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Small Scale Farmer's Attitude and Perceptions of Climate Change: An Exploratory Study

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Abstract:
Climate change and variability are as much of a reality as the very air we breathe yet most people do not acknowledge it as so, in spite of the fact that it is rocking the very foundations of African society as subsistence agriculture is not only the main economic activity but it is the very essence of livelihoods. Slight disruptions in climate then become a major cause for concern, much pain, and suffering and even in some circumstances death due to hunger and starvation as farming is a climate sensitive activity. These slight changes in climate affect rural populations the most yet they are least able to take them in their stride, adapt, adjust and move on. Even though this is a major concern this side of the planet, there is a dearth of information on climate smart practices that have been undertaken in this region, that can be embraced by farmers, or any indication that farmers are actually aware of the changing climate and are mitigating to it. To address this gap, this study looked at the perceptions of small scale farmers of climate change, the factors influencing adaptation and the adaptation strategies they implemented. The study was exploratory in nature hence had a leaning toward qualitative paradigm, hence the data was collected using interviews, and was analysed for thematic content using the nVIVO statistical package for qualitative data analysis. The data was collected at Nswazi village in Matebeleland south, a semi-arid region that is prone to semi drought conditions and is no stranger to the scourging sun, one of the major findings of this study was noted when the respondents were quizzed on climate change and immediately launched into along anecdotes about the position of the ''gods'' in their culture, which is indicative of the fact that to the African, everything is viewed through religious lens, the climate notwithstanding.

Keywords: *climate change, small scale farming*

1. Introduction

Climate change and consequent global warming are as much a part of our lives as the very air we breathe, oddly enough however, most individuals are not aware of climate change and hence are not cognisant of the fact that some of their behaviour thoughts and attitudes have a cumulative effect on the climate that is cause global warming. The psychological frame of mind an individual has towards climate change, mitigation and adaptation measures that they take then becomes an area of great interest if anything at all is to be done towards curbing the increase in global warming and minimising climate change

Scholars agree that anthropogenic climate change will cause theatrical revolutions in both the social and bio-physical systems that will interrupt food production, ecosystems, water services provision of environmental amenities and human settlements all of which are closely linked to human livelihoods (UNFCCC, 2005; IPCC, 2001, 2007; O'Brien &Leichenko, 2007; Mearns& Norton, 2010). These changes are projected to have transformations devastating implications for individuals, communities, regions and nations. In particular, poor and marginalised rural households that depend on natural resources that will bear the bulk of these widespread impacts, (Adger, 2001, 2003; Burton, Diringer& Smith 2006). The degree to which these impacts will be felt rests on the ability of the community region or nation to adapt and their capacity to do so (Shah, Fischer &Velthuizen, 2008; Yesuf et al., 2008; Mearns& Norton, 2010).

Even though there is substantial scientific doubt about the future course of climate change, its effects are already being felt and they will continue to increase with a view to '' ultimately'' affect the very genes of human (IPCC, 2007). Such impacts are inclusive of those that are already affecting infectious disease vectors, agriculture and human systems (Adger et al., 2007). For Africa, the impacts of these climatic condition changes may be more catastrophic than one can imagine mainly due to the interactions of multiple stressors, including extreme poverty, over-dependence on rain-fed agriculture, HIV/AIDS prevalence, insufficient public spending on rural infrastructure, poor data availability and quality, and knowledge gaps (UNEP, 2005; IPCC, 2007). The presence of all these stressors chips in, in the nurturing of a frail adaptive capacity, and thus may amalgam poverty for vulnerable factions in society.

