



Research Report

TANZANIA

BBC WORLD SERVICE TRUST



GRACE DAVIES/BBC WST

Tanzania Talks Climate

The public understanding of
climate change

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About Africa Talks Climate

Climate change is one of the most important issues on the global political and economic agenda, yet it has taken at least 20 years to become an international priority. In many ways, this is because climate change was originally communicated as a scientific problem. Complex, confusing, and at times contested scientific information resulted in a slow public and political response to the climate crisis. The climate change debate has also taken place in industrialised nations, among a public largely safe from its worst effects. For many, climate change is an abstract concept.

In Africa, climate change is far from abstract - it is already determining the course of people's lives. Extreme weather events and greater unpredictability in weather patterns are having serious consequences for people who rely on land, lakes and seas to feed themselves and to earn a living. As a result, Africa's engagement with the issue is evolving rapidly, presenting an opportunity to leapfrog the slow evolution of western public opinion and political action.

African citizens' response to climate change is hampered by a fundamental shortage of relevant, useful information for African audiences. The intensive media coverage and public awareness campaigns prevalent in much of the industrialised world have been largely absent in Africa, particularly outside major urban centres. Too often, African voices are absent from the international climate debate.

Africa's response to climate change will be dictated by how well it is understood by its people. *Africa Talks Climate* is founded on the belief that those worst affected by the issue have the right to be better informed, in order to understand and respond effectively to their changing climate. Providing people with the information they need will therefore be crucial. Unfortunately, little is known about how climate change is currently perceived and understood by Africans; *Africa Talks Climate* seeks to address this. It is the most extensive research ever conducted on the public understanding of climate change in Africa. The research teams held discussions with more than 1,000 citizens from the Democratic Republic of Congo, Ethiopia, Ghana, Kenya, Nigeria, Senegal, South Africa, Sudan, Tanzania and Ugandaⁱ. They also carried out interviews with nearly

ⁱ Country selection was informed by: consultation with organisations working across Africa on climate change, the presence of a British Council or BBC World Service Trust office, and local research capacity. However, consideration was also given to the country's climate, demographics, geographical situation within Africa and a number of economic, media, and governance indicators.

200 opinion leaders, including policymakers, religious and community leaders, business people, and media and NGO representatives.

The overall objective of *Africa Talks Climate* is to assess public understanding of climate change and identify how communication and media could best support Africans' response to climate change. The research asked four main questions:

1. What changes have African citizens experienced in their climate and environment over time?
2. How do African citizens explain and respond to these changes?
3. What do African citizens know and understand about global climate change?
4. What do African opinion leaders know and understand about climate change and what are their views on their country's responses to climate change?

Only when governments, NGOs and the media are comfortable talking about climate change can they communicate it effectively to citizens. Only when citizens are clear about climate change and its implications for their lives can they respond effectively to it. Equipped with the knowledge that weather patterns are changing and that extreme weather events are more likely to occur, people will be able to debate the issues with their families, communities and governments, and discuss the risks and possible courses of action. This will enable them to prepare more effectively for the future.

Africa Talks Climate is the first step in developing long-term strategies for sharing information about climate change. It aims to support all those charged with communicating on climate change, whether they be international organisations, governments, the media, NGOs or community leaders.

Providing people with relevant information so that they can effectively address the issues that affect them most is at the heart of the work of the BBC World Service Trust. This is why, with its network of researchers across Africa, the Trust is uniquely positioned to support Africa's response to climate change by sharing its expertise in understanding and communicating with audiences.

For further information, including the latest policy briefings, reports and publications from the *Africa Talks Climate* project, visit www.africatalksclimate.com.

Executive summary

From August to October 2009, the BBC World Service Trust's Research and Learning Group, on behalf of the British Council, conducted research in Tanzania to gauge public understanding of climate change. The research consisted of 12 focus-group discussions with Tanzanian citizens, as well as 17 in-depth interviews with opinion leaders from government, religious institutions, the private sector, the media and civil society. The overall objective was to find out what people think about climate change, and to determine how to tailor communication and media strategies to support Tanzania's response to climate change.

Key findings

- Tanzaniansⁱ have noticed changes in the weather and seasons. They say that temperatures have increased and that the rains are not falling as they used to. Many are struggling with the impacts of drought and are frustrated by increased environmental degradation and resource scarcity. Yet most Tanzanians have no understanding of the relationship between these issues and climate change.
- Most Tanzanians are unfamiliar with the concepts of climate change and global warming. They believe the term "climate change" refers to changes in the weather or seasons and have little knowledge of its global context or the greenhouse effect.
- Tanzanians draw on their existing knowledge to explain the environmental changes they experience. Most believe that humans are to blame but point to local deforestation and local pollution as the primary causes of the drought and environmental degradation they have experienced.
- There is a strong tendency for Tanzanians to hold themselves individually or collectively responsible for local changes in the environment and the weather. There is little awareness that climatic problems – now or in the future – are likely to have causes that extend beyond Tanzania.
- To most Tanzanians, deforestation is the clearest manifestation of their country's deteriorating natural environment. Yet most do not fully understand the role that forests play in the global climate system.
- Despite their closeness to the land and understanding of how trees affect their local climate, many Tanzanians say they do not have the resources to plant them.
- The language of climate change is inaccessible to most Tanzanians. Swahili translations for climate change terminology do not effectively convey the causes or global nature of the issue.
- Struggling with repeated droughts and worsening environmental degradation, most Tanzanians feel that there is little they can do as individuals to improve environmental conditions. They say they lack the information and resources that would enable them to cope more effectively.
- Many look to the government for help but feel that it has done little to address local problems. Government representatives interviewed realise that more needs to be done, especially to help Tanzania's farming and pastoral communities adapt to the impacts of climate change, but say their efforts are limited by inadequate resources.

ⁱ A note about language: while this report refers to the views of "Tanzanians", it only represents those Tanzanians who participated in the research. Research participants have sometimes been referred to as "Tanzanians" for ease of reading.

- Many Tanzanians familiar with climate change learned about it through the media. Despite this, the Tanzanian media says it is struggling to cover the issue. They recognise that people need information that makes climate change relevant to their lives, but feel daunted by the complexity of reporting on it.
- While many remember the slogans and spokespeople from environmental campaigns in the media, the substance of the messaging often fails to resonate. Such messages fail to take into account the needs and limited resources of most Tanzanians, who simply want information and resources that can help them survive.
- Local leaders are well positioned to take action on climate change adaptation in their communities, because of both their proximity to the local populations and their understanding of environmental issues. However they tend to be the least informed, among opinion leaders, about climate change and its long-term impacts.
- Among the public and opinion leaders alike, tree-planting is generally accepted as the best method of responding to drought and environmental degradation. There is a need to broaden the discussion to include adaptation options that account for people's energy needs and desire for economic development.
- While links between government and NGO initiatives appear to be strong, local community leaders appear far more isolated. There is a need for greater cross-sector co-ordination and communication on climate change.

RECOMMENDATIONS

The information and communication needs of Tanzanian citizens need to be at the heart of any national response to climate change; the ability of Tanzanians to respond effectively to climate change will be determined by the accessibility and quality of the information available to them. Increased public understanding of climate change will enable citizens and communities to discuss the issue, adapt to its effects and make more informed long-term choices about their future.

Opinion leaders also need access to information on climate change. Leaders from the government, local communities, and religious institutions have unrivalled access to communities, and are in a position to communicate climate change information and inspire citizens to respond, and implement local adaptation strategies.

