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Limited Awareness on Climate Change at the Zimbabwe Open University (Midlands Region): A Deterrent on Information Dissemination

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Abstract
The study intended to establish the role played by the Midlands Region of the Zimbabwe Open University in the dissemination of information on climate change. The study utilized a combination of quantitative and qualitative methods in gathering data. Questionnaires, interviews and observations were used in collecting data from staff members and students in the ZOU Midlands Region. The study established that the ZOU Midlands Region was not doing enough in the dissemination of climate change knowledge to students and the Gweru City community. Its curriculum which was determined at the national level did not treat climate change as a subject. The issues on climate change were treated in passing in most of the disciplines offered by the university except in Geography and Environmental Studies. The study recommends that the ZOU Midlands Region should be at the centre of the dissemination of information on climate change. The ZOU Midlands Region should have workshops and conferences on climate change. Through its National Centre the university should offer programmes on climate change so as to find solutions to this devastating phenomenon.

Keywords: Climate Change, Universities, Zimbabwe Open University, Midlands Region.

BACKGROUND TO THE STUDY

Climate change is one of the most critical contemporary environmental challenges affecting the world. It has actually become a topical issue that has generated global debate among governments, scientists, environmentalists and advocates of a better society (Ekpoh and Ekpoh, 2011; Mbah and Ayegba, 2013; Umoru and Okeke, 2012). Climate change also known as global warming is associated with increases in temperatures and heat stress, more frequent drought and intense flooding, windstorms and disease outbreaks (IPCC, 2007). It has become a phenomenon that affects human lives in a number of ways that include floods and droughts. It is a challenge to development efforts particularly to countries with people who depend on rain-fed agriculture for their livelihoods (Archer, 2003; Gukurume, 2011; Slater et al., 2007; Yanda, 2010). Rainy seasons have become unpredictable, whilst temperatures have gone up causing soils to become dry.

The threats posed by climate change call for universities to play a significant role in coming up with solutions and ways of dealing with this adversity. Universities are institutions with the mandate to nurture, train, educate and monitor students in different bodies of knowledge which include climate change (Sanni et al., 2010). It is imperative therefore for respective disciplines within universities to infuse climate change issues in their curricula so as to improve climate literacy among students (Beck et al., 2013; Chakeredza et al., 2009). Since students live within communities, climate literacy is expected to cascade down to these communities. This will empower communities and enable them to comprehend challenges brought about by climate change. Pagham et al. (2013) contend that if the citizenry and institutions such as universities are well informed about by climate change they will be responsive to challenges brought about by climate change.

Makena (2009) and Yanda (2010) postulate that it is critical for graduating students to be well

versed with challenges associated with climate change. Their appreciation of climate change issues helps to shape and sustain future policy making as well as economic development. Universities have multidisciplinary professionals who should take advantage of their situation to have a multi-sectoral collaboration in dealing with climate change issues (Helferty and Clarke, 2009; Okoli, 2014; Yanda, 2010). This is an opportunity to look at climate change from a holistic perspective and psychologists, sociologists, anthropologists and mathematicians have an opportunity to contribute towards solving problems related to climate change. This means that universities by their very nature should provide cutting edge scientific and social research on climate change. Myers et al. (2011) contend that as centres of research universities should investigate on issues such as diseases associated with climate change. They should be responsible for organising and running local and international workshops, seminars and conferences as part of their community engagement (Synnevag and Lambrou, 2012).

