

An assessment of the role of environmental organisations in addressing sustainability in Grahamstown, Eastern Cape, South Africa.

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Environmental organisations and institutions play vital roles in ensuring environmental management practices and the solving of environmental issues. Thus, it is important that such organisations and institutions be included when compiling a state of the environment report. This study aimed to create an audit of the environmental organisations and institutions that are currently operating in Grahamstown, Eastern Cape, South Africa, and to make reference to their role in environmental management. The study also aimed to determine the role of public participation in environmental management and to assess the level of public knowledge of environmental issues in Grahamstown. With the use of simple questionnaires, 150 public surveys were conducted, and identified organisations were interviewed. Results showed that the public are viewed as a key component of environmental management by the organisation and institutions, although there is little public knowledge of environmental management in Grahamstown.

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Introduction

The purpose of a State of the Environment Report (SoER) is to transform data into comprehensible information and to communicate it to stakeholders (DEAT, 2004). The type of data that can be included and collected for such a report can vary depending on the area for which the report is being done, however generally the data concerns environmental issues (DEAT, 2004). Examples of data that can be included in a SoER are related to environmental conditions, natural events, human responses to environmental change, information concerning natural resources stocks as well as emissions for the area in which the report is being done (DEAT, 2004). Some of the more specific issues that are addressed in a SoER include land cover, demographics, economic issues, infrastructure, hydrology, climatology, topography, as well as air and water quality (Pretorius *et al.*, 2002: 1). The collection of this data increases awareness and supports effective decision and policy-making (DEAT, 2004). SoERs focus on causes and consequences of what is happening in the environment as well as implications, opportunities and constraints to what can be done to ensure sustainability (DEAT, 2004). SoER indicators are important to consider revealing conditions and temporal variability. Indicators can be used to identify whether policy goals and targets are being achieved (DEAT, 2004).

Environmental organisations and institutions play vital roles in environmental management, advocating sustainable development and in solving environmental problems and it is thus important to include them in the SoER.

The nature of organisations

Environmental groups play an important part in the monitoring of the environment which contributes to solving key environmental issues (Ruastiala, 1997: 720). Their focus and concerns are related to the scale at which they operate; local, national, global, or any combination of these (Ruastiala, 1997: 720). These organisations take part in activities such as negotiation, monitoring, and the implementation of policy (Ruastiala, 1997: 720). In order to understand environmental groups fully and how they contribute to environmental management, the following aspects need to be considered: their main concerns regarding the environment; challenges which they face; their roles and activities; relationships with other

organisations, and governments and institutions (Ruastiala, 1997: 720). Collaboration is particularly important when working with complex systems such as the environment. A broad definition of an environmental group is “a self-named, voluntary collection of people (or members of organisations) who agree on some part of a view of the ethical or appropriate relationship between humans and the world around them, who communicate with each other about this topic, and who perform action in a particular venue in order to advance their view of it” (Kempton *et al.*, 2001: 561 in Lhotka *et al.*, 2008: 234). The use of the terms “environmental organisations” shall encompass all environmental bodies considered for the purposes of this paper.

Types of environmental groups and classifications

As the study was specifically aimed at local environmental groups it is important to distinguish what types of organisations these include. For the purpose of this study local level environmental groups are considered to include non-governmental organisation (NGOs), community based organisations (CBOs), societal organisations, private companies and governmental organisations. As environmental groups are diverse and vary substantially it is therefore important to be able to classify them into collective groups so that they may be understood more clearly, especially when undertaking a study such as this. A study by Lhotka *et al.* (2008) in which organisations were classified into groups was noted. The aim of this study was to establish whether environmental groups with different ideologies had challenges in informational exchange hence the study identified a large number and range of environmental groups (Lhotka *et al.*, 2008: 231). It was found that the following classification for local level environmental organisations in Grahamstown was appropriate and thus, this study was used for the basis of this research. For the purpose of this research, environmental organisations were classified as empowerment programs, institutionally based groups and committees, private, societal and governmental. Governments and sub-departments are significantly different from the other identified organisational classes as they often hold the authority and are therefore were classified alone as ‘government bodies’. Inter-governmental organisations (IGOs) and hybrid organisations are two classifications that are discussed in an article by Trzyna (2008: 1), however these operate at national and international levels and are therefore not relevant to this locally based study.

In general, environmental groups that were commonly observed include those which may focus on; conservation, poverty alleviation, rehabilitation and environmental education. With regard to environmental education, various training projects and educational programmes at a school level were also noted. The organisations that focused on more than one type of project, for example conservation as well as cleanup projects, were classified according to the nature of their membership or source of funding. Organisations may also be involved in environmental management in response to environmental demands by the public. One may find private companies involved in this respect.

NGOs and other civil society groups are not only stakeholders in governance, but also have an important role in international environmental agreements. They are able to motivate civil society to participate in global environmental governance and therefore may have an effect on policy decision making (Gemmill and Bamidele-Izu, 2002: 1). According to Gemmill and Bamidele-Izu (2002), there are five main roles for civil society groups, specifically NGOs, in environmental management. They are as follows: (1) collecting, disseminating, and analysing information; (2) providing input to agenda-setting and policy development processes; (3) performing operational functions; (4) assessing environmental conditions and monitoring compliance with environmental agreements; and (5) advocating environmental justice (Gemmill and Bamidele-Izu, 2002: 1). NGOs would therefore be able to place some pressure on the State, whilst still having the ability to influence “values, social behaviour and collective choice” among the public (Conca, 1995: 1).

Information from a variety of sources is needed to maintain a successful environmental group, therefore the exchange of information and skills amongst various groups, experts and governments is required for effective environmental action. One particular way in which environmental organisations can effectively transfer skills and information is through the concept of participation management and evaluation (Lhotka *et al.*, 2008).

Organisations’ role in participation management and evaluation

Environmental organisations need to be actively involved in finding solutions to environmental issues. The concept of participation management (PM) and evaluation (E) is one way in which organisations can be effective in this. Principle ten of the Rio declaration emphasizes this importance: “Environmental issues are best handled with participation of all

concerned citizens, at the relevant level. States shall facilitate and encourage public awareness and participation by making information widely available'' (Estrella *et al.*, 2000: 1). Monitoring and evaluation of the environment is often limited when those monitoring an environment are not from that particular environment. When monitoring and evaluation is done in a participatory manner, through the inclusion of local people, a better understanding of the issues is gained and mitigation strategies are therefore more successful (Estrella *et al.*, 2000: 103). The most important aspect to PM and E are the stakeholders involved as they directly affect, and are affected by the participatory process as well as its actions and outcomes. It is for this reason that this study will take into account the public and, evaluate elements such as their environmental consciousness, willingness to participate, and knowledge of organisations as well as other relevant factors that could affect participation. Monitoring activities are undertaken by some organisations in Grahamstown but are often dependant on local participation as was observed in carious responses.

Key questions and objectives

The aims of this research were to create an audit of all the environmental organisations involved in environmental management in Grahamstown. Our key questions were as follows:

- What types of environmental groups are involved in environmental management in the Makana region and what roles do they play in the region?
- What are their main focuses and concerns with regard to the environment in the Makana region?
- Do they collaborate with one and another, and what is the perceived effect of such collaborations?
- Do they interact with the public and how do they view public participation?
- How knowledgeable are the public with regard to environmental organisations and environmental issues?