Accessible and relevant public debate will also be critical to increasing public understanding of climate change. It will provide a forum for sharing experiences, bridge the gap between science and society, and enable people to exert political pressure, both internationally and on their own governments.

The media clearly has an important role to play in responding to climate change, and supporting others to communicate about climate change, including governments, national and international NGOs, scientists, religious leaders and community leaders. Three specific recommendations for all those charged with communicating on climate change follow:

Provide information

- Raise awareness of global climate change and the ways in which it relates to people's lives and livelihoods.
- Build simple, correct mental models of how climate change works. In doing so, be mindful of people's existing frames of reference (eg trees, air pollution, and heat), which can function as barriers or facilitators to effect climate change communication.
- Clarify how climate change relates to Tanzanians' understanding of the effects of deforestation and pollution on their environment.
- Invest in efforts to develop and test appropriate climate change

terminology in Swahili and other relevant languages.

- Provide people and communities with access to information on practical ways to adapt to climate change and prepare for extreme weather events.
- Increase awareness of low-cost technologies that Tanzanians can use to reduce their own impact on the environment.
- Pay particular attention to the needs of information-poor rural communities. For them, climate change represents a tipping point, and they need targeted information and resources that will enable them to cope with the impacts.
- Provide local leaders with access to information on climate change, bearing in mind that adaptation strategies need to take into account local leaders’ understanding of the issue.
- Increase opinion leaders’ understanding of global climate change so that they can communicate confidently on the issue and incorporate mitigation and adaptation into their decision-making.
- Communicate in ways that are locally relevant to people, using a variety of news and non-news platforms (eg public service announcements, radio dramas).
- Use the media and schools to provide information about climate change to the Tanzanian public.

Facilitate policy and public debate

- Build the capacity of news and non-news media to support more effective public debate on climate change in Tanzania.

- Provide “public spaces”, for example through TV talk shows, radio call-ins and other interactive media platforms, to exchange ideas and information, foster understanding and plan for action. Such spaces could also facilitate better cross-sector communication between government, NGOs, the private sector, the media, and local leaders, as well as with international actors.
- Draw on a range of Tanzanian voices and experiences to discussions and debates: engage citizens, local interest groups, civil society actors, religious leaders, and policymakers from all levels of government.
- Harness Tanzanians’ understanding and experience of their changing weather and environment to create a relevant discourse that promotes citizen engagement in Tanzania’s response to climate change. Build a sense of immediacy and encourage the sharing of current examples of adaptation to climate change.

Encourage accountability

- Develop mechanisms which enable Tanzanian citizens and their representatives to move climate change on to the political agenda; and to exert pressure on their own governments with respect to climate change policies, adaptation funding, technology transfer, emissions reduction and other response strategies. Such mechanisms will also help Tanzanian citizens and their representatives to communicate their own perspectives and demands to the rest of the world.

I Background

Climate change in Africa

As climate change threatens Africans’ health and homes, and the natural resources upon which many depend to survive, Africa’s population faces an urgent crisis.¹ It is predicted that Africa will be one of the regions worst affected by climate change.¹ For people struggling with the challenges posed by climate variability, environmental degradation and poverty, climate change represents a tipping point.

Rainfall patterns across Africa have already changed markedly, and yields from rain-fed agriculture could halve in the next decade.² A decline in yields is predicted to lead to a greater risk of malnutrition for people who rely on the land to eat, and increased food insecurity for those who rely on buying food in the marketplace.³ Indeed, there have been recent food crises in Kenya, Uganda, Somalia and Ethiopia.⁴ Imports may also be affected, and food aid is threatened by climate change in the midwest of the United States.

Climate change is likely to alter the transmission patterns of diseases such as malaria.⁵ Increased incidences of cholera and meningitis are also thought to be linked to variations in climate. Health threats such as diarrhoea, asthma and stroke affect more people when temperatures rise.⁶

The stark impacts of changing rainfall patterns on Africa are manifest. A more powerful hydrological cycle will bring other challenges, including flooding. The Intergovernmental Panel on Climate Change (IPCC) says that “by the 2080s, many millions more people than today

are projected to experience floods every year due to sea-level rise... [largely] in the densely populated and low-lying mega-deltas of Asia and Africa... small islands are especially vulnerable”.⁷

The links between environmental degradation, political tension and conflict have been highlighted for many years.⁸ Environmental degradation reduces the supply of food and fresh water, and resources such as land. Climate change is predicted to exacerbate conflict in Africa, and in some cases is already doing so.⁹

Climate change in Tanzania

Climate change presents an additional stress for Tanzanians already struggling with the challenges posed by environmental degradation and widespread poverty.

Tanzania’s mainland is divided into a central plateau, highlands along the north and south, and coastal plains. Tanzanian territory also encompasses the coastal islands of Zanzibar, Mafia, and Pemba.¹⁰ Rainfall follows a complex pattern over most of the country. The northern part has two rainy seasons with long rains between March and May and short rains between October and December. The southern regions have a single rainfall season between November and April.¹¹

With approximately 35% of the population living below the poverty line and 80% of the population engaged in livelihoods based on agriculture or livestock, any shifts in climate and changes in rainfall patterns will have a critical impact on Tanzania.¹² The economy depends heavily on agriculture, which accounts for more than 40% of Gross Domestic Product (GDP).

Tanzania is ranked 204 out of 229 for GDP per capita and 203 out of 229 for life expectancy at birth. It also has some of the highest rates

i Of the 20 countries in the world most vulnerable to climate change (in socio-economic terms), 15 are African. See *The Anatomy of a Silent Crisis*, ref 1.

Perceptions and coverage of climate change: what do we already know?

To communicate effectively about climate change, it is critical to know how people understand it. While this review is not exhaustive, it is clear that here is a dearth of research on perceptions of climate change in Africa, and it will be essential to address this problem if communication is to improve. Opinion polls to date have largely focused on Nigeria, Kenya and South Africa. They reveal that many people are unfamiliar with “climate change”, “global warming” and related terms.^{13, 14} This makes it difficult to interpret further opinion-poll results about climate change in Africa; most polls suggest that Africans view climate change less seriously than do non-Africans,^{15, 16} which may point to a lack of information concerning the relevance and implications for Africa, but could also reflect a lack of understanding of the questions asked.

Some small-scale perception studies hint at the impact climate change is having on African lives.^{17, 18, 19} Lack of information regarding climate change is seen by some as a critical barrier in dealing with its effects.^{20, 21} Indeed, research in the United States has shown that a limited understanding of climate change can restrict people’s ability to distinguish between effective and ineffective response strategies.²²

A lack of public understanding of climate change is not exclusive to Africa.¹ A review of research on the perceptions of climate

i In the absence of extensive research on the public understanding of climate change in Africa, *Africa Talks Climate* also draws on existing research from outside Africa, whilst acknowledging that in many cases this research was conducted in a Western context, and therefore must be applied carefully to the African context.

change in the UK reveals public understanding as “patchy, but generally poor”.²³ Similarly, research in the United States has shown that people often have basic misconceptions about climate change.^{24, 25} Although high levels of media coverage of climate change in the United States and the United Kingdom have not always translated into high levels of concern among the public, some research suggests this is because climate change is seen as a remote and non-urgent issue.^{26, 27} This is less likely to be the case in Africa, where most people are already experiencing the effects in their daily lives.