Africa has been noted as the lowest emitter of greenhouse gases because it's part of the developing world and uses less carbon than other continents yet strangely enough Africa is worst affected by global warming as it brings with it other disasters like flooding, high mortality rates, and droughts which the continent is ill equipped to deal with. Polling data in African countries such as south Africa and online surveys with Africans have revealed that most do not know what on earth global warming is and actually believe that other human beings have nothing to do with their 'unfortunate circumstances' save for the 'gods' who are 'displeased' and who would like to be appeased (St Germaine 2010)

Even though climate change is a concern to the world at large, possible impacts are not homogeneous but are instead disproportionately dispersed, both within and between countries (Hunter, Salzman&Zaelke, 1998; O'Brien &Leichenko, 2008). In Zimbabwe, the eastern regions of the nation for example: Mashonaland East (Mash east) and Manicaland may experience a better than usual rainfall and consequent high crop yields whilst Matebeleland North and South experience conditions very much akin to a desert. Moreover, the differences in effects on humans contrast and are principally determined by geographical location, exposure to education, awareness and levels of income and demographic aspects like age and number of years spent in the farming trade (Hunter et al., 1998). Accordingly, Adger (2006) is justified in his view that exposure to climate change is not just a function of geographical location and reliance on natural environmental resources, but also of institutional, psychological and socio-political factors that contribute to how climate change corollaries unfurl. Mannke, (2011) and Eriksen et al., (2008) voice that often, the most exposed are the already marginalised and disenfranchised poor, who become the front line in terms of expose and yet are the very least empowered and equipped to mitigate, adapt and diversify their livelihoods. Ribot 2010 and the FAO (2008) also posit that near to the ground revenue individuals that rely on subsistence farming face increasingly harder circumstances yet it is next to impossible for them to adapt in a bid to combat the changes in their production bases. (Moser & Norton, 2001) go on to note that these environmental stresses then act as one of the factors that shove these already marginalised peoples over the edge, into poverty that acts as a violation of their human rights

Milder, Majanen&Scherr, (2011) and theIPPC (2007), note that variability and adaptation to the changing climate is viewed as a chief indicator of response to policies. Inquisitions into this indicate that subsistence farming a member of the low input farming systems group in agriculture, has unsustainably decreased substantially in marginal areas there by diminishing the already feeble natural resource base, which is also making lessening rural poverty but a dream for many a development practitioner. Hence without mitigative adaptation, climate change will force most rural communities to survive on a razors edge, yet with adaptation expose can not only be lessened but in some cases obliterated(Adams et al., 1998; FAO, 2008).

Leading historians in Africa, Zimbabwe included argue that Africans constantly show a very high level of awareness especially of the weather as it is a direct influence of their day to day life and in turn their immediate future, for instance if it does not rain then there will be no food consequently deaths due to drought, deaths both of livestock, crops and in some instances people. This would then be a classic sign that it is time to go and seek the opinion of the 'gods' as to what is to be done and how it is to be done. This is done by visiting a Naanga/ Inyanga (traditional healer) who gives the go ahead for the famous blood sacrifices (of animals), beer-making and rain making ceremonies at shrines round the country such as the one at Njelele (Njobaru and Muusa 2011, Khumalo and Nyathi 2009, Mudzingwa and Moyo 2009)

In the few instances that research has been conducted with and on Africans concerning global warming, it was noted that most had no idea what global warming is and what could have possibly caused it save for the displeasure of the 'gods' who happen to control every facet of an ''Africans'' life, and this displeasure is often illustrated by natural disasters and sudden deaths of animals and crops and atonement is a must so as to put things right it is never about carbon emissions or the cutting down of trees which they have been doing for centuries with no problems at all.

In the African context the weather is a phenomenon that is best explained using spiritual terms in-fact everything has spiritual and not scientific roots. In the view of the researcher this presents a significant mile stone in the path of research with African respondents as if they are not educated they are quick to attribute everything to 'chivhanu' or 'midzimu/ amadlozi' for the cultural traditionalists and God/ mwari/ unkulunkulu for the religious as the source of both their joy and their woes. As a consequence there is a large discrepancy between the perception of the African and any other person in terms of the weather or anything else for that matter. Scholars like Niger 2010, Moyo and Mudzingwa 2010, UNFPA 2011, among others hold the firm view that to study the perception of a traditional African on a view one must first understand that all of their views are firmly rooted in religion and are starkly centered on it. Hence for one to objectively study perceptions of climate change especially among the rural population one must have an understanding and a respect for the religion of the population while having a scientific view of the problem (what grounded scientific theory says about the origins of climate change) which are a mile divorced and have to be married at a certain level in order to be able to change African behaviour towards climate change issues o they can be able to take adaptive mitigation action which in Moyo and Mudzingwa (2010)'s view will not happen as long as they still feel that the terrible weather is the wrath of the 'gods' for them to bear.

