



Citizens' views on Climate Change: Zimbabwe compared with SADC countries.

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Background:

One of the most pressing problems facing Zimbabwe, and all SADC countries in the coming years will be climate change (Brazier. 2017). The long-term consequences of the changes expected by the IPCC (IPCC. 2014) will not be uniform globally, and some regions of the world are expected to experience worse conditions than others, although this is merely a matter of degree since all countries are going to be challenged.

For Zimbabwe, the predicted consequences can be briefly summarised:

In Zimbabwe, climate change will cause average temperatures to rise by about 3° before the end of this century. Annual rainfall could decline by between 5% and 18%, especially in the south. Rainfall will become more variable. There will be an increase in droughts, floods and storms. This will affect Zimbabwe's food security, health, energy supply and the economy." (Brazier. 2017)

Internationally, the requirement for dealing with the problem of climate change is for countries to adopt two kinds of strategies, "mitigation" and "adaptation". Whilst "mitigation" may be a very important strategy for the heavily industrialised countries producing high levels of carbon and heat, there will be very little that most SADC countries (South Africa apart), and even most African countries. Zimbabwe contributes very little to the global burden of heat and carbon, although changing energy use and some agricultural practices will help. Therefore, Zimbabwe, in common with most African countries, will be faced with reliance on "adaptation" as the major strategy going into the future (GoZ. 2014).

Adaptation will require changes in the behaviour of citizens, and the changes required will obviously require knowledge and understanding of the problems, and the necessity for behavioural change. Adaptation strategies will also be very different for different groups. For example, shortages of water or erratic rainfall does not have the same consequences for rural and urban citizens: most rural Zimbabweans are "dry-weather" farmers, reliant on rainfall, but, to some extent, probably less affected by water for daily household use. Urban citizens are wholly reliant upon piped water, especially in large conurbations, and insufficient water storage, due to dams not filling, can have severe effects in the urban setting. There will obviously be many other differences between the two populations, but the point to make here is that there will be differences across different groups. This is well understood and covered in most climate change policies produced in the region (Lesolle. 2012), and is covered in Zimbabwean policies addressing climate change (GoZ. 2014).

One of the recommendations for dealing with climate change involves explicit reference to "citizen awareness in SADC and participation that sustain and prioritize climate change actions" (Lesolle. 2012). This, of course, is wholly praiseworthy, but we must ask a number of questions.

Firstly, is a question about understanding climate change: to what extent do SADC citizens understand climate change and its possible causes and effects? Obviously fostering "citizen awareness" can start from the basis that citizens are well informed through degrees of understanding to citizens having little or no knowledge. For example, there is scientific evidence about changes in climate in SADC countries, and this information obviously will drive the decision makers, but to what extent does this information mirror the understanding of

ordinary citizens. To take one example, the information on rainfall (Table 1), a crucial (and “hard”) variable in the livelihoods of many citizens in SADC that were reliant on dry-weather agriculture. If there was clear evidence of changes in something as visible and tangible as rainfall, we might expect ordinary citizens to be aware of these changes.

Table1: Country-specific rainfall trends in southern Africa <i>[Table adapted from Davis-Reddy, C.L & Vincent. K (2017), Climate: Risk and Vulnerability. A Handbook for Southern Africa.]</i>	
<p>Botswana: Rainfall data between 1975 and 2005 indicate a trend towards decreased rainfall and the number of rainy days throughout the country.</p> <p>Malawi: Inter-annual rainfall variability is very strong and studies have found no evidence from rainfall records (1960-2000) of a change in rainy season totals, season length or duration of dry or wet spells.</p> <p>Namibia: While data from 1901 to 2000 show no directional change, trends based on rainfall station data between 1960 and 2006 have indicated shorter rainfall seasons in most regions of the country; a decrease in the number of consecutive wet days; and an increase in measures of rainfall intensity.</p>	<p>South Africa: Between 1960 and 2010 decreases in rainfall and the number of rainfall days have been observed over parts of the country; positive trends in annual rainfall totals over the southern interior of the country and a drying trend in the north and northeast were observed over the period 1921 to 2015.</p> <p>Tanzania: Significant decline in annual rainfall between 1981 and 2014, with greatest decreases observed in the southern region of the country.</p> <p>Zambia: Decline in rainfall between 1960 and 2006 over the country largely due to decrease in summer rainfall.</p> <p>Zimbabwe: Some studies have concluded that average rainfall has declined, but more recent studies using weather station records ranging from 1941 to 2000 from across the country have not found significant trends.</p>