Although the media are seen to have a critical role to play in raising awareness and information provision on climate change, and disaster preparedness,²⁸ little research exists on the media coverage of climate change in African countries. However, a recent publication suggests that journalists covering climate change in many developing countries lack training, support from editors and access to information or people to interview.²⁹ It concludes that while news coverage of climate change in non-industrialised countries is increasing, the quantity and quality of reporting does not match the scale of the problem. It goes on to point out that a reliance on reports from Western news agencies, rather than locally relevant news, as well as sparse coverage of adaptation measures, means that audiences, particularly the world’s poor, are being underserved. Finally, it hints at the potentially important role that non-news media (such as talk shows, dramas and public service announcements) can play in providing information to audiences on climate change.

Acronyms used in this report			
BBC WST	BBC World Service Trust	NGO	Non-governmental organisation
CDM	Clean Development Mechanism	R&L	BBC World Service Trust Research and Learning Group
CFC	Chlorofluorocarbon	TBC	Tanzania Broadcasting Corporation
DoE	Division of Environment, Vice President’s Office	UNEP	United Nations Environmental Programme
GDP	Gross Domestic Product	UNFCCC	United Nations Framework Convention on Climate Change
IDRC	International Development Research Centre	UN-Habitat	United Nations Human Settlements Programme
IPCC	Intergovernmental Panel on Climate Change	ZCCIA	Zanzibar Chamber of Commerce, Industry and Agriculture
ITV	Independent Television		
NAPA	National Adaptation Programme of Action		



of HIV and Aids in the world. Improvements in infrastructure and the growth of the industrial sector, particularly focusing on minerals, have led to economic growth in recent years.

According to climate models, average daily temperatures in Tanzania are expected to rise between 2C and 4C over the next 75 years.³⁰ Increases in temperature are projected to be greatest in the central and western regions of the country.³¹ Those areas with two rainy seasons are predicted to see rainfall increase by between 5% and 45%, while the areas with one rainy season may see a decrease in rainfall of 5%-15%.³² Extreme weather events including drought, flooding and tropical storms are expected to increase in frequency and intensity.³³ Climate change is also predicted to cause a rise in global sea levels, although the extent to which this will affect Tanzania is unclear.³⁴

The interrelation of climate change with other factors is complex and knowledge of it is still evolving. However in Tanzania, climate change is projected to affect water resources, crop production and food security. Reductions in productivity will affect key staple crops such as maize in addition to export goods such as coffee. Maize production is expected to decline by 33% across the country.^{35, 36} Higher temperatures and decreases in rainfall are projected to affect soil moisture³⁷ in many areas and lead to an increase in crop disease and pestilence.³⁸ Changing precipitation levels and increases in temperature are also expected to reduce runoff from the Pangani and Ruvu rivers, affecting local communities as well as energy supply to some of Tanzania's main towns and industries.³⁹ Extreme weather events are also predicted to increase soil erosion.⁴⁰

Livestock will also be affected by many of these impacts. An increase in vector-borne diseases, rising temperatures and more frequent extreme weather will reduce livestock range and productivity.⁴¹ Plant species on which livestock feed will also be reduced as the concentration of carbon dioxide in the air increases.⁴² Many of these impacts are, in fact, current not project problems, and pastoral communities are already travelling beyond their traditional grazing areas.⁴³ These population shifts are likely to increase conflicts between communities competing over scarce natural resources.⁴⁴

Climate change is also expected to impact human health in a variety of ways. Rising temperatures may contribute to an increase in

vector-borne diseases.⁴⁵ Malaria, already one of the top three causes of death⁴⁶ in the country, is, according to some projections, expected to become more common in high-altitude areas where it had not been prevalent earlier.⁴⁷ Climate change will also affect human health through its impacts on water and food availability.⁴⁸

Tanzania's 800km coastline is highly populated and will likely be affected by any rise in sea levels rise caused by increasing global temperatures.⁴⁹ While the extent to which sea levels will rise is unclear, however, even a small increase could impact the low-lying regions of the Tanzanian coast. A 0.5m rise in sea levels is expected to cause a loss of 247 sq km of land; Dar es Salaam and other important economic areas are among the most vulnerable.⁵⁰ The possible effects of sea-level rise also include the salinisation of key river delta areas.⁵¹

Climate change will also have economic impacts beyond Tanzania's rural communities. Decreasing water resources will affect hydropower energy production, affecting electricity and service provision for the growing number of domestic and industrial users.⁵² Climate change may also affect Tanzania's tourism industry, much of which is dependent on the country's biodiversity. Conservation areas comprise 38% of total land area in Tanzania⁵³ and climate change is predicted to alter the diversity of flora and fauna found there.⁵⁴ Despite debate as to whether climate change has contributed to the melting, the snow-capped Mount Kilimanjaro is one of Tanzania's (and Africa's) most famous attractions and environmental icons. It remains an important symbol of the nation and continent's increasing environmental fragility.⁵⁵

Tanzania is signatory to a number of international agreements regarding climate change. It signed the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and ratified it 1996.⁵⁶ It presented its Initial National Communication (INC) on climate change in 2003 and its National Adaptation Programme of Action (NAPA) in 2007.⁵⁷ While climate change issues are addressed through a number of different ministries, the entity responsible for managing compliance with the UNFCCC is the Division of Environment (DoE) within the Vice President's Office.⁵⁸ Beyond the federal government, more information is needed as to how other authorities are responding to climate change. Local community groups organise around local problems but their links to governmental initiatives need strengthening.

2 Research methodology

Research objectives

The overall objective of *Tanzania Talks Climate* is to assess the public understanding of climate change and identify how communication and media can best support Tanzania's response to climate change.

The research focuses on four key questions:

1. What changes have Tanzanian citizens experienced in their climate and environment over time?
2. How do they explain and respond to these changes?
3. What do they know and understand about global climate change?
4. What do Tanzanian opinion leaders know and understand about climate change and what are their views on Tanzania's response to climate change?

The research' consisted of 12 focus-group discussions with citizens and 17 in-depth interviews with opinion leaders across six locations in Tanzania between August and October 2009 (see Appendix 1). The locations were Dar es Salaam and Bagamoyo; Moshi and Marangu in the Kilimanjaro region; and Mpwapwa and Kibaigwa in the Dodoma region (see Figure 1 on page 11). The environmental challenges represented in these areas have already been linked to climate change, to some extent, or could be further exacerbated by climate change in the future.

- Dar es Salaam is Tanzania's commercial capital and largest city. It continues to experience a high level of migration and urbanisation. Bagamoyo is situated on the coast and is vulnerable to coastal flooding and sea-level rise.
- In northern Tanzania, Moshi and Marangu are prone to rainfall variability and have suffered from deforestation and crop failure. They also are located near Africa's highest peak, Mount Kilimanjaro.
- In central Tanzania, Mpwapwa and Kibaigwa were selected to

i *Africa Talks Climate* uses a qualitative research design. Qualitative approaches, which generate non-numeric data, are particularly useful for exploratory research on topics for which there is little previous research. Through focus groups and in-depth interviews, *Africa Talks Climate* investigates the meaning that people attach to climate change and explores how they experience climate-related issues and impacts.

provide the perspectives of farming and pastoral communities from inland areas. The Dodoma region was selected because it is susceptible to drought.