1.1. Aim of the Study

The aim of the study was to explore the attitudes and perceptions of scale farmers in Nswazi village towards climate change. It sought to ascertain the farmers' views of the environment. As well as look at the factors influencing their perceptions.

1.2. Methodology

The study used a qualitative approach to explore the attitudes and perceptions of farmers. Specifically, an interpretive phenomenological approach was adopted. This approach is appropriate for studies to identify phenomena as they are perceived by the actors (Lester,1999).

21 small scale farmers were purposively selected to participate in the research and their ages ranged from 34-80. Participants were engaged in in-depth interviews., that were recorded and transcribed verbatim. Permission for the study was sought from the village headman of Nswazi village. Each participant signed a consent form. The interviews were scheduled for a time when participants felt comfortable to talk to researchers. Debriefing was done on the purpose of the research, procedures and rights of the participants.
Content analysis was used to analyse and draw themes from the data. This involved reading out each interview question to identify potential codes and creating a coding system.

2. Results

Farmers indicated that they had varying perceptions of climate change in terms of origins, causes effects and the mitigation behaviour that they felt was in their power to do. This brought about supernatural beliefs as a theme and subthemes like climate change as a curse, punishment and as penance for their sins.

2.1. Supernatural Beliefs

One of the central, fundamental beliefs that make one a true African is religion, beliefs in the supernatural whether it is from one end of the spectrum with God, for the other with the ''gods'' or ancestors, religious beliefs are intertwined with our very existence and are part of the integral components that form African identity. Beliefs in the supernatural can be defined as complete trust in a higher power that is of a spiritual nature not only to have your best interests at heart but to be actively involved in one's day to day living, ranging from every breath taken, major decisions like family planning and even the climate. Hence it did not come as a surprise when the respondents were asked to comment on climate change that the gods immediately became the foci of the discussion. The ''gods play a very integral role in the Africans very existence as evidenced by respondents who said

- ''our gods control and are in charge of everything that has to do with us, the weather not withstanding''

Meaning that everything that happens to the African, be it fortune or misfortune alike their gods are at the fore front of it all. Those same sentiments were shared by the entire group that argued that the gods controlled everything and it would be a fool's errand to try and either prove or convince them otherwise.

2.2. Climate Change as a Curse

The respondents believe that the climate is indeed changing,

- '' the rate however is not measured by or using scientific means but is influenced by the rate, breath and scope of the lawlessness of the citizens.''

Consequently the climate was changing because of the lawlessness of the said citizens and is a curse that comes about as a result of their behaviour. One respondent even went on to voice that the climate was changing as a result of the

- ''recent spike in crime rates especially involving bestiality in the region, and the subsequent lack of penance for the said sin by letting the offenders continue to live in the area.....the laws of the gods are being violated hence the lack of rain and the heat waves are a curse''

Some went on to assert this point by arguing that the gods,

- '' because they cannot hold outright battles with mere men deal with indiscretions using curses and it is the job of the villagers to note changes in their environments that may denote the presence of these curses and do something about it or else they may grow worse by the day''

. The villagers also noted that evidence of the presence of a curse is also seen in the recent

- '' Mass 'death' of livestock under mysterious circumstances, poor crop yields or the destruction of their entire crops in the fields either due to veld fires or the unwavering sun that makes the conditions not conducive for crops''

Consequently the members of the community view climate change not only to be as a result of a curse from the gods but to be the actual curse hence they have to endure it all the while mapping a way to deal with the said curse so the climate may go back to normal which would ultimately involve a cleansing ceremony to, purge out sin and realigning the community with god and his agenda and also by living at one with nature in the way that our ancestors did

2.3. Climate Change as Punishment

The respondents also indicated that they viewed climate change as punishment. This was also evidenced by a group of respondents that said that

- '' the gods actively use the climate as a means of expressing their displeasure''

That would otherwise go unnoticed if done or said in another way as

- ''what better way would there be of stressing a point than crippling the very foundations of life''

These would be agriculture and food production to the African. It was also stressed that

- '' the gods do not do this harm anyone but to indicate that they have been wronged or sidelined.''