It was hypothesized that local environmental organisations are actively working on environmental management in Grahamstown and do collaborate with one another as well as the public. The public would therefore have some degree of environmental knowledge however it is expected that the extent of knowledge would vary across economic gradients,

with the upper earning class being more knowledgeable and the lower income class being less knowledgeable given assumed varying access to education. The same is expected when considering the environmental consciousness of the public across economic these gradients.

Study area

The study was conducted in Grahamstown (33°19'S, 26°31'E) in the Makana Municipality, under the Cacadu District Municipality in the Eastern Cape, South Africa as is seen in figure 1 below. Grahamstown is located approximately 130 kilometres and 180 kilometres from Port Elizabeth and East London respectively (SAexplorer, 2011).

Grahamstown has a population of 91 548 people (PopulationLabs.com, 2011). The widely used languages are isiXhosa, Afrikaans and English.

Grahamstown experienced a rapid period of growth after the arrival of the 1820 settlers, but has since shown a large population growth only in the informal sector (GrahamstownHandbook, 2011). In the late 1800s a number of schools many of which are still active today, namely Kingswood College, St. Andrews College, and Graeme College were formed. In 1904 Rhodes University was established, one of the largest tertiary institutions in South Africa (GrahamstownHandbook, 2011). Rhodes University is the largest economic contributor in Grahamstown with approximately 60 percent of Grahamstown's gross domestic product (GDP) (RUCE, 2005: 2).

Grahamstown lies at the intersection of four climatic zones. Grahamstown has a moderate climate with annual average temperatures ranging from -5°C and +40°C (GrahamstownHandbook, 2011). The wettest and highest temperatures are experienced in summer from December to March; and the coldest months in winter between June to August (GrahamstownHandbook, 2011). Grahamstown has diverse flora as four biomes border the city, the Fynbos, Karoo GRASS Rootzlands and Subtropical thickets however a further 12 vegetation types can be identified within these (GrahamstownHandbook, 2011).

Methodology

Data collection was separated into two major components. Firstly environmental organisations operating in Grahamstown were identified and representatives interviewed thereafter. Secondly, a survey was conducted amongst the general public regarding their knowledge of the work being done by the environmental organisations in Grahamstown and their participation in these activities.

Identifying Environmental Organisations

To identify the environmental groups that are currently operating in Grahamstown, searches were done for the organisations that have registered mailing addresses and those who make public interest claims. Additional searches were conducted through the internet using various organisational databases such as Prodder, and the media. Internet searches for newspapers, newsletters, and websites. This was done to verify that all environmental organisations had been identified.

The decision was made not to include schools in Grahamstown, however the University was included. This is mainly as a result of the limited action that occurs in Schools as opposed to Universities, which are actively involved in the collection of data, which may be used by environmental organisations for policy interventions.

A distinction was made between non-governmental and governmental organisations as they were assumed to have different characteristics. We defined governmental organisations as being bound to the rules and regulations set out by external governing bodies whereas non-governmental organisations are bound only to their own rules and regulations. Overall 21 organisations were identified for the purpose of this study, all of which were contacted; however some were not willing to participate, while other did not respond, thus our sample size was 12 organisations in total.

Data Collection pertaining to environmental organisations

An appointment was made with the office manager, Chief Executive Officer, Chairperson, or a chosen representative according to the type of organisations identified between the period of April 2011 and September 2011. An interview was conducted, approximately 45 minute

long per session; however this was not the case if the interviewees had limited time. In some instances, interviews extended beyond 45minutes. Interviews were conducted face-to-face, via telephone or via email depending on the conditions that were previously agreed upon.

A semi-structured interview was used covering two main areas:

1. Organisational attributes: assessments on the range of activities, staffing, funding, use of conceptual frameworks, and group activities to which the organisations are involved. This included factors pertaining to how and why various environmental groups began and what their key concerns and ideas are for the future of Grahamstown.
2. Information exchange: included details on the information exchange that occurs, who the information exchange occurs with, what type(s) of information are exchanged and if environmental groups work together to tackle complex issues.

Data Collection pertaining to the general public

To understand the public knowledge about the environmental organisation in Grahamstown a semi-structured questionnaire was compiled. The questionnaire inquired about the respondent's number of years spent in Grahamstown, level of environmental consciousness, knowledge of environmental management concepts and the organisations that exist in the town, involvement in environmental projects and the major environmental issues which they are concerned about with regards to the future of Grahamstown and/or the wider community. Question were asked in a variety of manners including both open and closed ended question. One hundred and fifty interviews were conducted at random outside Pick 'n Pay, Checkers and Shoprite supermarkets in Grahamstown between the period of April 2011 and September 2011, 50 interviews at each site. These sites were chosen to hopefully represent the Grahamstown community according to the various target groups each site attracts. With the belief that the respondents with higher and intermediate income shop in pick and pay, and checkers respectively with Shoprite attracting lower income residents who mainly live in the township areas of Grahamstown. All interviews were anonymous and followed the ethical format outlined by the Rhodes University and the Environmental Science Department at Rhodes University constitutions.

Data Analysis

Much of the data collected during this survey was qualitative and therefore little data analysis needed to occur. Where required, basic descriptive statistical analysis of data was conducted using Microsoft Excel 2007 and this being represented figuratively in graphs and tables. T-tests and analysis of variance (ANOVA) were used to identify statistical significance in the quantitative data with the use of Statistica 9.

Assumptions and pitfalls

Assumptions were made concerning the general public data collection these were: people would be willingly to aid in the project especially if they have an opportunity to state their problems about the environment around them. Secondly, we assumed that the respondents would give accurate and reliable information and thirdly the respondents would be able to communicate with the research team. In addition we assumed the majority of the organisations would respond to our requests to interview them. Due to these assumptions, a number of pitfalls were encountered, certain respondents half way through the interview chose to discontinue, language barrier existed with the public interviewed at Shoprite and for this Xhosa speaking interpreters were later used. Only 11 out of the 21 proposed environmental organisations responded and were willing to be interviewed

Results and discussion

Public knowledge about environmental management practices

In the surveys, public respondents were asked about their knowledge of environmental management. 22, 35, and 41 percent respectively at Shoprite, Checkers and Pick 'n Pay respectively claimed to have knowledge about environmental management, the remaining proportions (where n=50 for each site) claimed that they had no knowledge about environmental management at all. Those respondents who claimed to have some knowledge about environmental management, were then asked to give a brief definition in their own words These responses were then graded as shown in figure 2 below. Their responses were graded from a scale of zero to two where zero represents an incorrect response, one represents a response that showed the respondents had some idea of what environmental management was, and two represents an informed and concise response. Generally the majority of the responses were rated zero and the minority rated two. At Shoprite the

majority of the responses rated zero and only one was rated a two. At Checkers the majority of the responses were rated zero and six were rated as two. At Pick 'n Pay less than half of the responses were rated as zero and a greater proportion of responses were rated as informed and concise than having some knowledge.