Focus group discussions

The research set out to gather a broad range of views. Discussions were held with women and men, rich and poor, rural and urban. Given the implications of climate change for certain livelihoods in Tanzania, farmers and pastoralists (in Marangu, Mpwapwa and Kibaigwa) and fishermen (in Bagamoyo) were also purposefully targeted. All discussions were conducted in Swahili.

In-depth interviews

To understand the wider context of climate change in Tanzania, 17 in-depth interviews were conducted with opinion leaders with a particular interest in climate change, or an informed opinion from a certain field, region or subject area within the country. They included policymakers, religious leaders, business people, journalists, and civil society representatives. For further information on the research methodology used and guiding principles, see Appendix 3.

The advisory group

The BBC World Service Trust and the British Council set up an informal advisory group of climate change and development experts to provide technical knowledge on climate change and insights into the local climate context in Tanzania. All experts were Tanzanian, or had worked and conducted research in Tanzania.

Advisory group members were recruited during the initial phase of the research, when consultation calls were held with a variety of individuals and organisations to gather background information on Tanzania and climate change. At the same time, experts were invited to join the advisory group.

The group offered informal guidance in three areas: firstly, regarding specific climate change issues facing Tanzania; secondly, advice on fieldwork and site selection; and thirdly, feedback on the research findings and reporting. See Appendix 2 for a full list of advisory group members.

3 Citizen focus group discussion findings

There are different ways to know about climate change. One way is to understand the science: that human activities, such as the burning of fossil fuels for energy, are increasing the amount of heat-trapping gases in the atmosphere, which warms the earth and affects its climate system. Another is to experience it first hand: to witness over a lifetime changes in rainfall patterns that affect the harvest; to suffer from increased droughts, floods and other climatic disasters that can wipe out homes and crops; or to be at the receiving end of the spread of vector-borne diseases, such as malaria.

The findings from this research suggest that although most Tanzanians do not know about climate change in the scientific sense, they have certainly experienced it. Observable changes in the weather and the seasons constitute most Tanzanians’ knowledge of climate change; they live with the impacts of the changing climate in their day-to-day lives.

The research also shows that changes in climate are not noticed by Tanzanians in isolation from broader environmental changes. People in Tanzania are keenly aware of environmental degradation and depletion of natural resources. They mention, for example, deforestation, pollution and decreased fish stocks. Indeed, the research reveals that most Tanzanians appear to make little distinction between environmental degradation and climate change; changes in the weather and seasons form part of the broader changes people have observed over the course of their lifetimes.

Given that climate change is viewed in the wider context of environmental changes, it is important to understand how Tanzanians perceive these changes. This report, while focusing on climate change, recognises the complexity of the relationship between climate change and environmental degradation.ⁱ It begins with an overview of the environmental changes that Tanzanian citizens have experienced, and then focuses on three key issues which people say directly impact their lives. It moves on to examine people’s understanding of climate terminology and concepts, and presents three key themes that shape people’s understanding of the science of climate change. In subsequent sections, it explores what Tanzanian opinion leaders know and think about climate change, and concludes with recommendations.

What changes have Tanzanian citizens experienced in their climate and environment over time?

Tanzanians have noticed clear changes in their weather and seasons. It is drier now. An olderⁱⁱ female pastoralist from Kibaigwa was typical in stating: “The rains used to have seasons, there was plenty of water and we never used to have landslides, but right now rainy seasons are shorter due to the destruction of forests by man.”

Nearly all Tanzanians see trees as the primary measure of their environment’s wellbeing, and both young and old feel that there

i Climate change exacerbates environmental degradation and vice versa. For example, cutting down trees can cause soil erosion, which in turn can be exacerbated by the effects of climate change, such as heavy rains and winds. However, cutting down trees can also cause climate change, because trees act as carbon sinks, storing carbon dioxide that would otherwise enter the atmosphere.
ii Focus group participants were divided into three age groups: 18-24, 25-34, and 35-50. In selecting participants, age and gender were taken into account to encourage easy conversation within groups (see Appendix 3). Participants described as “young” or “younger” are in an age range from 18 to 24 years, and those described as “older” are aged 35-50. Those without a qualifier are usually in the 25-34 age range.

“The rains used to have seasons, there was plenty of water and we never used to have landslides, but right now rainy seasons are shorter due to the destruction of forests”

“Since people started cutting down trees... this forced us to move to other places that have not been tampered with”
PASTORALISTS FROM KIBAIGWA

were more trees in the past. A young fisherman from Bagamoyo explains: “We just cut down trees and leave the place deserted.” Most link the loss of trees to the changes in the weather and believe that deforestation has affected the reliability of rainfall and depleted local water sources.

The impacts of these changes are striking. Tanzanians say that their lives have become more difficult and that their traditional livelihoods are no longer sustainable. A male pastoralist from Kibaigwa echoed the complaints of farmers and pastoralists alike: “Since people started cutting down trees and spoiling the environment, this forced us to move to other places that have not been tampered with. But this place is a desert now.”

Shifting rainfall patterns and widespread deforestation are part of wider societal changes that Tanzanians say they’ve witnessed. Most feel that environmental degradation is a result of a growing population and peoples’ desire to live better, less impoverished, lives. “Right now we are heading to 45 million, so we have really increased in number,” explains an older man from Dar es Salaam. “So you cannot tell people to keep the natural environment when they want development.”

How do Tanzanians explain and respond to changes they are experiencing?

Many of the changes that Tanzanians observe are potentially linked to climate change, and could be exacerbated by climate change in the future. To understand whether people connect local problems to climate change, and to find out how they are currently coping and may cope if these problems become more severe or frequent, they were invited to discuss issues that prominently affected them. A set of 15 images, representing a range of issues that can be linked to climate change, was used to help facilitate the discussion.

Participants, as a group, chose images which had the greatest effect on their lives.ⁱⁱⁱ Efforts were made to understand how people were interpreting the images – for example, different images prompted discussion of drought – and subsequent discussions sought to understand attitudes towards these issues and the perceived causes, effects and responses.

iii Participants also had the option to suggest other issues affecting them, that they felt were not covered by the 15 images.

Figure 1



Across all the locations, a total of three issues were identified:

- 1. Drought and deforestation
- 2. Congestion, pollution and flooding in urban areas
- 3. Declining fish stocks and illegal fishing

Figure 1 on page 11 shows the images selected in each location.

The issues that people selected tended to be immediately linked to the struggles they faced in their daily lives. Farmers talked about drought, crop failure and bush fires. Fishermen discussed fishing and flooding. Flooding was also an issue for urban dwellers, with whom the discussion largely focused on drainage canals blocked by rubbish. Pollution – visible air pollution from cars and factories as well as rubbish – was a prevalent theme for the urban groups. The research did not seek to restrict conversation and, as a result, discussion sometimes moved into environmental degradation and broader social problems. In this way, the most pertinent climate change and environmental degradation issues facing residents in each location emerged.

Drought and deforestation

Drought has affected the lives of all Tanzanians to some degree, and many are struggling to cope with its impacts. Most believe that deforestation is the primary reason that the rains have stopped falling.



At the time fieldwork was conducted, East Africa was suffering from widespread drought. Given Tanzania’s dependence on rain-based agriculture, it is therefore not surprising that this issue was selected by many people as the topic they were most concerned about. This was particularly true in the Kilimanjaro and Dodoma regions but even people from Dar es Salaam and Bagamoyo are clearly aware of its consequences. According to an older man from Dar es Salaam:

“When we were growing up, starvation was something that came like a season. We had the first one in 1974 and it made history. And then it happened again in 1984 and that one also made history. People were eating roots. But today starvation is an everyday thing. It happens every year.”