Universities particularly those in Africa have however not taken a leading role in addressing climate change issues. They have encountered a number of barriers. A study by Ingwe et al. (2010) revealed that some university lecturers in Nigeria lack the competency to deal with the subject comfortably. They do not have the expertise, capacity, will and experience. According to Padgham et al. (2013) the above mentioned factors stifle the potential of African universities to become active participants and agents in transformative change. Dube and Chimbari (2009) postulate that much of the work on climate change in Zimbabwe is done through networks such as African Technology Policy System (ATPS), ZERO Zimbabwe, CARE Zimbabwe and Climate Change Adaptation in Africa (CACC). In essence there are more networks than institutions such as universities doing work on climate change in SADC region. Although university students are eager to learn about climate change they may not be able to get the information on the subject from their lecturers. This is because their lecturers may not be competent enough to teach climate change issues or may not have the information on the subject. Instead they are exposed to information in the media which could be distorted (Cordero et al. 2008). The situation on the ground in developing countries shows that the universities' responses to climate change are weak. For instance very few universities have climate change as a distinctive course of study at the undergraduate level (Sanni et al. 2010). Filho (2010) argues that apparently universities do not know how matters related to climate change may be systematically infused in their study programmes. Ingwe et al. (2010) observe that lack of funding particularly in African universities affects the dissemination of information on climate change. The situation is different in the developed countries where universities have embraced research on climate change in a more serious way. The universities in the Nordic countries are home to a large number of research institutions and hubs that conduct research related to climate change (Mandag, 2009). For instance the University of Copenhagen and Aarhus University are well known for keeping historical records of climate changes. They are also known for Danish research competence. In Norway the Bjerknes Centre for Climate Research (BCCR) is a Norwegian Centre of Excellence and the largest climate research centre in the Nordic region.

This study was therefore motivated by the desire to understand and appreciate how the Zimbabwe Open University through its Midlands Region dealt with the dissemination of information on climate change to its stakeholders.

PURPOSE OF THE STUDY (OBJECTIVES)

- To find out if ZOU students and staff have adequate knowledge on climate change and natural hazards
- To examine factors inhibiting the dissemination of information to students, staff and the Gweru community.
- To examine whether the ZOU (Midlands Region) is responding to the climate change problem.

- To develop sustainable ways of disseminating climate change information to beneficiaries such as students and the Gweru community.

METHODOLOGY AND AREA OF STUDY

This study utilized an explanatory mixed research design by combining both the qualitative and quantitative techniques. The study collected and analysed the quantitative data first then collected and analysed qualitative data as a follow up to the quantitative results. The quantitative results were used to shape the qualitative research questions, sampling and data collection. This was a pragmatic approach which capitalized on the complementary strengths of the two styles. The mixed methods mirrored real life concerning knowledge on climate change in the Midlands Region of the Zimbabwe Open University. The study was carried out in the Midlands Region of the Zimbabwe Open University (ZOU). ZOU is made of ten regions which are located in the capital city of each of the ten national provinces. The university has an eleventh region which is the virtual region catering for students outside Zimbabwe. The Midlands Region is located in Gweru City which is the capital of the Midlands Province.

Sample

ZOU Midlands Region academic and non academic staff and students made up the population of the study responding to questionnaires. Academic staff referred to lecturers while non academic staff included the administrative and support staff such as clerks, secretaries and security personnel. There were 45 academic and non academic staff in the region. At the time of the study registration was still in progress hence it was not possible to come up with the final figure of the student population. Convenience sampling was used to select the students since they were easily accessible and willing to participate in this study. Purposive sampling was used to select the staff members, Environmental Management Agency (EMA) and City of Gweru as respondents because it was felt they had relevant information required for this study. The students were interviewed as they came to the university to register. Full time and part staff members were given the questionnaires at their places of work while some of the part time tutors were given the questionnaires as they came to the institution. Only two stakeholders, the City of Gweru and EMA were purposively sampled and interviewed during the study.

Instruments

The researcher used questionnaires which were self administered. The questionnaires for students and staff members were structured (five point Likert type) and open ended. The questionnaires provided numerical data that was used to provide measurable evidence on a number of issues on climate change as observed in Tables 1 and 2. Data from the questionnaires were utilised in establishing relationships between variables on climate change. Face to face interviews were conducted with staff, students and specific stakeholders like the City of Gweru and Environmental Management Authority. Interviews were designed in such a manner so as to get views of the informants regarding climate change. Observations were made on the ZOU modules to examine whether they had information on climate change. Modules are the basic texts that were designed to act as course guides. Observations were also utilized to find out if the regional centre as well as staff members and students were involved in any activities such as writing newspaper, magazine and journal articles, attending workshops and conferences on climate change.

DATA COLLECTION AND ANALYSIS

Data were collected in first semester of 2014 as students were coming to register. Completed questionnaires which had been hand-delivered to respondents were collected and interview data were transcribed by hand. Quantitative data were analysed by calculating percentages of respondents who ticked Agree, Disagree or Undecided on the Likert scale. Qualitative data from interviews were coded and indexed through intensive content analysis in order to identify

major themes (Krippendorff, 2004). Responses that diverged from the common themes were also identified and analysed on their own. Data from questionnaires, interviews, observations, and literature review were triangulated to deal with contradicting issues.