The available data on these seven SADC countries shows decreased rainfall in Botswana, Tanzania and Zambia, whilst the picture is mixed for Namibia, South Africa and Zimbabwe. However, Zimbabwe apart, the evidence suggests that there is evidence for climate change, and, so, the question here is to what extent have any of these changes been observed by ordinary citizens.

Secondly, and this may be very important in populations with a high degree of poverty, including rural poverty, do citizens care about climate change in the context of the high degree of hardship that they deal with every day? For example, it can easily be assume on the basis of scientific knowledge that rural citizens need to change the crops they grow because of climate change in order to maintain food security, but this has implications for earning income through cash crops. One can expect that requiring such changes make rational, scientific sense, but little sense for family that needs to earn money for health, schooling and the like.

Thus, it would seem important to have some sense of the view, bottom-up, of the ordinary citizen, and have some grasp of what they know already. This will take detailed research, but here we were interested to find out from existing information what we already know about citizens’ views about climate change.

The Afrobarometer Round Seven (2017) asked a number of questions about climate change for the first time, and we used these questions to see how countries in the SADC region were

similar or different. We also undertook a more analytical look at Zimbabwe in particular, and looked at a number of variables that might affect attitudes to climate change.

Methods:

We used the gross data from the Afrobarometer online database. For the comparative analysis, we chose nine countries from the SADC region that has participated in Round Seven: Botswana, Lesotho, Malawi, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

We chose five of the climate questions from Round Seven:

- *In your experience, would you say climate conditions for agricultural production in your area have gotten better, gotten worse, or stayed about the same over the last 10 years, or haven't you heard enough to say?*
- *In your experience, over the past 10 years, has there been any change in the severity of the following events in the area where you live? Have they become more severe, less severe, or stayed about the same? Severity of droughts*
- *In your experience, over the past 10 years, has there been any change in the severity of the following events in the area where you live? Have they become more severe, less severe, or stayed about the same? Severity of flooding*
- *Have you heard about climate change or haven't you had the chance to hear about this yet?*
- *What does the phrase "climate change" mean to you?*

For the Zimbabwe study, we converted all the climate change questions into binary variables, and analysed these against the variables of residence (rural or urban). We also included a measure for "access to news" (5 items from the Afrobarometer, summed), a measure of "activism" (7 questions from the Afrobarometer on contacts with duty bearers, summed), a measure of "ownership" (6 questions from the Afrobarometer about items owned, summed), level of education and employment.¹

We chose the indicator, *access to news*, as one possible measure for understanding how citizens get their information generally. This was to test whether this affected knowledge about climate change. There were five possible sources of information canvassed in the Afrobarometer: newspaper, television, radio, internet and social media. Obviously these sources of information are linked to the material status of citizens, for which we used the indicator *ownership*: own a radio, television, motor car/motor cycle, computer, mobile phone, and bank account. We also included the measure of material well-being, *lived poverty*, as a check on the rural/urban split (Afrobarometer. 2004). Poverty is not confined to the rural areas in contemporary Zimbabwe, and it might be the case that poverty and residence (*rural* versus *urban*) might be conflated in views about climate change: we thus wanted to be sure that these could be separated.