Drought concerns all Tanzanians, no matter what their livelihood is. Farmers, agro-pastoralists, shopkeepers, tour guides, and market women all tell of how drought affects their daily lives and their communities. As a male farmer from Marangu explains simply: “water is life”.

Most participants believe that the primary cause of drought is local

“We had the first [famine] in 1974 and it made history... But today starvation is an everyday thing. It happens every year”
MAN FROM DAR ES SALAAM

deforestation, as an older woman from Marangu says: “As we all know, forests... attract rain, so if the forests are cut down, there is drought.” People say that the loss of trees has affected rainfall patterns, depleted local water sources and contributed to the loss of soil moisture and subsequent erosion.

People also speak about who cuts down the trees and why. Nearly everyone blames themselves, their explanations reflecting the reality of life in rural Tanzania. A fisherman from Bagamoyo echoes a point made by many: “Where are we going to get an electric cooker in this environment of ours? We just have to use the firewood and charcoal.” These basic needs, to cook, to eat, and to earn a living, are recognised by all Tanzanians. In short, Tanzanians are cutting down trees in order to survive.

While most Tanzanians think the absence of rain is caused by deforestation, some also believe that air pollution and smoke from factories contributes to the decline in rainfall.

Drought affects the ability of Tanzanians to live their lives. The lack of rain means that people’s crops fail and that many do not have enough food or water for themselves or their animals. Many also say that drought affects them economically. Inadequate harvests force farmers to buy food, yet lower crop yields reduce their available income. High commodity prices put them under further pressure. Less income from agriculture means farmers struggle to pay for their children’s schooling and have less money to buy from local shops and traders.

Tanzanians are responding to drought by addressing local deforestation and by trying to counteract its impacts in any way they can. Most think that more trees should be planted in order to bring back the rains. Tree-planting is an ideal solution for many, although not necessarily an achievable one. As an older male farmer from Mpwapwa explains: “I might be aware that my brother or neighbour burns charcoal... [if] I go ahead and report him I will be destroying his family and that’s what he depends on. I do not think it will be easy.”

Very few Tanzanians mention any attempts to reduce their use of firewood, although one woman from Moshi says: “We take cow dung and dry it up, and we use it as fuel that way we reduce the use of firewood and charcoal... but I think it is very few people who know this method.”

With tree-planting not a viable option, most Tanzanians are doing whatever they can to cope with the impacts of drought. Pastoralists are moving their livestock to look for better pasture. Many are diversifying their livelihoods, starting up small businesses and looking for extra income in local service industries. “It forces you to do some fundraising activities and small scale businesses like drawing and selling water, making and selling mandazis and making and selling ice cream so that you can afford to buy flour,” says a young woman from Mpwapwa.

Some are reliant on food aid. Many feel there is little else they can do. What they say is required is further action from the government. The call for government intervention was particularly great in the Kilimanjaro region, where residents called for stricter laws against deforestation and job creation to provide alternative sources of income.

People were also asked what they would do if the droughts got worse. The response of a male pastoralist from Kibaigwa reflects the limited success that most Tanzanians are having in dealing with the drought: “If this problem continues like this then we will perish in poverty.”

Congestion, pollution and flooding in urban areas

Tanzanians living in urban areas are affected by a range of environmental and health issues that they say are caused by the country’s growing population and a lack of government planning and regulation.



Though aware of how the changing weather impacts the rest of the country, Tanzanians in urban areas are concerned about different issues. People in Dar es Salaam and men in Moshi are mostly concerned about the impacts of a growing urban population and an increasingly derelict public infrastructure.

They brought up a range of issues that spoke to the difficulties of urban life in Tanzania such as blocked drains and increased flooding, rubbish and air pollution, and constant traffic jams. They told of how more people and more cars make their areas more crowded and more polluted. Most say that the rising population and growth of informal settlements has increased urbanisation. An older man from Dar es Salaam noted: “Whenever we see an open space we just want to build, not thinking of why it was left like that in the first place.”

Urban Tanzanians feel that most of these issues are caused by two problems: the carelessness of the growing urban population and a lack of government planning.

Many say that individual carelessness has made the city dirtier and unhealthy. They say people dispose of rubbish without thinking of the consequences and that pollution and increased urban congestion have been exacerbated by a government that has failed to deal with the stresses placed on the city’s infrastructure by the growing population. They criticise the government for failing to collect rubbish, build roads, and for allowing the growth of informal settlements by not providing alternative areas to live.

Urban Tanzanians say that they are frequently affected by congestion, pollution, and flooding. For most residents increased traffic causes inconvenience – it takes longer to get to work and local buses are more crowded.

Complaints about increased rubbish or air pollution, however, tend to be more serious. Nearly all urban dwellers say that increased amounts of rubbish and air pollution are affecting their health. Some

tell how overflowing rubbish from informal settlements contaminates water sources, while others explain that blocked drains and stagnant water lead to outbreaks of cholera, diarrhoea and malaria. Others complained about air pollution causing breathing problems, cancer and other “funny diseases”.

Flooding affects people in a variety of ways as well. It prevents some from completing daily errands, but for others its effects can be much more serious. A young man from Moshi explained: “People lose their lives. Residents and sometimes cars can be washed away by water. It is something affecting us so much.”

Despite the range of issues afflicting urban Tanzanians most are responding to them in similar ways. Most don’t see themselves as the cause of the problem and feel there is little they can do to fix the situation: they can not prevent people from moving into cities, nor can they build roads or improve drainage. Instead, most blame the government. They say that it has failed to respond to the needs of the rising population and the stresses placed on public services. Some feel that complaints to the government were only getting them so far. An older man from Dar exclaimed: “There is nothing more to do, Tanzanians need to wake up and complain to the government and have demonstrations.”

Despite feeling that they can’t solve these issues themselves, most urban Tanzanians are responding to the issues they face by devising practical ways to minimise their impact. Some give themselves more time to get to work; others clean the drains near their homes. Many say their neighbours and communities are doing what they can to ease the problems. Ultimately, though, most urban Tanzanians interviewed don’t see urban issues of congestion, pollution or flooding as something they are capable of solving themselves.

Rural–urban migration and urbanisation

The research explored rural–urban migration in all groups. Africa’s urban population is rapidly growing. Climate change has the potential to increase migration from rural to urban areas as people flee its effects, says the IPCC.

While it is impossible to attribute increases in urban population exclusively to climate change, many Tanzanians speak of leaving rural areas as their traditional livelihoods become less viable. “You cannot stay somewhere knowing very well that you will not get anything to eat,” explains a man from Bagamoyo. “What can they do but run to the cities and do the best they can, stand on the streets and do hawking?”, asks an opinion leader from the media, “They are running away because it’s not working anymore.”

Tanzanians acknowledge, however, that life in urban areas comes with its own problems. They say that without a steady income, it is easy for men and women to fall prey to various social vices, and to end up supporting themselves through a life or crime or prostitution. “To live in the city you must have money,” explains a woman from Moshi, “It can be very difficult because you might not get a place to live and you might end up doing jobs that you had not planned to do.”

Some Tanzanians say that despite struggling with the impacts of extreme weather on their farms and livestock, a simpler, more traditional life in rural areas is preferable. They feel urban migration is effectively an abandonment of their rural lifestyle and history. “You forget where you came from and just look after where you are going,” claims a young woman from Mpwapwa.