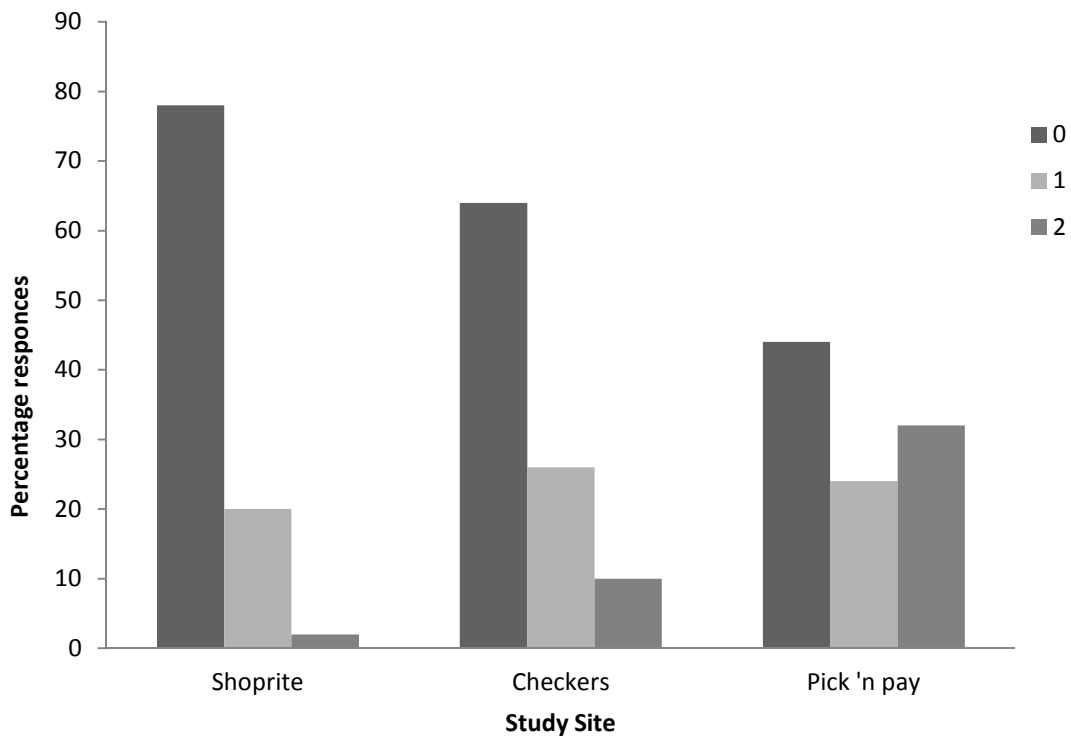


Figure 2: Graded Responses as a percentage, to environmental management definitions

In general, most people did not know what environmental management was. An expected, decrease of amount of knowledge with the hypothesized decreased education level existed as seen in figure 2. Shoprite, where the lowest levels of education were expected, had the lowest amount of knowledge about environmental management, this being highest at Pick 'n Pay where it was hypothesized that there would be the highest levels of education. In coherence with the hypothesis that the least knowledge would be where there was the lowest level of education (that is: Shoprite) figure 2 shows that of those people who claimed to know what environmental management was, the highest amount of people had no knowledge existed at Shoprite, the lowest existing at Pick 'n Pay.

Compared to the number of people who said they knew what environmental management was the number of responses that were rated zero, shows that majority of the public in

Grahamstown lack an understanding environmental management. This should encourage authorities such as Makana Municipality and institutions such as Rhodes University to develop initiatives that will promote environmental consciousness and educate the Grahamstown community on the environment. In addition it is encouraged that the Municipality and other environmental organisations working in Grahamstown, involve the public where possible in carrying out their projects. This is not only a source of employment but also an avenue to raise awareness on environmental issues and encourage the public to care for their environment.

Role of public in environmental management

One of the key aims of this research project was to make an assessment of the role of the public in the work of environmental organisations of Grahamstown. The role of the public in environmental work, as shown by figure 3 was classified as:

- Not = Individual does not participate in any form of environmental work
- Fully = fully committed to environmental work (such as an employee or volunteering on a regular basis)
- Part Time = at least once a month
- Occasionally = less than once a month

Less than 10percent of respondents interviewed are actively involved in environmental activities on a full time basis, 4 percent at Checkers and 14percent at Pick 'n Pay with none at Shoprite (n=50). The proportion of respondents involved in full time work was greater than the proportion of respondents involved in part time work. Only 2 percent in the whole study (n= 150) are involved in occasional work. The majority of the respondents are not involved in any environmental related work, for example 88 percent of participants at Shoprite were not involved in any environmental activity.

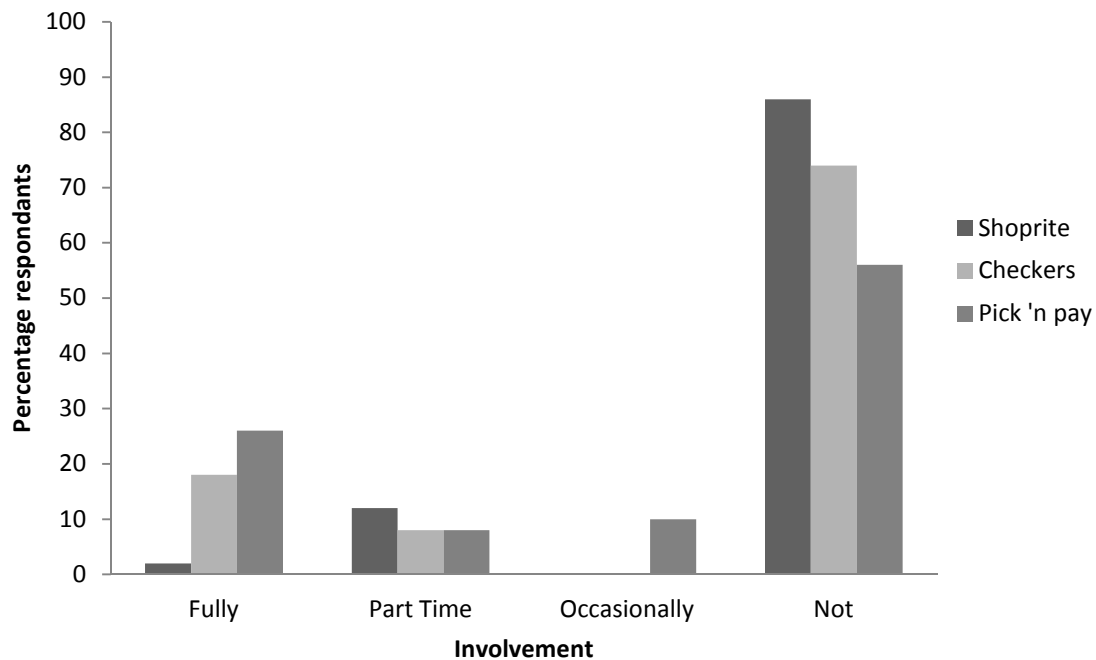


Figure 3: Degree of involvement of public respondents in environmental work

Public participation as defined by Churchman & Sadan (2004) are the “Situations where individuals (or groups) who are not elected or appointed governmental officials and are not professionals working for such officials, voluntarily take part in decision-making processes in order to influence these processes, change them, or improve them.” Participation as is referred to in this study is when individuals or groups take part in an activity run by an local environmental organisation, such as volunteer work, working for an organisation or overseeing a process. Public participation appears to be varied in different contexts where different levels of expertise are required, depending on the context and depending on the aims and selected methodology of the project (Churchman & Sadan, 2004: 6). Because public participation has implications for the nature and distribution of power between different working groups, or environmental organisations, it can often arouse tensions or emotions between the related groups/individuals (Churchman & Sadan, 2004: 5).