FINDINGS AND DISCUSSIONS

Table 1 showing the biographical data of the respondents to the questionnaire (Section A).

Gender	**Male 53**	**Female 35**	**Total 88**		
Status in ZOU	Student 58	Academic staff 14	Non/academic staff 16		
Years of staff member working for ZOU	Below 1 1	1-5 yrs 17	6-10yrs 9	Above 10yrs 3	N/A 58
Student Academic Year	Yr 1 20	Yr 2 10	Yr 3 8	Yr 4 26	Repeat 0	N/A 24

NB: N/A refers to respondents who were not students, for example staff members

Table 1 shows that there were more male than female respondents. There were 30 staff members and 58 students. Among the students, 6 were non academic staff members. Nine staff members had worked for ZOU for 6-10 years while 17 had worked for 1-5 years. Three had worked for ZOU for more than 10 years. Hence the study is likely to get balanced information from the respondents within the Region regarding opinion on the issues of climate change and natural hazards.

Table 2 showing responses to each item in Section B of the questionnaire (% rounded off)

Item	**SA**	**A**	**U**	**D**	**SD**	**NR**
1. ZOU has a role to disseminate climate change information to stakeholders.	48.9% (n=43)	36.4% (n=32)	2.3% (n=2)	4.5% (n=4)	6.8% (n=6)	1.1% (n=1)
2. Stakeholders should disseminate climate change information to ZOU.	35.2% (n=31)	38.6% (n=34)	9.1% (n=8)	8.0% (n=7)	5.7% (n=5)	3.4% (n=3)
3. Information on climate change is critical to ZOU staff members at work.	47.7% (n=42)	37.5% (n=33)	8.0% (n=7)	4.5% (n=4)	2.3% (n=2)	0% (n=0)
4. Information on climate change is useful to ZOU students.	59.1% (n=52)	32.9% (n=29)	2.3% (n=2)	0% (n=0)	2.3% (n=2)	3.4% (n=3)
5. ZOU stakeholders lack information on natural hazards.	19.3% (n=17)	26.1% (n=23)	20.5% (n=18)	14.8% (n=13)	2.3% (n=2)	17.0% (n=15)
6. Information on natural hazards is critical for the survival of the ZOU student.	27.3% (n=24)	13.6% (n=12)	5.7% (n=5)	1.1% (n=1)	2.3% (n=2)	50% (n=44)
7. I have adequate knowledge on climate change.	14.8% (n=13)	31.8% (n=28)	13.6% (n=12)	22.7% (n=20)	11.4% (n=10)	5.7% (n=5)
8. Climate Change should be incorporated in the University Curriculum.	58.0% (n=51)	25% (n=22)	6.8% (n=6)	1.1% (n=1)	4.55% (n=4)	4.55% (n=4)
9. I have adequate knowledge on natural hazards.	17.0% (n=15)	31.8% (n=28)	17.0% (n=15)	18.2% (n=16)	9.1% (n=8)	6.8% (n=6)

NB: NR means No Response or “Left Blank”

From Table 2 is observed that the majority of respondents (85.3%, n=75) agreed that ZOU had a role to disseminate climate change information to stakeholders. More students than staff members were affirmative on this issue. One student did not respond to item 1. When subjected to interviews it emerged ZOU was not actively disseminating information on climate change. Students and lecturers as well as support staff felt ZOU should have sessions where it disseminated information to its stakeholders such as the community of the City of Gweru. These could be small workshops for farmers so that they could have ways to adapt to the changing climate. Workshops could also be conducted with ward councillors and residents representatives on waste management issues. Observations revealed that only one workshop on climate change had been conducted by the Faculty of Science. This was at national level. The continued open burning of waste in central business district (CBD) of Gweru indicated that the community was unaware that this activity contributed significantly to climate change.