Finally, we used the indicator, *activism*, in order to test whether duty bearers might be a source of information about climate change. This was predicated on the understanding that, since 2015, duty bearers have been provided with a monograph on climate change, specifically tailored for them (Brazier. 2017). This was an expanded version of a shorter text developed for

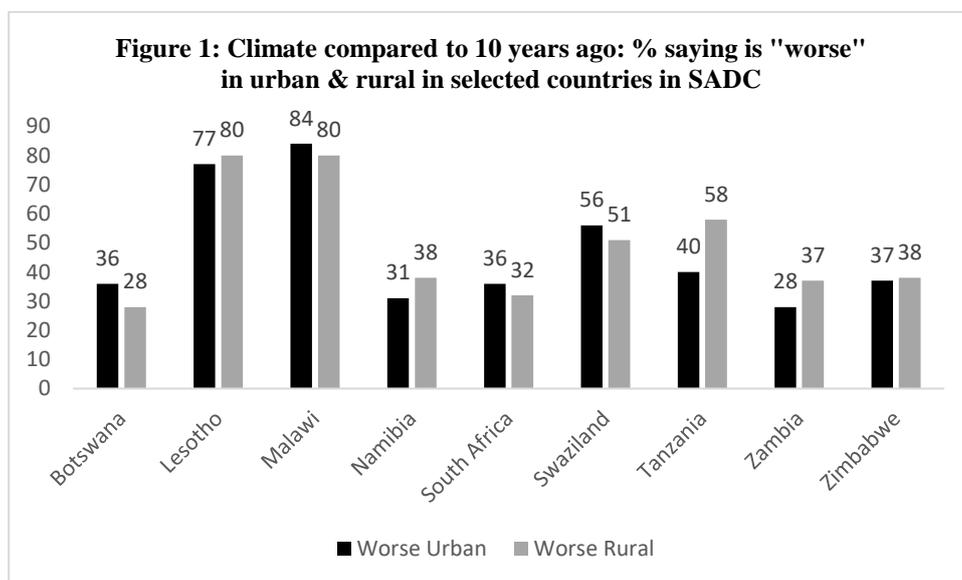
¹ These are all measures used in previous RAU research on citizenship. See, for example, RAU (2018), *Women and Social Capital in Zimbabwe: A Statistical Analysis*. February 2018. Harare: Research & Advocacy Unit

the same purpose. The list of potential duty bearers was taken again from the Afrobarometer: local government councillors, MPs, official of a government agency, political party official, traditional leaders and religious leaders.

The data were entered into SPSS (20). We did cross-tabulations for the comparisons of SADC countries. For the Zimbabwe data, we then did correlations and a test of means for differences between rural and urban respondents.

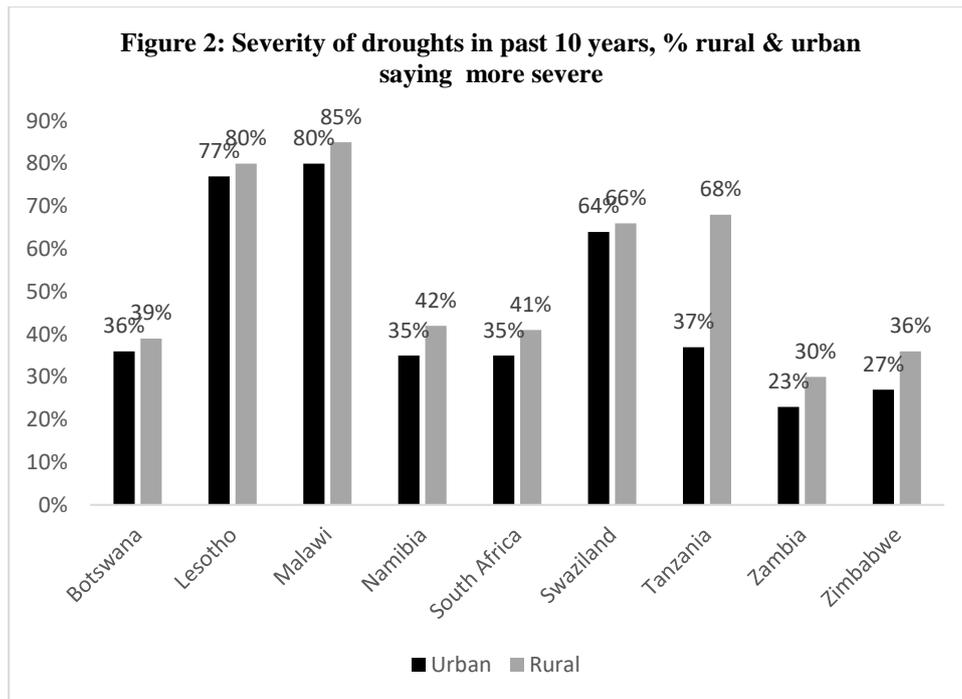
Views on Climate Change in SADC:

We first examined whether SADC citizens felt that there had been changes in the climate over the past 10 years. The Afrobarometer question asked respondents whether they thought that the climate was better or worse than ten years previously (Figure 1).

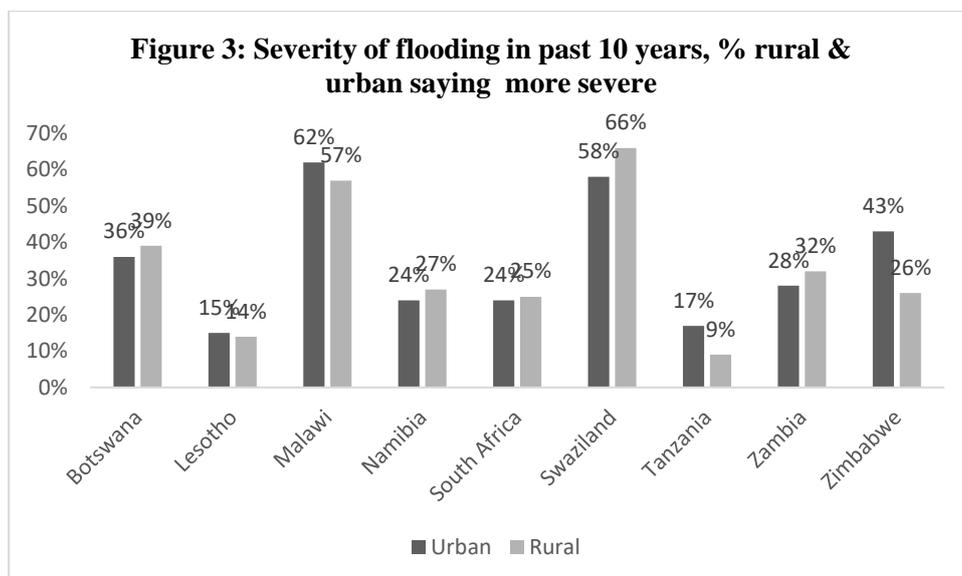


There is considerable variability across the countries, with large numbers from Malawi and Lesotho seeing climate having worsened, but, as seen in Figure 1, this does not accord with the observed facts on rainfall for Malawi.² Thinking about the rainfall data (Table 1), SADC citizens do not as a whole see climate as having changed much, and there are minor differences between rural and urban people. It might be expected that rural folk would have noted changes given their reliance on rainfall and the clear evidence that the rainfall patterns in the countries for which we found data have changed over the years.

² There was no data available on Lesotho or Swaziland.



The picture is very different when we asked the specific question about drought. Southern Africa has been affected by periodic and severe droughts in the past two decades, the most recent being one in 2015/2016.³ As seen in Figure 2, respondents from Lesotho, Malawi, Swaziland and Tanzania all think that droughts have been more severe, and, interestingly, Tanzania apart, there are minimal differences between rural and urban respondents.