Officials often see the public participation process of any project as a threat to power arguing that ordinary people are not capable of being part of the decision making process because of the complexity of issues (Churchman & Sadan, 2004: 5). It has also been argued that the decisions made by officials are largely objective for the greater good; however residents are subjective and concerned largely with their own well being (Churchman & Sadan, 2004: 5). During interviews with environmental organisations in Grahamstown, representatives were

asked to rate (on a Likert scale where 1=not important and 5= very important) what they felt the importance of the general public and other organisations were to them as seen in figure 4 below. Statistically (t-test: $p\text{-value} > 0.05$, $df=20$) there was no difference between the importance rating of the public and other organisations thus indicating that both were of great importance to the organisations as means equalled 4.1 and 3.3 for public and organisations respectively.

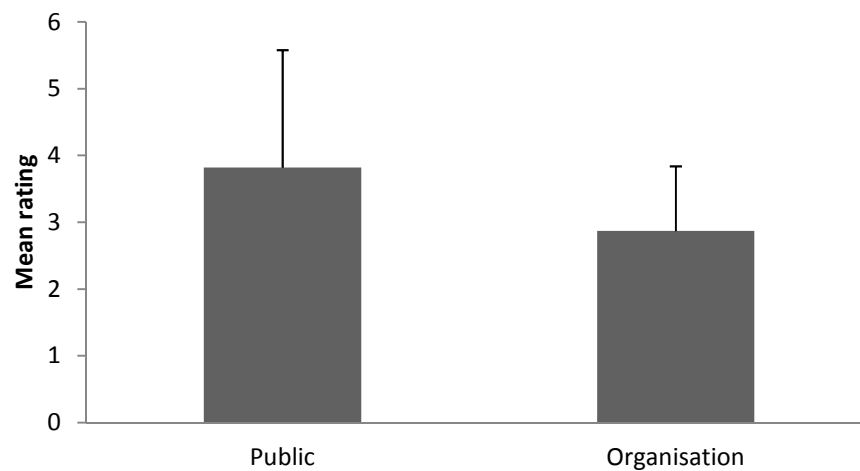


Figure 4: mean importance of public and other organisations to the organisations interviewed with standard deviation error bars.

Worldwide, the role of the public in environmental work is now a basic requirement; in Australia for example there are examples of the use of the public participatory process in examples of a greater and lesser scope (Churchman & Sadan, 2004: 8). The environmental organisations in Grahamstown with whom interviews were conducted, indicated that public participation were of a great importance, however there was much variation as indicated by figure 4. A number of organisations indicated that the role of the public in environmental work was somewhat of a liability and was not an essential component of environmental work in the Grahamstown, which is in coherence with the work by Churchman & Sadan (2004). The low degree of public participation in Grahamstown was countered by the fact that the

majority of people, regardless of economic standing were willing to get involved in environmental work to better the environment in Grahamstown. 62, 82 and 70 percent of the respondents at Pick 'n Pay, Shoprite and Checkers indicated willingness to be involved in environmental work if they had time or if they were to receive something out of it, such as payment.

Members of the public were interviewed and asked about environmental organisations at work in the Grahamstown and their role in society and ensuring sustainability. It can be seen in figure 5 that respondents were unable to name more than one correct organisation. This supports the hypothesis that knowledge would decrease with the decline in economic well-being, respondents in the low income group at Shoprite had a mean of less than 0.5 correct organisations. There is however a significant difference between the number of people that public participants could name, participants at Pick 'n pay naming significantly more organisations than participants at either Checkers or Shoprite (ANOVA; $df=147$, $f\text{-value}=8.219$, $p\text{-value}\ll 0.01$). Although in excess of 20 environmental organisations that are currently at work in Grahamstown were identified, few people could name more than 1 correct organisation working in the area indicating that there is poor knowledge of the environmental organisations at work in Grahamstown.

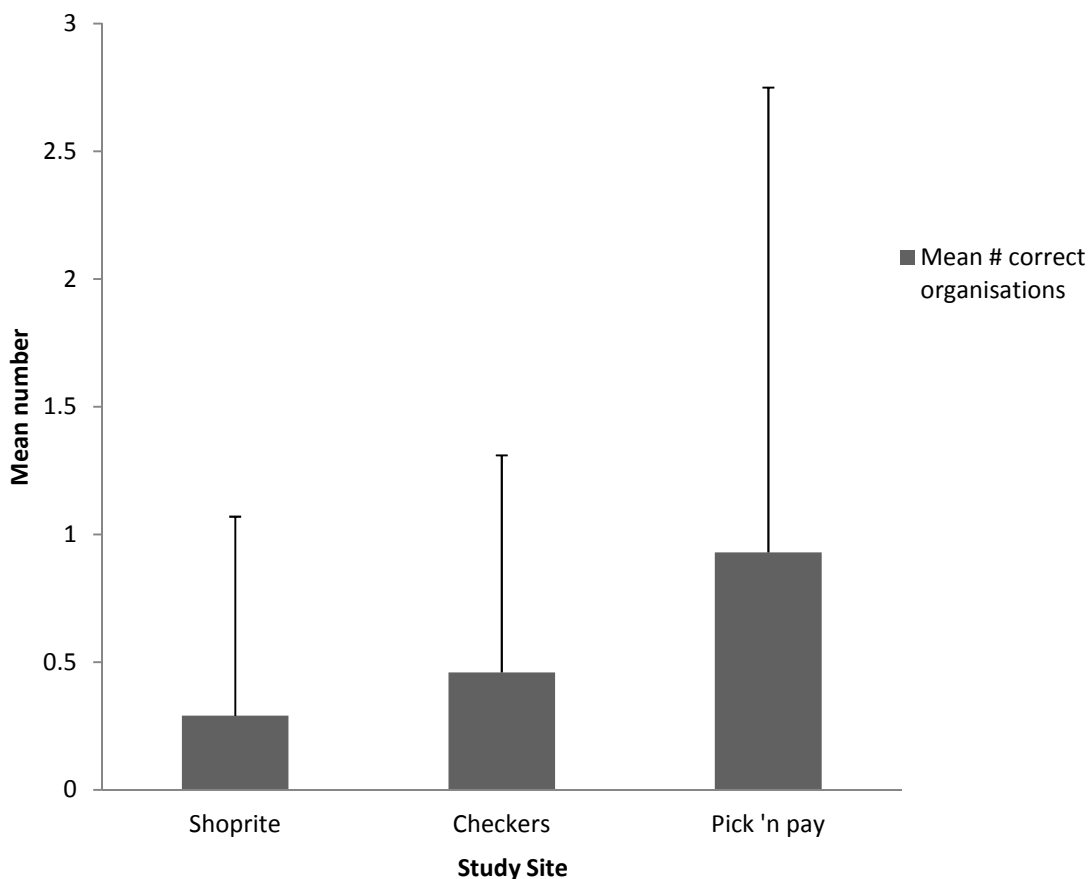


Figure 5: Mean number of correct organisations that public respondents could name with standard deviation error bars.