Declining fish stocks and illegal fishing

Coastal communities are affected by drought and the depletion of local fish stocks. They are frustrated with their inability to make a living and feel cut off from governmental or other support.



Rising sea levels are one of the many ways that coastal communities will be affected by climate change. Increased oceanic temperatures and acidity levels are also expected to have an impact on coral reefs and fish stocks worldwide. These impacts will restrict the income of coastal fishermen and compound the poverty of local communities. While the residents of Bagamoyo know little about these projected impacts, their comments reflect how difficult life has already become for rural Tanzanians, whether they farm or fish. They say illegal fishing is the issue that concerns them most, as the practice has severely reduced fish stocks in the area. One local woman voices what is on the mind of many: “Most of the people here depend on the sea. Fishing is what pays them. . . but when the fishermen go out on the water now they don’t find any fish. It’s like they have just gone to take a bath.”

Residents say fish stocks have fallen because some fishermen use illegal nets and explosives; they also blame the people that supply the fishermen with such products. While they universally criticise the use of such methods, many understand the rationale for them. A young fisherman explains: “You find someone has two children and. . . tell him that they can go and set up some bombs in the ocean to get fish, he will agree because he does not want to go to sleep hungry.” Fishermen and fish sellers alike spoke about how the depletion of fish stocks affected their livelihoods. They told how the use of explosives and nets had destroyed fish breeding grounds, and as a result, fishermen are catching fewer fish and sellers have less to sell. For both, life has become a struggle, as a young woman from Bagamoyo explains: “My friend, you have no alternative, you take your bucket and if you get something you thank God; if you do not you thank God and go back home.”

Most Bagamoyo residents feel there is little they can do to stop people from fishing illegally. They think stricter government regulation would help, but many doubted its prospects, saying laws against illegal fishing are generally not enforced. Some feel that local authorities are susceptible to corruption. Others, like this man, feel completely ignored by the local political structure: “The people that we are supposed to tell our problems to do not come as often as they should. The only time we see them is when elections are near.” Local residents said that a further reduction in fish stocks would affect their most basic needs and undercut their very survival.

How do Tanzanians think their country and communities are responding?

Tanzanians feel that they have to cope with the challenges caused by their changing environment largely on their own. They lack information on how government, civil society and other Tanzanians are responding to these issues and say that more support is needed.

Tanzanians struggling to cope with unpredictable rains and increasingly unsustainable livelihoods are looking to the government for help. A young man from Moshi was typical in stating: “The maize on the farm isn’t producing any yield. People plant bananas and get something funny out of it. They produce something so small that is not fit for human consumption . . . I think the government should find out what the problem is.”

Tanzanians want stricter laws against deforestation, better public services and more jobs to provide alternative sources of income. They also want their local authorities to do more to protect the environment.

Some say that NGOs are active within local communities, but many are unfamiliar with the work they are doing. They were praised for planting trees particularly by those living in the Kilimanjaro region. Despite NGO engagement at the community level, however, few Tanzanians say they receive information on how they to sustain their agricultural and pastoral livelihoods.

Religious institutions are not generally considered active in addressing these issues, although people praise local churches and mosques for planting trees. Many say, however, that religious leaders are key sources of influence in society and could encourage people to conserve the environment, as an older man from Dar es Salaam explains: “Picture if Reverend Rwakatare stands on the altar and tells her followers to plant trees: they will plant. Then Kakobe tells his followers to do the same for the sake of the Lord, they will, and also if Sheikh Gorogosi does the same, everyone will be planting trees.”

Tanzanians also feel that individuals themselves need to take more responsibility for protecting their environment and developing the rural economy. A male pastoralist from Kibaigwa remarked: “I think the government has really tried but it’s the people who are hard headed.”

Yet most people were not aware of individuals or community associations active on environmental issues. While a few mentioned community groups that were involved in local tree conservation, many felt that collective action was unsustainable. A woman from Moshi says: “We’d go and plant trees, but at the end of the day there is nothing to motivate us. . . [you] leave very early in the morning to attend to that practice and when you get back home you don’t even have a shilling to buy vegetables. So people just started giving up.” Tanzanians feel that there is little they can do as individuals to successfully deal with the many environmental and social problems they face. Most are simply trying to survive.

What do Tanzanians know and understand about global climate change?

Despite articulating local challenges and recognising differences in nature, weather, and the surrounding environment, people rarely link such changes to the global phenomenon of climate change. Not only does climate change terminology not resonate with people, they also generally do not have a clear and accurate understanding of climate change concepts.

Words for “climate change” and “global warming”

In Tanzania all groups were asked their awareness of the terms “climate change” and “global warming” in English and as they are translated in Swahili. Translations for such terms were discussed with members of the Tanzanian advisory group and local climate experts. *Mabadaliko ya hali ya hewa* was used as the Swahili translation for “climate change”, and *kuongezeka kwa joto* as the translation for “global warming”.

In this context, *Tanzania Talks Climate* explores how people make sense of climate change terminology and react to information about climate change. It emerges that three key themes are shaping people’s understanding of climate change, and affecting they way in which they explain its effects.

Terminology

Despite recognising changes in the weather, Tanzanians have a low awareness of the term and concept of climate change. A young woman from Mwapwapa gave a typical explanation of the term: “I was used to rains in November, but now there are none. . . nowadays it is sunny and hot. So that is the change.” Most people literally translate the term when they hear it in Swahili and understand it to refer to seasonal changes or immediate changes in the weather.

Recognition of the term “global warming” is quite low. The few who recognise the term understand it to mean localised, and sometimes seasonal, increases in temperature. Most literally translate it to derive its meaning and believe that it refers to the “warming up of the environment.” A minority have a broader understanding of it. Many had heard about it in the media, yet for most Tanzanians, neither “climate change” nor “global warming” is a household term.

Reaction to the concepts

Low spontaneous awareness of climate-related terms was to some extent expected, based on previous research.ⁱ Discussions, therefore, also explored awareness and understanding of the concepts of climate change and global warming, using the following statements.ⁱⁱ

- 1. Scientists are saying that human beings are causing weather patterns over time to change around the world.
- 2. Scientists are saying that human beings are causing the temperature of the earth to increase.

Despite a lack of familiarity with the terms climate change and global warming, Tanzanians agreed with both the statements above. “I think it is true because the burning of the forests increases heat,” explains an older woman from Marangu, “and the gases from the factory get into the environment and form another cloud so I think I can say that they are right.”

Tanzanians agree that human beings are causing weather patterns to change and temperatures to increase. Yet their understanding of these changes is local and most are unfamiliar with any effects beyond Tanzania’s borders. The causes of such changes are also predominantly attributed to degradation of the local environment through deforestation, pollution, and the needs of the rising population. There is little recognition by most Tanzanians, however, that the changes they have witnessed and the problems they face have human causes that extend beyond their own continent.

Frames of reference

In the absence of a scientific understanding of climate change, people reach for explanations that build on their existing knowledge. The discussions of the terms and concepts of climate change and global warming revealed three important themes that influence participants’ understanding:

- 1. Emphasis on trees
- 2. Visible air pollution
- 3. Localised heat

Such pre-existing concepts are often referred to as “frames of reference”.⁵⁹ These are critical, because they shape people’s

i The *Africa Talks Climate* pilot study was conducted in Nigeria. See Appendix 3.
ii These statements were explored before the terms “climate change” and “global warming” were introduced. See Appendix 3.

understanding of, and reactions to new information. When exposed to new information, people often use existing beliefs, knowledge, and values to help them process it. The likelihood that people accept or reject new information depends heavily on what they already know and believe.