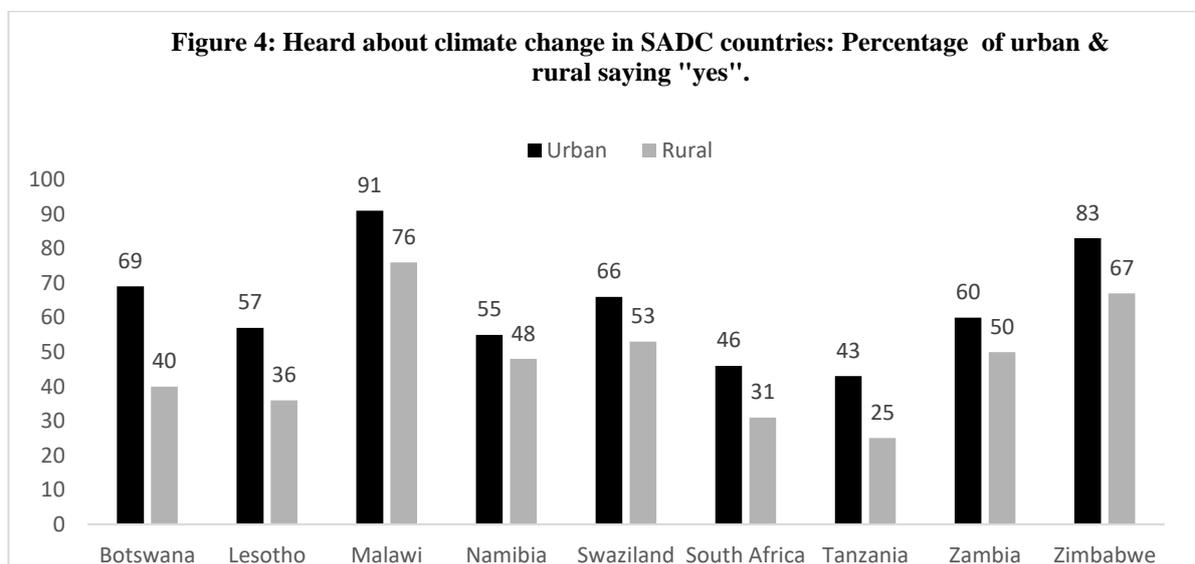


³ Southern Africa still battles to recover from drought. ReliefWeb, 6 February 2018. [<https://reliefweb.int/report/world/southern-africa-still-battles-recover-drought>] Accessed on 7 February 2019.

The picture is even more confusing when asked about “flooding” (Figure 3). Malawi and Swaziland respondents feel that flooding has worsened in the past ten years, but none of the others. There is also the anomaly that urban Zimbabweans, and, to a lesser extent, Malawians, are more likely to feel that flooding has worsened in comparison with their rural counterparts, when the hard evidence is that Cyclone Eline in 2000 deeply affected rural populations in Mozambique, South African and Zimbabwe⁴.

Once again, there is also the interesting finding that, Zimbabwe apart, there are no material differences in the views of rural and urban citizens in SADC. There is a trend in some of the countries – Botswana, Namibia, Swaziland and Zambia – for rural citizens to see flooding as having worsened, but the differences between rural and urban are very small.