The study also aimed at establishing whether it was important for stakeholders working with ZOU could disseminate information to the university. In item 2 of the questionnaire it was observed that 73.8% of the respondents agreed that stakeholders should disseminate such information to ZOU. These results indicate that the respondents believed that stakeholders should disseminate the information to the university rather than the other way round although there could be room for collaboration. Information obtained through interviews showed that although there was this feeling there was nothing on the ground to show that organisations such as Environmental Management Agency (EMA), and Gweru City Council (GCC) had any memorandum of understanding with ZOU. Instead the cleansing superintendent at GCC revealed that the council had a working relationship with University of Zimbabwe that was located in Harare the national capital city. Besides only one cleanup campaign that was jointly conducted by ZOU, EMA and GCC there was nothing to show that there was collaboration between these organisations. Three respondents (3.4%) did not respond to item 2.

In item 3, 85.2% agreed that information on climate change is critical to ZOU staff members at work. All respondents responded to item 3. Most respondents to item 4 (92%) agreed that information on climate change was useful to ZOU students. Three respondents (3.4%) did not respond to item 4. During interviews some informants mentioned that there were certain practices such as burning of solid waste generated in the offices. This generated green house gases such as carbon dioxide which contributed to climate change. As students in higher education it was imperative for them to have a full understanding of climate change. Ordinary people regarded university students as fountains of knowledge; hence it was important for them to convey correct information. University students from ZOU were expected to contribute their knowledge in adapting to effects of climate change, as well as mitigating the progression of climate change. ZOU students and staff were expected to have information as this allowed participating in international conferences and workshops dealing with climate change issues. Universities were supposed to influence policy through papers and briefs. Both staff and students however revealed that they did not have information that enabled them to participate in policy making.

In item 5, 45.4% agreed that ZOU stakeholders lacked information on natural hazards while quite a significant number (17%, n=15) did not respond to this item. In item 6, 40.9% agreed that information on natural hazards is critical for the survival of the ZOU students and again quite a large number (50%, n=44) did not respond to item 6. Interviews conducted with both staff and students showed that although some of them had knowledge of natural hazards, others were not knowledgeable at all. They did not understand how climate change was associated with flooding for instance. In 2014 and 2015 Zimbabwe was exposed to serious cases of flooding (Jonga, 2014; Chidavaenzi and Nleya, 2015). University students from departments such as

Geography and Environmental Studies, Development Studies, Counselling, and Agricultural Management could play a significant advisory role in dealing with flood situation. They could assist with early warning systems, recovery and adaptation systems. Skills obtained during their time of study could be utilised for the betterment of the community. Observations however showed that students were generally not ready to participate in disaster management.

Items 7 and 9 were considered together as they were similar in one way or another. For item 7, 46.6% (n=41) agreed that they had adequate knowledge on climate change, and 34.1% (n=30) indicated lack of knowledge while 13.6% (n=12) were undecided. Five respondents (5.7%) did not respond to this item. There were mixed feelings for item 9, with 48.8% agreeing that they had adequate knowledge on natural hazards while 27.3% disagreed and 17.0% were undecided. Six respondents (6.8%) did not indicate their views. Generally students in Geography and Environmental Studies, Development Studies and Agricultural Management had a better understanding of the meaning of climate change compared to students from other departments. This was because they often interacted with the term climate change in some of their courses. It emerged during interviews with some students in the department of Records and Archives Management that there was need to impart knowledge on climate change to these students. The students defined climate change in the same way weather was defined. This misconception gave an impression that generally most students in the university whose programmes did not have a direct link with climate did not understand what climate change meant. It was probably certain that the majority of ordinary people lacked a clear understanding of climate change as well as its implications. This was an unfortunate situation as climate change was having serious impacts on the livelihoods and lives of people who were exposed to floods and droughts. A few students could articulate the link between climate change and natural hazards. It was therefore a major challenge when university staff and students lacked adequate knowledge on the subject yet society depends on them for explanations and solutions.