Crucially, people are more likely to reject new facts and information than they are to dismiss their own existing frames of reference. If new information contradicts a person’s beliefs, it is likely to be rejected. However, if that information is delivered in a way that complements people’s knowledge and values, people are more likely to accept it.

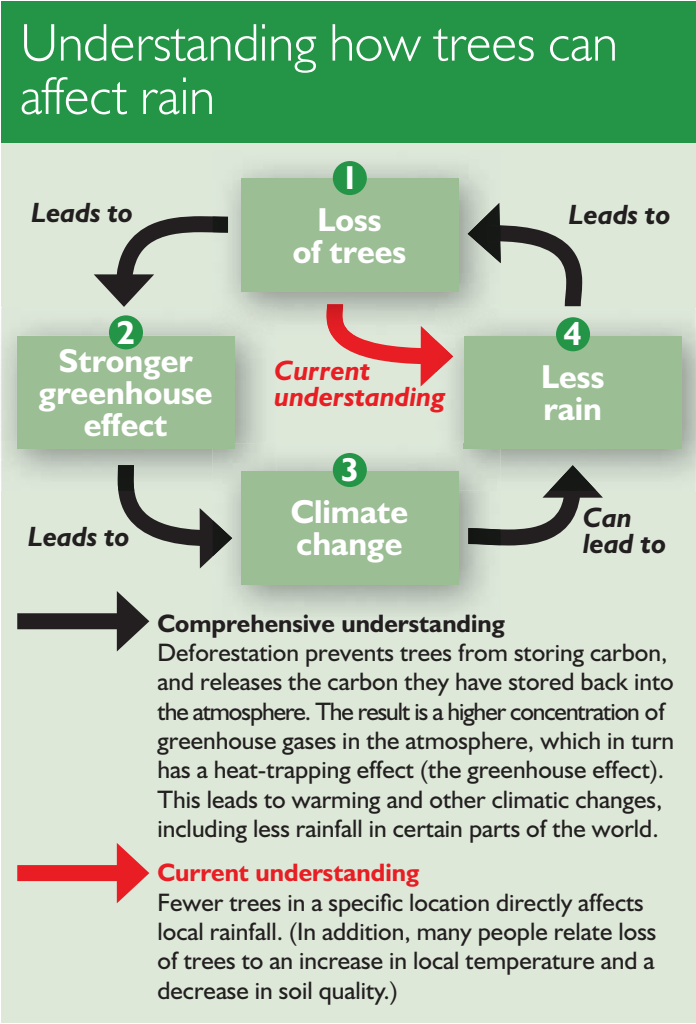
In this way, the three themes – or frames of reference – can function as barriers or as facilitators to effective communication on climate change. Understanding them can help communicators in Tanzania make their content relevant to their audiences. It is essential, therefore, to understand how existing knowledge and concepts are triggered when communicating about climate change.

Emphasis on trees

Tanzanians’ understanding of the concept of climate change is primarily shaped by the importance they place on trees. It is almost universally accepted that trees play a critical role in determining local climatic conditions and weather patterns. Most Tanzanians believe that trees attract or create rain, as a young fisherman from Bagamoyo explains: “When the clouds form and the steam passes and senses the trees, then it will rain there.”

Although scientists do not necessarily agree on whether trees create rain, they are agreed that forests recycle rain through a process called evapo-transpiration. This means that water vapour coming off the leaves of trees evaporates and falls again.

Figure 2



Tanzanians also recognise that trees help maintain local water catchment areas. They say tree-felling can result in the drying up of local groundwater resources and impact the quality of local land. For Tanzanians, trees mean fresh air, cool temperatures, water and rainfall for their crops and livestock. They see trees as the main barometer of the health of their local ecosystem and tree-felling as having a major impact on the local climate. *“The natural environment is going away slowly, and if we or the government are not careful, wananchi will be in trouble later, because the weather pattern revolves around the trees,”* says an older man from Mpwapwa.

Tanzanians have a detailed knowledge of the role trees play at a micro-climatic level, but little knowledge of the importance of trees at a global level. There appears to be little awareness that trees act as carbon sinks to reduce carbon dioxide, the most significant greenhouse gas causing climate change.

The implications of this are both positive and negative. On one hand, people may be motivated to plant and preserve trees, which is good from a climate change and environmental perspective. On the other, their understanding could provide a false sense that climatic problems, such as drought, can be solved at a local level through tree-planting.

Recommendations for communicators

Build on people’s existing knowledge of trees to help create wider understanding of the role of deforestation in global climate change. Try to do so without removing people’s sense that their local actions matter. Help people move beyond the idea that tree planting is a cure for all environmental and climate ills. Expose them to other mitigation and adaptation options.

Visible air pollution

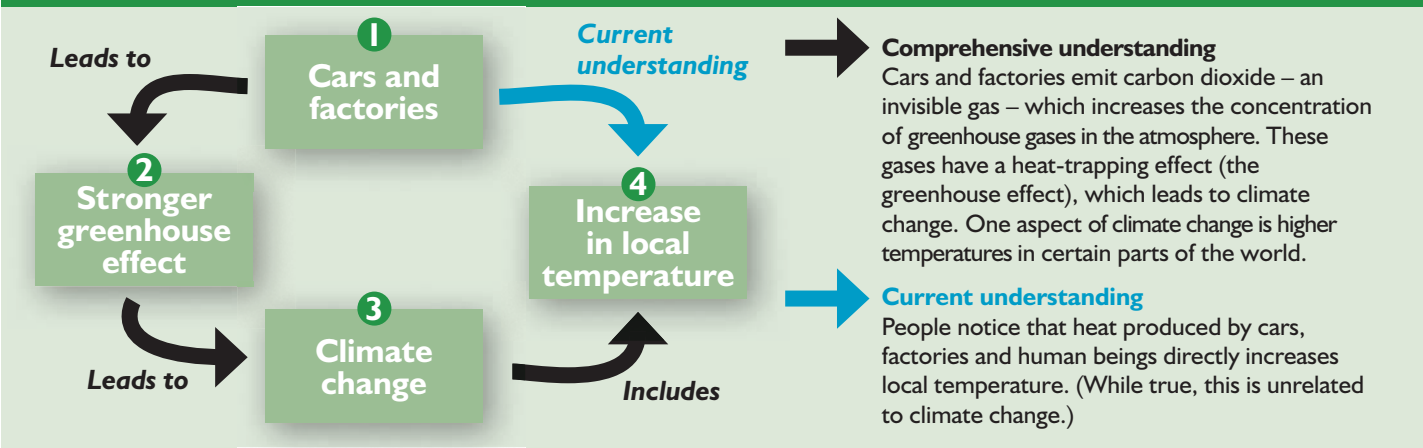
Visible and olfactory manifestations of air pollution also influence the way Tanzanians make sense of their changing environment. Like this older man from Dar es Salaam, many think smoke has a role in degrading the environment, polluting the air and changing the weather: *“The factories emit poisonous gases which go up and block the clouds that bring rain. That is why you find that in some places there is no rainfall.”*

While most Tanzanians cite factories and small-scale burning of rubbish piles as the main sources of pollution, others include smoke from cigarettes and “bomb explosions”, possibly in reference to Mbagala armoury explosion in April 2009.⁶⁰ Many say that such pollution has an impact on their personal health.