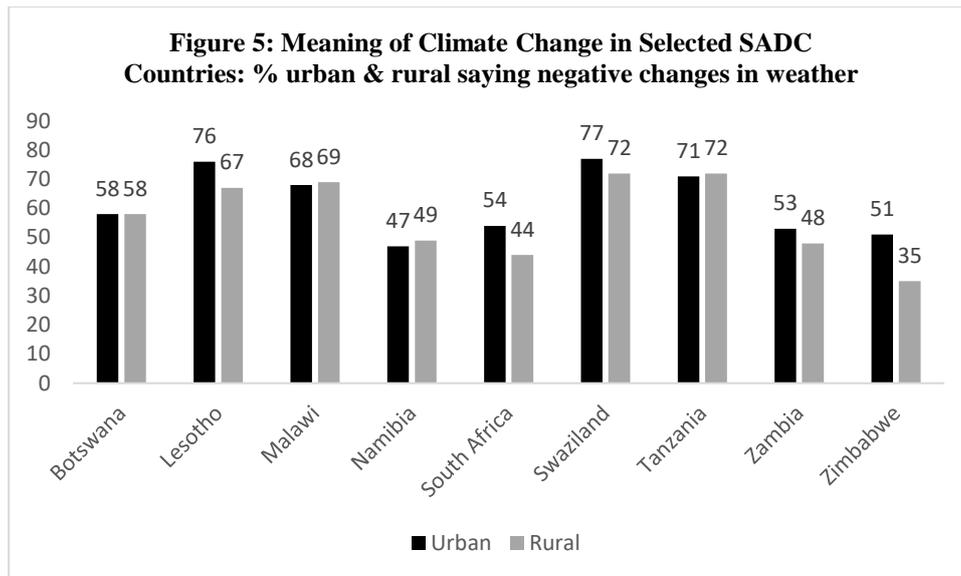
Perhaps this is all due to the fact that weather and climate change are not seen as belonging to the same universe of discourse, and this is given some weight through asking respondents about climate change explicitly. For example, questions about drought or flooding may be seen as weather events that are not related to climate, and climate means something else. So, asking the specific question about their knowledge may shed some light here.



As seen in Figure 4, clear differences between rural and urban folk emerge when the asking knowledge question.

Firstly, urban folk are significantly, and for every one of these countries sampled, more likely to have heard about climate change. For every country, South Africa and Tanzania, a majority of urban citizens have heard about climate change, but it does seem surprising that urban South Africans, in one of the most sophisticated countries and with an enormous media capacity, should not be the most knowledgeable in the SADC region. However, this anomaly continues when asking the question about the meaning of climate change.

⁴ *Assessment of the Impact of Cyclone Eline (February 2000) on the Food, Agriculture and Natural Resource Sector in Zimbabwe*. Agritex-NEWU-Ministry of Agriculture of Zimbabwe. April 2000. [<http://fews.net/sites/default/files/documents/reports/1000050.pdf>] Accessed on 7 February 2019.



As seen in Figure 5, the differences between rural and urban largely disappear in response to this question, both groups seem to be clear that climate change is negative, and there are still differences between all the countries on average. Large majorities in Lesotho, Malawi, Swaziland and Tanzania are more likely to see climate change as negative as citizens in Namibia, South Africa, Zambia and Zimbabwe.

Overall, it is evident that there are differences in the view of citizens both within and between SADC countries.

Firstly, five out of the nine SADC countries (Botswana, Namibia, South Africa, Zambia and Zimbabwe) do not think that the climate has worsened over the past 10 years, but the rainfall data indicates that it has in fact worsened in Botswana, Namibia, South Africa and Zambia. Malawians do think that it has, but the “hard” data, rainfall, suggests that it has not.

Secondly, the same five also think that there have not been worse droughts in the past decade, and, in respect of flooding, this same five, and Lesotho, think that flooding has not gotten worse. This is interesting in the light of the evidence of the severe effects of Cyclone Eline on South Africa and Zimbabwe in 2000, and the very severe drought in 2015/2016, which experts suggest affected 41 million in the SADC region.

Thirdly, it is encouraging that majorities in most countries have heard of climate change, and most see this as a negative change. However, the understanding is greater amongst urban rather than rural residents, and, surprisingly, lowest in South Africans, whether rural or urban.

Of course, it is very hard to generalise on such gross data – only five questions – but the findings are interesting and suggest the need for a broader examination of the factors behind an understanding of climate change its effects. We thus attempted to get a more nuanced understanding for one country, Zimbabwe.

Views on Climate Change in Zimbabwe:

The methods used in examining Zimbabwe and climate are described above.