In item 8, 83% agreed that climate change should be incorporated in the university curriculum while 4.55% (n=4) did not respond. Interviews with both staff members and students showed that there was need to include climate change in ZOU curricula. Lecturers in Geography and Environmental Studies, Agricultural Management and Development Studies felt that climate change was a topical issue; hence it deserved to be treated as an independent course in each of the respective disciplines. They further argued that graduates from these disciplines were supposed to come out of university equipped with adequate information that was supposed to be used to improve lives and livelihoods of communities affected by climate change. They were supposed to conduct research to solve the challenges brought about by climate change. Lecturers from other disciplines such as Counselling, Media Studies and Education felt that certain courses within their programmes should have units devoted to climate change issues. This would give them the necessary knowledge to enable them to communicate climate change related issues in different situations. Observations made showed that only Geography and Environmental Studies had one course that specifically dealt with climate change and natural hazards. The module was called Environmental Hazards and Human Responses (HGES 208). Otherwise climate change was simply treated in passing in some of the other courses. The other programmes such as Agricultural Management do not have dedicated courses on climate change or natural hazards.

The study also utilised open ended questions (structured interviews) to elicit information from respondents. Respondents were asked to identify organisations that could partner ZOU in climate change issues. Only 46.6% were able to identify these partners. They mentioned EMA and the Gweru City Council, Ministry of Lands, Agriculture and Rural Development, Health Sciences, industries, other State Universities, farmers, parents, teachers, students, schools, different churches, political leaders, Meteorological Office, Non Governmental Organisations

and the general public. However, 53.4% had no idea. This is a serious state of affairs as students in tertiary institutions are expected to have an appreciation of issues surrounding climate change. The general knowledge in the area is important as it improves awareness levels on the subject.

In another question they were asked to provide the kind of information that should be disseminated to ZOU's stakeholders. The majority of respondents (39.7%) listed "any information on climate change, what it is, its impact, preparedness in events of disaster." Others (12.5%) pointed out that information on dangers of natural hazards and climate change and their solutions should be disseminated. Some respondents (13.7%) pointed out that information on rainfall and weather changes, plants production and agricultural practices should be disseminated while a few others (5.7%) mentioned curriculum gaps, policy and research issues, and keeping the environment clean as areas needing to be disseminated as well. The rest (28.4%) had no idea. The number that looked at curriculum gaps was rather small considering that this is a critical area. Research and academic papers are developed basing on the information that students and staff have on a specific domain such as climate change. Lack of specific information could have curtailed research and presentations on climate change by ZOU staff members and students in the Midlands Region.

Respondents were also asked to indicate how ZOU and its stakeholders should disseminate information on climate change. Some respondents (14.8%) felt that ZOU should have a Memorandum of Understanding (MOU) with organizations such as EMA, while 36.4% felt that ZOU should educate the public, staff and students through adverts, showcasing, workshops and seminars (36.4%). Some (10,2%) felt it was important to involve ZOU in climate change research and project implementation. Only 3.4% said that climate change should be included as a course in programmes such as Geography and Environmental Studies, Development Studies and Agricultural Management. They also felt that other programmes could have courses with chapters on climate change. However 35.2% of the respondents did not have an idea as to how information on climate change could be disseminated by the university. One lecturer in the English and Communication Studies has extensively written in newspapers on climate change. Although he was doing this in his personal capacity, his writings have inspired a number of students and staff in the region.

The respondents were asked to list any other comments or suggestions concerning climate change and natural hazards. The respondents (14.8%) pointed out that they needed more information about the topic and that there was need for further research and information sharing. As already pointed out earlier, some respondents (9.1%) said they needed to hold workshops or seminars with the City of Gweru or other interested parties in order to increase awareness among members of the public. Some (5.7%) echoed emotional sentiments that natural disasters such as the Tokwe Mukosi disaster in 2013-14 (Chikodzi and Mutowo, 2014) could have been prevented had relevant climate change and natural disaster information been sourced and disseminated in time, hence they proposed that ZOU should be a member of the Civil Protection Commission. Some (2.2%) mentioned that information should be disseminated through ZOU advertisements and sporting activities and even in the library. The idea of including this "important topic" in the university curriculum was also mentioned by 12.5% of the respondents. Thus everyone was considered to have a role to play as commented by 4.5 % of respondents. Some respondents (52.2%) had no idea.

The study made an important observation that no student in the region had written a dissertation on climate change. According to the lecturers, the level of competence for both supervisors and students to deal with the topic was rather low. One lecturer revealed that he was not confident enough to guide students in their research work. Although climate change was a topical issue students argued that they were not conversant with the topic and were therefore not comfortable

to do research in the area. This is unfortunate as climate change is a serious contemporary environmental problem. The ability by students to tackle the problem through dissertations or research projects could be used as a measure to gauge the level of general understanding of the issue. This could mean they are in a position to disseminate information on climate change to other stakeholders such as communities they will be working with.