Environmental consciousness of public participants

A notable feature in figure 6 below is the mean number of time spent in Grahamstown by public participants according to study site. The respondents with a high economic well-being have lived in Grahamstown for significantly less time than those with a lower economic well-being, all differences being very highly significant (ANOVA: df=147, f-value=14.45, p-value<<0.01). A comparison was made in figure 6 between the mean time spent in Grahamstown, in years, and their respective environmental consciousness. It was found that people of a high economic well-being had the lowest environmental consciousness, however in contrary to the hypotheses; the people of an intermediate economic well-being had the highest environmental consciousness, this decreasing for those of a low economic well-being. Although multiple explanations may account for this, the most likely explanation would be that those people of a low economic well-being live in conditions where they do not have

basic necessities such as electricity, access to clean drinking water, adequate sanitation and therefore they have less need to ensure that lights are turned off during the day for example. People of an intermediate economic well-being will have access to many more services such as electricity, clean drinking water, and sanitation. However they would be more conscious of their lifestyles, not aiming to reach sustainable living but to minimize living costs. Although there are great amounts of variation, it is believed that people who have a high economic well-being will take certain aspects of their lifestyle for granted, such as ensuring lights are turned off during the day or when they leave a room. The differences between level of environmental consciousness are not significant between the three sites (ANOVA: $df=147$, $f\text{-value}=1.135$, $p\text{-value}>0.05$)

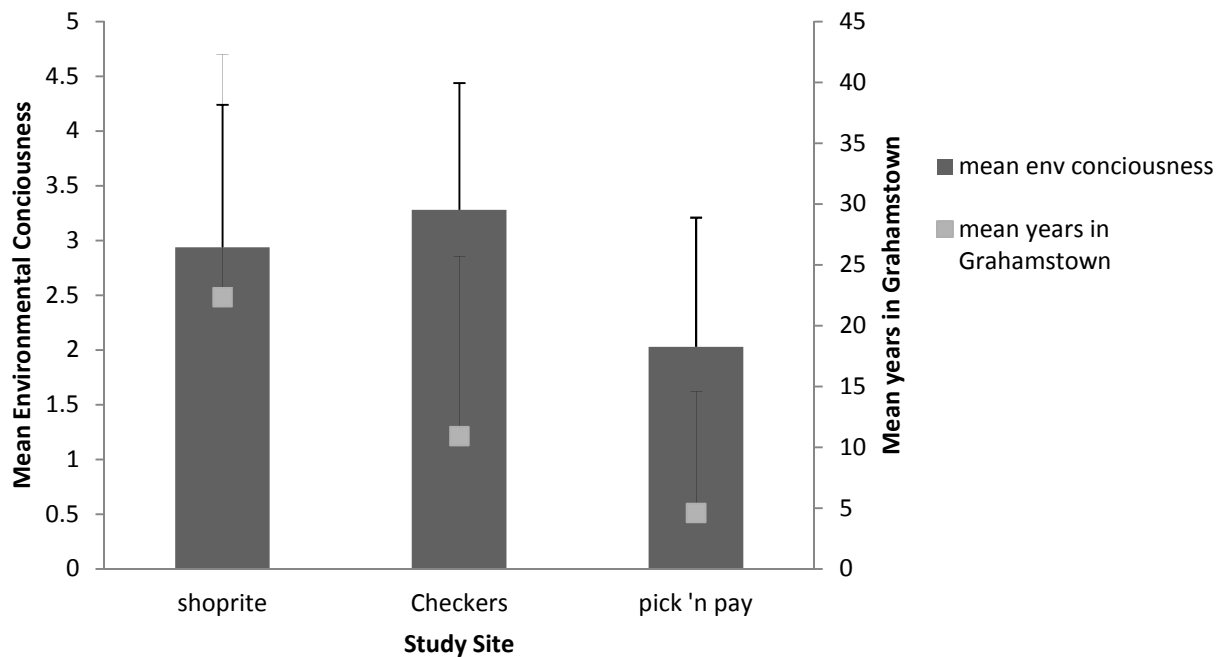


Figure 6: Mean environmental consciousness in relation to mean time spent in Grahamstown

Role of organisations in environmental management

The role of organisations in Grahamstown in terms of environmental management is determined by goals and visions from inception of the entity. The primary themes the various organisations deal with can be classified according to their primary aims. The objective is to assess their part in the bigger picture of environmental organisations and their work in

Grahamstown can be seen in table 1 below. This table shows that the majority of organisations identified within Grahamstown focused on education, conservation and rehabilitation, fewer organisations focusing on poverty alleviation and its effects on the environment. It is interesting to note that although many of the environmental organisations focus primarily on education, the majority of public participants in Grahamstown had little knowledge about environmental management and the role of the organisations. As is recalled, few people could name more than one correct environmental organisation at work in Grahamstown. Noteworthy are the organisations formed within a tertiary institutions, as well as the tertiary institution itself (Rhodes University) for their primary role in education that is Rhodes University and its societal organisations are more focused on education and public participation as these societies were established to link organisations, environmental awareness and the community. It is of note that many organisations focused on multiple issues in a general transdisciplinary approach.

Table 1: Primary focus of the environmental organisations in Grahamstown

Focus	Frequency
Conservation	7
Rehabilitation	6
Education	9
Poverty Alleviation	4

Environmental concerns for Grahamstown

The data analysis showed that organisations due to expertise of employees had less varied but more ‘true’ environmental concerns for Grahamstown as seen in figure 8 below. Water related issues and pollution were a common concern amongst public respondents and environmental organisations. It is note worthy is that despite both viewing pollution and water issues to be of primary concern, the organisations viewed water related issues to be the most pressing issues in Grahamstown; however the public viewed pollution to be the major concerns. Responses showed that the water resources in Grahamstown are often scarce especially in the townships areas where there is a need for potable water. In coherence with previous statements that the public in Grahamstown are not informed about the environmental issues and concerns as well as the role of environmental management in ensuring sustainability is reached, it is evident from figure 7 below that there is little public

knowledge of the environmental concerns for the local area. Although many respondents identified the two primary issues facing Grahamstown, other ‘issues’ such as rat problems and global warming were also mentioned which typically act on a very local or global scale. Ten percent of the environmental organisations believed rapid development was a pressing issue that threatened Grahamstown, however as little as 3 percent of the public respondents saw this as an issue.