The first analysis was to look at the associations between the chosen variables. As can be seen in Table 2 (over), the standout association is between the climate score – *heard about climate*

change and *climate changes are negative* – and other questions on climate (climate worse than 10 years ago, and droughts and flooding is worse), but also with being male (gender), having higher levels of education, and access to news. All seems to make good common sense, and fits with the picture from the regional comparison: Urban Zimbabweans have greater access to information, hence are better informed about climate change.

Table 2: Correlations between indicators.⁵

Indicator	Correlates
Climate score	Male (0.21)**; Radio news (0.16)**; Television news (0.2)**; Newspaper news (0.19)**; Internet (0.25)**; Social Media (0.23)**; Own television(0.07)*; Own transport (0.09)*; own computer (0.12)**; Own bank account (0.06)*; Employed (0.11)**
Activism	Older (0.19)**; Radio news (0.11)**; Local councillor (0.71)**; MP (0.68)**; Government official (0.57)**; Political party official (0.68)**; Traditional leader (0.67)**; Religious leader (0.61)**

Activism is a property of older, rural Zimbabweans, but has no relationship to climate change. As we pointed out, duty bearers across the country were provided with comprehensive information in the form of a monograph on climate change (Brazier. 2015). It is interesting therefore that the indicator for climate change, *climate score*, was correlated only with government and political party officials.

Given that there seem to be such consistent differences between rural and urban citizens in the country comparison as well as appearing again to be significant for Zimbabwe, we decided to test this difference explicitly. The working hypothesis was that urban Zimbabweans should be more aware of climate change than their rural counter-parts. Rural Zimbabweans are much more likely to have contact with duty bearers – are “active citizens” – but it does not seem that this contact results any handing on of information about climate change. This is an inference, however, and more research on the duty bearer/rural citizen interface could reveal whether this is so.

Table 3: Testing the difference between rural and urban Zimbabweans in their view about climate change.

	Urban	Rural	df	t	Sig. (2-tailed)
Access to news	2.20	.80	1198	19.419	0.000
Activism	.69	1.23	1198	-6.569	0.000
Climate conditions compared to ten years ago	.36	.38	1198	-.694	ns
Severity of droughts	.27	.37	1198	-3.383	0.001
Severity of flooding	.42	.27	1198	5.597	0.000
Heard about climate change	.83	.67	1198	5.852	0.000
Ownership	1.04	.57	1198	7.018	0.000
Employment	.17	.11	1198	3.012	0.003

This hypothesis is confirmed in most respects. Urban Zimbabweans are more likely to have *heard about climate change*, probably because they have greater *access to news*, and being

⁵ Correlations: **significant at p=0.01 level (Pearson’s *r*); * significant at p=0.05 level (Pearson’s *r*)

materially better off through being more likely to be employed. This again seems a very common sense finding, as does the finding that rural Zimbabweans see droughts as having got worse over the past 10 years. However, it is surprising that rural people are less likely to see flooding as having worsened over the past 10 years. Of course, *Cyclone Eline* had a strong local effect in Zimbabwe, mainly in parts of Manicaland and Masvingo, and those with access to news might have got a better picture of the disaster. Rural folk do mainly get access to news through the radio and this event would have been covered on radio, as it was one of the large natural disasters to have affected the country.

The major point to make here is that the more detailed picture on Zimbabwe amplifies the findings on the country comparisons, but also shows the important differences between rural and urban Zimbabweans.

Conclusions:

The available scientific evidence indicates that Zimbabwe, and much of sub-Saharan Africa will be subjected to very adverse climate conditions in the coming decades (Brazier. 2017). Zimbabwe will not escape this, and, despite the attention given by the Zimbabwe government to climate change (GoZ. 2014), citizens do not seem to have much understanding.

The first thing to note from these findings are the comparative differences between the SADC countries included in the study. Using rainfall changes as a hard indicator of changes, SADC citizens have widely differing views on whether changes have taken place or not that are at variance with the facts. For example, Malawians think that the climate is worse than 10 years ago when there is no evidence that rainfall has changed, and those from Botswana, Namibia, South Africa and Zambia think that things have not got worse in contrast to the facts.