CONCLUSION AND RECOMMENDATIONS

It is clear from the above discussion that both staff and students in the ZOU Midlands Region do not have adequate information and knowledge on climate change and natural hazards. This therefore limits them in their appreciation of the challenges posed by climate change. Although some members have taken the initiative to write about climate change the majority of the staff and students are still in the dark about the challenges. The university has not done much in terms of incorporating climate change into the curriculum. Research still lags behind yet universities should be torch bearers whenever a new challenge develops in the country or region.

The study therefore made two sets of recommendations, one directed at the Zimbabwe Open University as it has authority over the ZOU Midlands Region, the other at the ZOU Midlands Region since it is the study area. It is hoped that both sets will improve the appreciation of climate change in the university as well as the region. The following recommendations were intended for the university particularly the faculties and departments as they have the mandate and capacity to modify the curriculum among other things.

- The university should provide its staff and students with sound and academic knowledge which empowers them to deal with climate change and adaptation issues since these are a devastating reality in Zimbabwe and Africa. This could be done through a deliberate strategy to have courses and programmes dedicated to climate change. For example departments such as Geography and Environmental Studies, Agricultural Management and Development Studies could have courses specifically on climate change. Other disciplines such as Psychology, Media Studies and English and Communication Studies could have courses with units or chapters on climate change.
- The university should provide cutting edge scientific and social research on climate change and natural hazards so as to come up with solutions to problems posed by climate change. This will enable beneficiaries of the research to mitigate and adapt to challenges presented by climate change. The university should be an important hub in identifying and solving climate change challenges. This could be done by establishing a research institute in the university with the mandate to deal with environmental management issues such as climate change. The institute could actually offer research degrees such as a Master of Science in Climate Change. This will empower students and staff to deal with climate change from an informed position.
- Zimbabwe Open University should be a member of international communities which deal with climate and related issues such as the Applied Centre for Climate and Earth Sciences (ACCESS). The university can then access recent and relevant data on climate change.
- The five faculties in the university should complement each other and come up with a holistic approach in the study of climate change. This will bring about an interdisciplinary/ multidisciplinary approach to the study of climate change within ZOU. This will allow practitioners from programmes such as Psychology, Geography, and Mathematics and Statistics among others to engage in the study of climate change so as to have an understanding and appreciation of the problem from different perspectives. Members of the different departments in the university should share information, expertise and statistics on climate change/natural hazards. For example, the Maths and Statistics Department can use the

information to do modelling or time series analysis and use the results to predict when, why or how disasters will happen. Solutions for mitigation could then be provided. This could also serve as valuable community service as universities are required to do.

- The university should collaborate with universities in developed countries such as Belgian universities which include Haselt, Antwerp, Gent and Vrije which have advanced programmes in climate change. It becomes easy to send students and staff on exchange programmes.

The following recommendations were directed at the ZOU Midlands Region.

- The Midlands Region should take advantage of individual lecturers in the region who have been writing newspaper articles in their personal capacities to build the capacity of students and staff members to identify and solve climate change related problems. The staff members and students could be assisted by these lecturers to develop workshop, seminar and conference papers on climate change in the Midlands Region.
- Staff members from different disciplines should have collaborative research in climate change. This encourages cross pollination and consolidation of ideas.
- There is need to build environmental and climate literacy in all staff and students in the region as a way of capacitating them. This could be achieved by organising campus based initiatives such as workshops, seminars and conferences. The students should be involved in these initiatives so as deepen their understanding of climate change and adaptation. Students should have an opportunity to prepare research papers and present them at workshops, seminars and conferences.
- The ZOU Midlands Region has not been spared by the economic meltdown affecting the country. As such it should raise its own funds, as well as create synergies with critical stakeholders such as Environmental Management Agency to enable it to provide university service such as dissemination of information on climate change.
- The ZOU Midlands Region should also serve the communities around Midlands Province through short courses or awareness campaigns which will ultimately cushion people from climate change challenges.

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