The older respondents also launched into a very long analogy of their history that coincided with meteorological data for instance how there was a spike in murders, and dismissals from work for a large number of people whose very lives were disrupted, the ripple effects of that was that there was a spike in suicides and a general rise in crime rates that also led to the 1992 drought, after a special rain making ceremony that also served to atone for sins was conducted the seasons went back to normal.

2.4. Climate Change as Penance

The respondents not only viewed climate change as a curse or punishment but also viewed it as penance. Penance can be defined as punishment one suffers willingly to show that they are sorry for their actions it is synonymous with such words as sacrament, reparation, atonement and apology all of which imply that the ''body'' that is doing it does so of their own free volition hence they will do nothing to mitigate the penance including avoiding it.

Consequently the respondents indicated that they were aware that the climate was changing, that it was their fault but where not going to do anything about it as it was supposed to happen so that they curse will be lifted. This is evidenced by the respondents who said that

- ''The climate is changing as a result of our actions and the actions of the community at large, the lack of rain and the unending heat waves are the curse and our penance is to live this present circumstances until such a time as the gods feel that we have suffered long enough, have mercy and they lift the curse''

Other respondents likened the climatic conditions to

- '' a father's righteous indignation and his right to discipline his son, no one should interfere least they make it worse for the son''

Showing that they believed the climate was their fault and their cross to bear. And to attempt to do anything about it would make the gods angrier and result in an extension of the curse with catastrophic effects on them that may include death and desertification of their lands

Consequently the respondents as shown above perceive climate change through religious lens because of culture. They indicated that climate change was as a result of the mood that their god was in, which is a consequence of their actions. Thus if the actions are punishable, the climate changes to indicate this and they must either pay their penance to avert this or carry out an appeasement ceremony to fix things Risk perception

Risk perception simply put is the subjective judgement that individuals have concerning attributes, characteristics and extent of a risk that is commonly used in view of natural environment hazards. Risk perception maintains that when faced with the challenge of simplifying data, arrays of cognitive heuristics are implemented. These include religious beliefs, attitudes, previous information, availability heuristics and other biases. These proved to be a major factor among the respondents in the way that they view climate change and their vulnerability to it. As evidenced by most of the respondents that indicated that climate change to them was not a matter of '' scientific fact'' but of a '' mixture of cultural and traditional beliefs, knowledge thoughts and attitudes''

Most of the respondents even though are affected by climate change on a daily basis did not seem to see themselves as at risk to climate change as in their subjective view the

- ''gods would not go so far as to kill us all in a bid to express anger.....hence we rest assured that with every challenge that the climate brings there is a way for us to survive, the minor changes that some of us have implemented in our society will go a long way in buffering the effects, even though it is an uncomfortable place to stay in we will survive, our gods willing of course''

This shows that their risk perception is very low in spite of the presence of threats to their very livelihoods. Consequently even though these same respondents are aware that the climate is changing they do not believe that it poses significant threats to their livelihoods.

3. Conclusion

The study revealed that Africans have a unique way of seeing and experiencing phenomena that is different from all other people as everything is viewed as having spiritual roots, is caused by the spiritual and can be fixed using prescribed ways of communing with the spiritual weather notwithstanding, next that the climate is changing and individuals are aware of it and do one of several behaviors to protect themselves from the far reaching arm of the climate hence adaptation and mitigation behavior is stalled or encouraged by one of by several factors, in addition that there is limited knowledge on facts on climate change.

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