Secondly, it is evident that in virtually all the countries more urban citizens have heard about climate change than their rural counterparts. This seems due to the greater availability of information for the former, and this seems obvious. There is less difference between the two groups in understanding that climate change will have negative consequences.

However, this is a very restricted set of questions from which to draw strong conclusions about citizens understanding about climate change, and suggests that there does need to be a closer examination about attitudes to and knowledge about climate change. We attempted to examine this a little more deeply using the fuller Afrobarometer data on Zimbabwe.

This confirmed most of the findings from the SADC countries comparison, but some flesh on the general findings.

Firstly, understanding climate change, measures as the *climate score*, was significantly associated with *access to news* (radio, TV, newspaper, internet and social media), *ownership* (own television, transport, computer and bank account), and being *employed*. The advantages of what might be termed “middle class”, or the lack of *lived poverty*, are obvious.

Secondly, and in common with other Zimbabwean studies, *activism* is a property of rural Zimbabweans. *Activism* is significantly associated with being *older*, getting news from the *radio*, and having contact with a wide range of officials and public agents (Local councillors, MPs, government officials, political party officials, traditional leaders, and religious leaders). This association with rural residence was confirmed through hypothesis testing, but there were some very interesting differences.

As can be seen in Table 3, urban residence was significantly related to *access to news*, *heard about climate change*, *ownership* and *employment*, but, interestingly, also to beliefs that *flooding* had been

worse than 10 years ago. Rural residents were *activists* and had beliefs that *drought* had been worse than 10 years ago. We might speculate that the differences in views about flooding and droughts reflect better news about Cyclone Eline for the urban folk, whilst drought would have been part of the lived experience for many rural folk. The frequently found differences between rural and urban Zimbabweans holds as much for climate change as it does for “risk aversion” (Masunungure et al 2016), agency (RAU. 2019 (a)), and religious affiliation (RAU. 2019 (b)).

It is evident that it will take more than a few questions in an Afrobarometer survey to unpack what ordinary citizens understand about climate change. It does seem important to understand deeply their knowledge, beliefs and agency in respect of climate change, especially those living in the rural areas of Southern Africa for they will endure the most of all the changes. Women, as pointed out by Brazier (Brazier. 2015) will be particularly at risk.

There will be significant changes to the lives of Southern African citizens in the coming decades, and the abiding lesson for all policies, whether developmental or mitigatory, is that they rarely succeed without the full participation of those being affected. As we hope we have shown, we know too little about how ordinary citizens think and feel about climate change, and this should be a priority of some urgency.

References:

Afrobarometer (2004), *Lived Poverty in Africa: Desperation, Hope and Patience*. Afrobarometer Briefing Paper No. 11.

Brazier, A. (2017), *Climate Change in Zimbabwe: A Guide for Planners and Decision Makers* (Second Edition). Konrad Adenauer Stiftung.

GoZ (2014), *National Climate Change Response Strategy*. Harare: Government of Zimbabwe. [www.ies.ac.zw/downloads/draftstrategy.pdf]

Intergovernmental Panel on Climate Change (2014), *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report*. IPCC: Geneva.

Lesolle, D. (2012), *SADC Policy Paper on Climate Change: Assessing the Policy Options for SADC Member States*. SADC .

Masunungure, E., Reeler, A., Kokera, R., Mususa, D., Ndoma, S. & Koga, H (2016), *Are Zimbabweans Revolting?* March 2017. MPOI & RAU.

RAU (2019) (a), *What Determines Agency in Young Zimbabwean Women? A Preliminary Investigation*. January 2019. Harare: Research & Advocacy Unit;

RAU (2019) (b), *Religion and Politics in Zimbabwe*. January 2019. Harare: Research and Advocacy Unit;