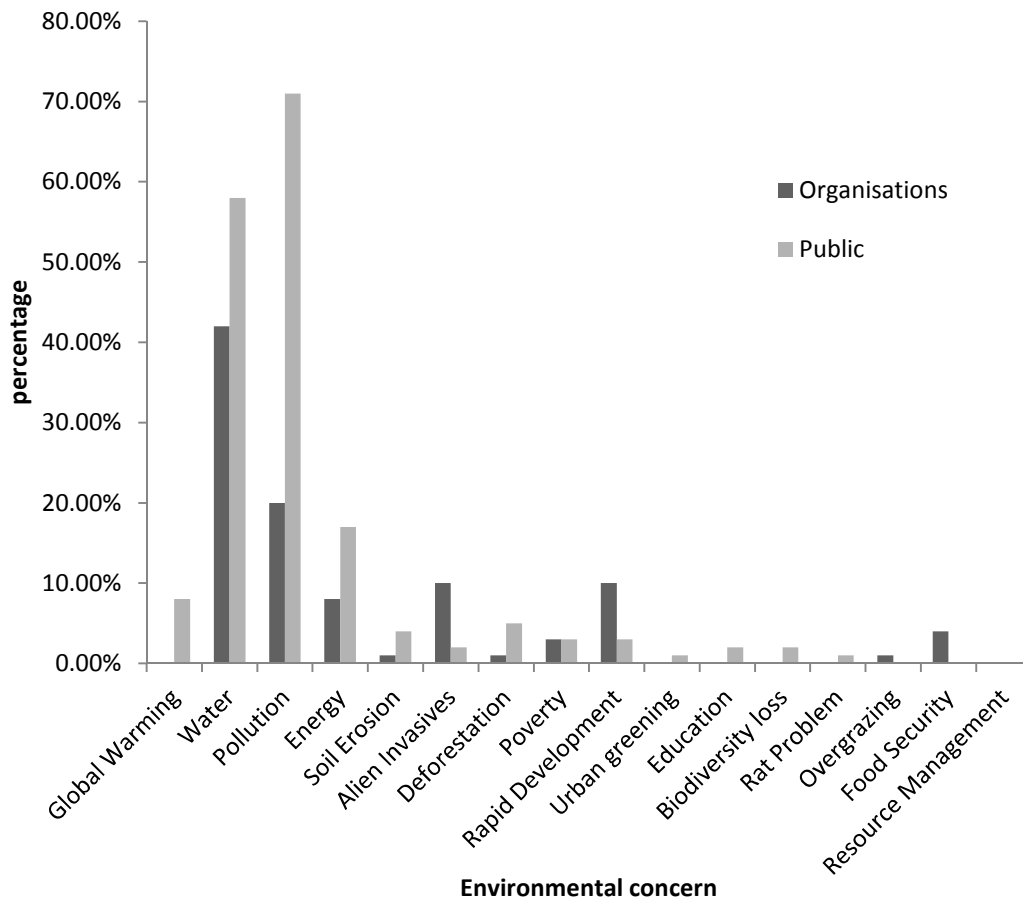


Figure 7: Environmental concerns as a proportion of the total number of responses of public participants and organisations for Grahamstown

The Shoprite respondents were affected the most by waste management as most of respondents live in the township area where waste management is thought to be a serious issue. This group highlighted that the Municipality does not collect disposed materials on a regular basis leading to litter being the leading concern amongst this group. As the problem had a direct impact on their surrounding this could explain the percentage that was willing to be involved in environmental work, 82 percent of the Shoprite respondents agreed while Pick

'n Pay and Checkers groups were roughly 60 percent and 70 percent respectively. Depending on where in Grahamstown they live, respondents were affected by different issues in different ways. For example a student living on the Rhodes University campus interviewed at Pick 'n Pay may only experience water shortage for a few hours compared to a local Grahamstown resident situated in the township that not only deals with water shortage and availability but also issues of water quality they have access to. The organisations mention a broad range of concerns but the public's responses were more related to social attributes of their lives and concerns that affect them. To support this, results showed that less than 5 percent of the public mentioned alien invasive plants, this possibly due to land degradation and spread of invasive plants not affecting their livelihoods. Interesting findings by the Lhotka *et al.*, (2008) study found that as much as 75 percent of organisational groups focused primarily on local issues. This is also the case for Grahamstown, few organisations focusing on issues that would typically act above the local scale. One may expect a high number of organisations to focus on local issues especially as they are based in that location and may have established themselves in response to various local environmental demands.

Willingness of public participants to be involved and public participation

The willingness to be involved in projects appears not the hindering factor in terms of public participation; it is the lack of initiative on the part of the Municipality to provide the opportunity to the public to be involved and in ensuring the success of the projects of other primarily volunteer organisations. The Kowie Catchment Campaign for example indicated that their relationship with the Municipality was poor, the chosen municipal representative attending few meetings making the success of their projects difficult. Whether this is due to lack of skilled employees or financial constraints, this aspect of the functionality of the Municipality would need to be changed and upgraded to truly understand the importance of a community in environmental management.

Questions were asked to establish organisations views on public participation. All the responses express the importance of including the public in environmental projects. Reasons for this include that there is a need for volunteers and memberships between local people and organisations. Public participation can help improve the viability of a project as well as the success of that project. A particular response outlines the fact that people are an important component of the environment and all dependants on land and therefore their inclusion into

any decision-making is essential. Projects where poorer communities are concerned are particularly important for those people as they could help improve livelihoods. The transfer of environmental knowledge to local people is an important benefit of public participation as they can then continue environmentally friendly practices long after the finishing of projects. In the responses it was also mentioned that public participation enables an understanding of issues that may be encountered on the ground. It enables an understanding of practical issues that may be faced as well as problems encountered by local people. The understanding of such issues is therefore important and can contribute to a greater efficiency in the projects undertaken. Respondents were then asked to rate the importance of public participation to their organisation. The responses were significantly high (5 out of 5) with most organisations that included the public in projects.

Collaborations between organisations

A majority of organisations indicated that they do interact with other organisations through environmental projects. When asked to rate their success of such collaborations the responses showed that there is much room for improvement. Issues that were expressed include a lack of consistent coordination, infrequent mutual benefits for both parties and that sometimes collaborations are subjective or of a loose nature. In the Lhotka *et al.* (2008) study it was also found that seventy five (55 percent) of the environmental groups interviewed had a neutral approach to achieving their goals. This would not necessarily mean that they were passive; rather they preferred a collaborative approach opposed to an approach which resulted in conflict. Thirty seven groups were found to be activists in their approach to achieving their goals. The study found that while the ideologies didn't limit the exchange of information between groups, activist groups tended to be more connected in terms of information transfer (Lhotka *et al.*, 2008: 247).

Organisational funding

During interviews, organisational representatives were asked how their organisation was funded, the results from this being seen in table 2 below. It is evident that the majority of organisations in Grahamstown are privately funded, thus, the funding they received is either from contracts or money earned. An equal number of organisations received their funding through affiliation or membership fees or through sponsorship, fewer organisations receiving governmental grants, donation based funding and being funded by an external organisation.

Those organisations that were funded by a single external organisation were generally associated with the tertiary institution in Grahamstown, namely, Rhodes University, as were those organisations that received their funding through affiliation or membership fees. Governmentally funded organisation included the two identified governmental organisations (SANBI and Makana Municipality) as well as the tertiary institution, Rhodes University. It is of note that many organisations were not limited to a single ‘type’ of funding,’ for example Galela Amanzi was funded both by affiliation fees and by a single external organisation, ie Rhodes University.

Table 2: frequency of funding types of Grahamstown’s environmental organisations.

Funding type:	Frequency
Affiliation/membership fees	4
Privately Funded	7
Sponsors	4
Funded by single external organisation	1
Donation based	2
Governmental	3

Environmental Organisations and Institutions Interactions with the Makana Municipality

The majority of organisations interviewed do interact and work with the local Municipality. The few that do not work with the Municipality do so because they may be a private company that deals solely with client demands or because of a significant difference in the nature of projects undertaken as is the case of Coastal and Environmental Services. In the interviews, organisations were asked to rate their relationship strength with the Municipality on a Likert scale of 1 to 5 where 1= weak and 5=positive. The general notion is that there needs to be an improvement in the relationship strength between organisations and the local Municipality. No responses were greater than 3 and perhaps there needs to be a better system of communication or better planning processes between the organisations and Municipality when collaborating. When asked whether the Municipality supports or hinders environmental projects that are undertaken by the organisation the responses show that more work is needed for organisation and Municipality collaboration. The responses show that the Municipality is sometimes supportive, but it is expresses that there are some complications with regard to organisation and Municipality collaborations. The Municipality could be indifferent to the

organisation in its roles and activities, or as is stated in a particular response, there is intention of good support but a lack of follow through. From the responses it is evident that some complications are present and perhaps one should consider the establishment of an organisation and Municipality forum for a better understanding between these important institutions. The network diagram in figure 8 below shows the relationships that occur between the different organisations in Grahamstown and the Makana Municipality. Organisations in red failed to respond to our attempts to make contact. As has already been mentioned, the majority of the organisations interviewed viewed their relationships with the Municipality at present to be poor, no organisations giving a relationship score of higher than 3. In some cases, Galela Amanzi for example, the representatives stated that the Municipality often hinders their projects giving a relationship score of 1.

