkbox"/> Rehabilitation</p> <p><input type="checkbox"/> Scientific research</p> <p><input type="checkbox"/> Soil management</p> <p><input checked="" type="checkbox"/> Urban ecology</p> <p><input type="checkbox"/> Water management</p> <p><b>Flora:</b></p> <p><input type="checkbox"/> Conifers and cycads</p> <p><input type="checkbox"/> Ferns</p> <p><input type="checkbox"/> Flowering plants</p> <p><input type="checkbox"/> Fungi</p> <p><input type="checkbox"/> Mosses and liverworts</p> <p><b>Fauna:</b></p> <p><input type="checkbox"/> Amphibians</p> <p><input type="checkbox"/> Birds</p> <p><input type="checkbox"/> Dragonflies &amp; Butterflies</p> <p><input type="checkbox"/> Fish</p> <p><input type="checkbox"/> Mammals</p> <p><input type="checkbox"/> Reptiles</p> <p><input type="checkbox"/> Spiders</p> <p><input type="checkbox"/> Other insects</p> <p><input type="checkbox"/> Other species</p>	<p><b>Habitat:</b></p> <p><input type="checkbox"/> Cave</p> <p><input type="checkbox"/> Cliffs</p> <p><input type="checkbox"/> Fields - crops/culture</p> <p><input type="checkbox"/> Forest</p> <p><input type="checkbox"/> Grassland</p> <p><input checked="" type="checkbox"/> Human settlement</p> <p><input type="checkbox"/> Open areas of rocky grounds</p> <p><input type="checkbox"/> Recreational areas</p> <p><input type="checkbox"/> Scree</p> <p><input type="checkbox"/> Shrubs &amp; groves</p> <p><input type="checkbox"/> Soil</p> <p><input type="checkbox"/> Wander biotopes</p> <p><input type="checkbox"/> Water bodies (flowing, standing)</p> <p><input type="checkbox"/> Wetland</p> <p><b>Stakeholders:</b></p> <p><input type="checkbox"/> Authorities</p> <p><input checked="" type="checkbox"/> Local community</p> <p><input type="checkbox"/> NGOs</p> <p><input type="checkbox"/> Schools</p> <p><input type="checkbox"/> Universities</p>