Examples of projects that have municipal and organisational involvement are the following. The establishment of the Local and Environmental Action Plan (LEAP), the Makana Environmental forum, management of the commonage, water management practices and sewage disposal management, the wind farm proposal, the Makana goat village, clean-up projects, and the clearing of alien invasive species. These examples show that there is a wide range of activities that are undertaken with regard to environmental issues through Municipality and organisation collaborations. One can therefore see the importance of such collaborations in environmental management of the Makana Municipality.

Summary of different organisational classes

The following section was created through the collation of interview responses by environmental organisation representatives. Each will give a brief summary on the organisational attributes of each local environmental organisation class as previously outlined.

Government-related Institutions:

Makana Municipality

The environmental department was established in November 2008. The department receives a budget from local government which is used in various environmental projects in the

Makana Municipality. These various projects target poverty alleviation, conservation, rehabilitation and environmental education.

The following are projects the Municipality is currently involved in:

- Eco Schools; an environmental education programme.
- Environmental training of technical officers associated with the department. In this project the Municipality works with WESSA, a NGO.
- Ecosystem services projects aimed at poverty alleviation, this could include selling ecosystem goods on a market (future project).
- The identification and maintenance of clean hotspots.
- The establishment of recycling depots.
- The management of the Kowie Catchment.

All projects undertaken are aimed at making the Makana Municipality the leading environmental Municipality. The department views cleanliness or litter and water issues as high priority concerns in the area. The department works with other organisations and the public on the various projects it undertakes. It is viewed that incorporation of the public into these environmental projects is important as it increases environmental awareness. Job creation is often questioned when considering new projects however it is not easy to determine the amount of jobs that could be made available as many projects are temporary. One primary problem that is encountered in the projects undertaken by the department is a lack of funding to sustain projects.

Positive changes that have occurred in the Makana Municipality as a result of the work done by the Municipality are an increase in urban greening and improvement in litter management. Future environmental concerns for the area will include a green city strategy, further environmental policy innovation and investment in environmental management of the area.

The South African National Biodiversity Institute

The South African National Biodiversity Institute (SANBI) is an environmental institution that is closely related to local government, and for the purposes of this study, does interact with the Makana Municipality. As a requirement of the National Biodiversity Act: the

institution is committed to following through on conservation targets, specifically the conservation of biodiversity. They promote the sustainable use of natural resources and the development of sustainable livelihoods as well as ensuring strong partnerships, institutions and governance country wide. The institute is funded largely by the government, sponsors and through donations. SANBI's long and short term goals are to coordinate all biological projects happening in the Eastern Cape and to ensure municipalities are aware of biodiversity conservation.

Interaction between SANBI and the Makana Municipality

The institute works with the Makana Municipality and indicates moderate relationship strength with the Municipality (a 3 out of 5 rating). The institute expresses a very good working relationship with the environmental manager of the Makana Municipality and this is important for the success of environmental projects undertaken in the Makana Municipality. An example of a project these two organisations are involved in is the capacity building workshops aimed at strengthen human capital.

Public Participation and Collaboration with other Organisations

SANBI does not work directly with the public however the institute does express the vital importance of public participation as it enables a transfer of knowledge and an understanding of potential difficulties that could be experienced at grassroots level. SANBI has occasional yet successful collaborations with other organisations.

Impacts on Grahamstown

SANBI introduced the Eastern Cape biodiversity conservation plan that aids in the development and planning project processes. An urban greening project is considered one of the positive environmental changes that have taken place in the Grahamstown area. SANBI views Grahamstown's future as a positive one, conditional to the achievement of coordination between the different environmental stakeholders in environmental projects.

Societal organisations:

Societal organisations are characterised by a group of people in a society considered as a system organised by a characteristic pattern of relationships (Food and Agriculture organisation of the United Nations, 2011). In Grahamstown four societal organisations were

identified which included the Wildlife and Environmental Society of South Africa (WESSA), the Botanical Society of South Africa (BOTSOC), Galela Amanzi and GRASS Rootz. Of these, two (Galela Amanzi and GRASS Rootz) formed within Rhodes University, and WESSA and BOTSOC form the Grahamstown branch of a larger organisational group. Societal organisations characteristically receive budgets from sponsorships however many also supplement their income with membership fees, or money earned by the organisation. Many of the societal organisations have not changed significantly with time, however most indicated that there had been some modification of aims and objectives. Some of the projects run by societal organisations in Grahamstown include:

- Installation of rainwater tanks
- Research
- Discussions with members
- Encouragement of alien clearing
- Education
- Promoting sustainable use of medical plants

Societal organisations such as GRASS Rootz, Galela Amanzi, WESSA and BOTSOC tended to focus on a broader range of environmental management issues than any other type of organisation concentrating on all focus areas. BOTSOC for example focused on conservation, rehabilitation, environmental education, and the removal of alien vegetation and WESSA focuses on poverty alleviation, conservation, rehabilitation and environmental education. All societal organisations rely heavily on commitment from the public; both for funding and for ‘man power.’ They rely on members and volunteers to sustain projects hence the importance of the public in project life span. During the interview conducted with GRASS Rootz, a student organisation, the representative stressed that students were only temporary in Grahamstown yet members of the public lived in Grahamstown for the long-term and thus continuity is often a recurring issue with public participation. GRASS Rootz also indicated that their role in environmental management is often limited by larger organisations such as Working for Water, for these organisations have a greater capacity to clear alien vegetation for example, volunteers of GRASS Rootz now having to travel further afield to clear.

All societal organisations stressed that water quality and availability were of dire importance when considering the future of Grahamstown. Societal organisations indicated that pressing issues such as the water quality in Grahamstown often spur an increase in interest and thus an increase in volunteers in the local area. All societal organisations also indicated that with continued management they see a bright future for Grahamstown

Private environmental organisations

In the study carried out private entities were included; those identified including Conservation and Support Services (CSS) and Coastal Environmental Services (CES). Though both are private they are different, each company will be discussed in turn.

CSS

CSS was established in 1998 for the purposes of employment and is largely involved in geographical information system (GIS) projects. The company is privately funded. CSS is profit driven and its goal is to provide sustainable employment. The top three environmental issues the company identified were sustainable portable water, invasive alien growth and sustainable natural energy needs which is coherent with many other organisations of different classes. CSS does not work with the Municipality in any of their projects, however they rate their relationship with the Municipality as 3, representing a moderate score. In addition CSS does not work with the public or any other environmental organisation in any of their projects however they acknowledge the importance of collaboration with the public. CSS identified the ongoing Working for Water (WfW) programme of clearing invasive plant species as a positive change in Grahamstown. CSS deems the future of Grahamstown depends on the Municipality through improving service delivery such as clean water and refuse removal. As well as the national Government in continuing the WfW programme of removing alien invasive plants.

CES

CES was established in 1990 to provide environmental consulting services. The company has specialist environmental consultants and is mainly involved in environmental impact assessments (EIAs) focusing mostly on rehabilitation and audits. The company is also an expert in the assessment of dune mining for titanium. The company is funded through the

fees paid by clients, receiving no external funding. The company's goal is to have a balanced look at the environment, with reference to development, and to continue to offer a balanced service that allows for development however stressing the importance of sustainable development. CES considers the following as the top three issues in Grahamstown, water (conservation and use), integrated planning for development and natural resource management focusing their work largely on conservation, rehabilitation, and environmentally responsible development however this is largely contract based. CES does work with the Municipality including the Buffalo and Nelson Mandela Bay Municipalities rating these collaborations as relatively successful, despite the low relationship score of 2. CES works with the Municipality in the following projects, the Makana Goat Village, the proposed Waaineck Wind Farm and the new Grahamstown Monument. CES works with the public in all their projects because of the fact that they are required to by legislation. They rate the importance of the working with the public a 5 with the use of a Likert scale (1 = not important to 5 = important). CES does not work with any other organisation in any project. However they mentioned there is some interaction and mutual benefits they experience from the interaction, giving a rating of 3. CES identified the Waaineck Windfarm as one of the most significant positive changes that has occurred in Grahamstown. CES sees the possibility of a slow decline in future for Grahamstown and recommends that the Municipality should carry out all its responsibilities and improve management of places such as the northern and southern commonages of Grahamstown.

Institution based groups and Committees

Department of Environmental Science (DES), Rhodes University

The Department of Environmental Science was founded in 1999, it is Government funded according to the number of student. DES long term goals include becoming a centre for excellence for livelihoods through their focus areas; conservation, rehabilitation, wetland management, sustainable use of resources, environmental education and also taken into account is poverty alleviation. The top environmental issues raised by the representative of the department include threat to biodiversity due to alien invasive population, land degradation and impacts of poverty.

DES and the Municipality work together in certain projects such as the Makana environmental forum, maintenance of the Grahamstown commonages and Local Environmental Action Plan (LEAP). To investigate the information exchange between these two bodies, the relationship rating DES gave was 3 out of 5, meaning their relationship is more coexistence than fully cooperative.

The informational exchange with the public was rated highly (5 out of 5) and the department stressed the importance of the public in their projects and the role they play as the “key component of the entire system”.

Rhodes University Environmental Committee

This body founded in 2002 was established to promote sustainability and implementation of the environmental legislation. Consisting of 18 to 20 people, this committee is funded by the University and some of their goals include: reduction of Rhodes University carbon footprint and having sustainable practices being the norm in and around campus. Since the inception of this committee, Rhodes University has established an environmental policy, the green fund, recycling programme and has a representative in the Student Representative Council in the form of the Environmental officer. Through environmental education and sustainability, the committee continues to re-evaluate and change their short term goals to better the University and the local community.

The committee rated the relationship with the Municipality with the lowest score of 1 out of 5, commenting that the Municipality neither hindered nor supported their projects but had worked together on the Makana environmental forum, leasing with respect to service and infrastructure and the water forum. The relationship with other environmental organisations was given a rating of 3 out of 5 and their use for external organisations or groups was mainly for specialists or experts advice. In terms of the committee interaction with the public, it is normally during environmental events. The committee sees the public as important stakeholders and without consultation of these stakeholders; projects would not be successful as participation is crucial.

Empowerment Programs

The President's Award and the Umthathi Training Project were considered to be classified as empowerment programs for the purposes of our study. The President's Award focuses on project involving youth empowerment and development with specific focus on social service, skill development, and physical recreational areas. The Umthathi Training Project focuses on aiding the development of skills to help people in leading a healthier lifestyle. This is done through the development of skills involving garden projects, indigenous plant cultivation and the development of basic life skill for society. This shows that both groups have an element of environmental education, which would have an effect on the natural environment around Grahamstown. Both groups are donation based, however the President's Award receives funding from sponsors and private sources. The President's Award only focuses on rehabilitation with an emphasis society. Umthathi Training Project has focuses in conservation, rehabilitation, poverty alleviation, and environmental education. Umthathi Training Project has a good relationship with the Municipality and collaborates with the Municipality on projects such as seed collection and establishing community gardening. Both groups are involved with the public given their social nature and feel that they have a positive influence on the surrounding community. In evaluation of these groups one could assume that by targeting society and providing opportunities to people, this could help alleviate poverty and aid in people becoming more self reliant in terms of natural resource use. One would also expect that environmental education would have a positive effect on the surrounding environment.

Recommendations

This section deals with the opinions of the organisations on environmental future of Grahamstown. Overall the environment in Grahamstown is seen in a positive light with suggestions of adopting green cities strategy; increase of investment in environmental management as funding is normally a hindering factor in project advancement, urban growth and environmental policy innovation. Innovation is needed due to the Municipality's poor track record of accountability and transparency. On the other hand, some organisations were not optimistic about the future of the city's environment, envisioning a slow decline especially if no ethic or appropriate frameworks are implemented due to the Municipality's capacity to deliver services. To tackle the problem of rapid urban growth, we recommend that

the Municipality make improvements in their infrastructure to cope with the increasing population in the newly developed areas.

Despite the distinction of governmental or private, organisations have a social responsibility to involve environmental education into the programs or include it as a secondary focus. As the value of civil society in environmental decision making is of high importance in governmental processes according to Agenda 21 (Gemmill & Bamidele-Izu, 2002: 3). There are numerous social issues mentioned in the public respondent survey that influence certain environmental concerns raised. Waste management for example is linked to the ineffective land use zonation of the Municipality, to address these problems the Municipality has to strengthen ties with other organisations and encourage different environmental stakeholders to assist in environmental and developmental planning initiatives.

Conclusion

The role of environmental organisations in Grahamstown differs from one organisation to the next, with different focus areas from poverty alleviation, conservation, rehabilitation, environmental education to empowering the youth. These organisations approach the concept of environmental management through these areas. The Municipality is expected to be the entity that encompasses all of the focus areas hence the importance of a positive relationship with the public. If GRASS Rootz are not acknowledged, environmental management through the Makana Municipality will not be effective according to national even global scale in terms of local governance. As shown by the results, the willingness of the public should be seen as a platform to move forward in a direction that not only ensures the maintenance of the state of the environment but also the empowering of the local Grahamstown community through the improvement of delivery services so as to not compromise the environment when locals find their own means to sustain their livelihood.

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Appendix

Organisational Directory

Rhodes University environmental Committee

Environment@ru.ac.za

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www.ru.ac.za/environment

Department of Environmental Science, Rhodes University

z.odendaal@ru.ac.za

046 603 7002

<http://www.ru.ac.za/static/departments/environsci/index.html>

Wildlife and Environment Society of South Africa

Grahamstown Branch

046 636 1263

South African National Biodiversity Institute

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Makana Municipality

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046 636 2871

Galela Amanzi

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The Presidents Award

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Conservation and Support Services (CSS)

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Coastal and Environmental Services

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