Tanzanians consider visible manifestations of pollution, whether from a bonfire, smokestack or cigarette butt, as evidence that an activity is harmful to the air. For others, smell signifies its impact. *“I also think*

Figure 3

Understanding how air pollution can affect temperature



littering destroys the weather,” says a woman from Moshi. *“You find that some rubbish smells very bad and this interferes with the weather.”*

Having witnessed the growth of towns and industries across the country, most Tanzanians link the pollution they see and smell to the degradation of their natural environment. Very few are aware that unseen gases, such as carbon dioxide, contribute significantly to the changes they’ve experienced.

The emphasis placed on visible smoke may help to make the idea of greenhouse gas emissions more tangible. It has the disadvantage, however, of implying that we can see greenhouse gas emissions, which is not necessarily true.

Recommendations for communicators

Build on people’s understanding of smoke to broaden their understanding of the global effect of greenhouse gases. Use health concerns connected with smoke to engage people and teach them about the causes of climate change.

Localised heat

Some Tanzanians also believe that the localised increases in ambient temperature contribute to rising climatic temperatures. People feel heat emanating from a car’s engine, a person’s body, or the walls of a building and deduce that such heat has broader implications for the weather. A young man from Bagamoyo was typical in seeing a link with the rising population: *“When humans were few, temperatures were okay, but the moment they started multiplying then that is when the heat started.”* Although ambient heat can indeed raise local temperature, this is not the mechanism by which global warming occurs.

Whether sensing the heat from a neighbour’s breath, smelling smoke from a car’s exhaust or seeing how their forests have disappeared, Tanzanians have numerous ways of explaining their changing environment. Whilst unrelated to any understanding of greenhouse gas emissions, these beliefs are all founded on the notion that human activity has changed Tanzania’s environment for the worse.

Recommendations for communicators

Draw on people’s understanding of the immediate relationship between humans and the environment to explain climate change at a global level.

These three themes can function as barriers or as facilitators to effective climate change communication, but it is essential for communicators to understand and take them into account when designing communication strategies.

4 Interviews with opinion leaders

This research draws on 17 interviews with opinion leaders across six sectors:

Government

- Climate change focal point for Tanzania (Vice President’s Office)
- Ministry of Livestock Development and Fisheries
- Ministry of Finance
- Member of parliament for Wawi, Zanzibar
- Village chairman from Mpwapwa

Media

- State broadcaster
- Private television company
- Print media

Private sector

- Tanzanian-owned bank
- Small-scale coffee growers’ association
- Local chamber of commerce

NGO, religious, associations

- Christian leader
- Islamic leader
- Fishermen’s group from Bagamoyo
- Association of market women from Marangu
- Two NGOs focusing on poverty and the environment

What do Tanzanian opinion leaders know and understand about climate change and what are their views on Tanzania’s response to climate change?

Knowledge of climate change among Tanzanian opinion leaders is limited to those in the government, civil society, media and private sector, although their understanding is far from complete. Leaders from the communities most impacted by climate change know even less.

Although this research relies on interviews with relatively few opinion leaders, their responses indicate that knowledge of climate change varies greatly. Each interviewee was asked what climate change means to them, and their response to this question tends to be a good barometer of their knowledge of the issue. Those more familiar with the concept immediately identified some of its key impacts.

“Climate change, as I understand it is caused by global warming. Its effects are seen in the environment whereby water levels in the lakes, rivers and oceans are affected.”
Aga Mbuguni, executive editor, Majira newspaper

Those less familiar with climate change tended to make more general references to the weather and natural world, and how it has changed:

“I can’t explain it at length but I can say it’s the change of weather according to the weather we are used to, according to how our elders used to see it... now it has changed and become very different.”
Religious leader

Opinion leaders who know about climate change understand its links with global warming and are somewhat familiar with the

“The farmers... are in confusion because they don’t know what is going on, all they know is that the rains are late or it rains too much”

NEWS DIRECTOR, ITV

general themes of international climate change negotiations. Despite this, many still link climate change to their understanding of ozone depletion and other environmental degradation concerns.

Religious and community leaders know far less. Their understanding of climate change is similar to the average citizen’s. Generally, they understand climate change to mean changes in the weather. They can describe, therefore, many of the effects of climate change such as drought but do not connect such changes in the environment with greenhouse gas emissions from industrialisation. Like most Tanzanians, they often claim that these changes are caused by local deforestation and pollution.

Understanding climate change

Opinion leaders’ understanding of the causes of climate change depends on whether they understand the issues’ global context. Many point to local pollution and deforestation as primary causes.

Opinion leaders from the government, NGO, private sector, and media understand that the primary cause of climate change is industrialisation in developed countries. Many referred to pollution, greenhouse gases, or carbon dioxide and often with reference to how these were generated in industrialised countries outside Tanzania. They mention how much of the pollution responsible for climate change is emitted by the “big,” “rich” or “superpower” countries.

Yet even the opinion leaders most informed about climate change still confuse it with ozone depletion:

“Climate change is due to the poisonous gases that are thinning the ozone layer and thus the harmful rays of the sun are touching the earth’s surface.”
National government opinion leader

Another linked climate change with “gases coming from the fridges and air conditioners of the cars”.

Many see similarities between the causes of climate change and what they identify as the causes of local environmental degradation. This often results in opinion leaders looking inward to causes from within to Tanzania:

“The way we established our airports, big planes land with their smoke and noises. It destroys the atmosphere.”
Mr Hamad Rashid Mohammed, member of parliament for Wawi, Zanzibar

Community and religious leaders are less familiar with the concept of climate change, and similar to most Tanzanians, understand the concept to refer to changes in the local weather. Their explanations of its causes centre therefore not on industrialisation or greenhouse gas emissions, but on what they perceive as main reason their weather is changing – deforestation and environmental degradation:

“We are the ones who cut down the trees that are supposed to provide us with enough rain.”
Ms Hilda Tesha, head of market association, Marangu

Many believe smoke and pollution are affecting the wellbeing of Tanzania’s environment. As a result, discussions about the causes of climate change often evolve into discussions of wider environmental issues.

Perceived impacts of climate change

Opinion leaders feel that Tanzania’s farmers, pastoralists and many others that make a living on the land will be the most severely affected by climate change. They say decreased crop production will affect the entire nation.

Opinion leaders say that the lives of most Tanzanian citizens are inextricably linked with the climate. They mentioned the recent drought, and are particularly concerned for about how climate change will impact the country’s the agricultural sector.

“The farmers ... are in confusion because they don’t know what is going on, all they know is that the rains are late or it rains too much, more than they expected and to be honest it’s the farmers who are affected more than anybody else.”
Ms Joyce Mhaville, news director, Independent Television (ITV)

Opinion leaders recognise that failed harvests mean farmers will have little income to spend on food or their children’s education. They say rural Tanzanians have become increasingly reliant on food aid and that diminished agricultural productivity has resulted in rural-urban migration. The comments of community leaders confirm that such concerns are not misplaced.

“Life here in Marangu is hard, especially now that we don’t have bananas which are our staple food.”
Ms Hilda Tesha, head of market association, Marangu

Many opinion leaders also feel that climate change has affected people’s health, yet the types of impacts cited depends on the individual’s knowledge of climate change.

“In tropical countries like ours where there is a lot of global warming ... there are places that had no malaria but now it is there”
EXECUTIVE EDITOR, MAJIRA

“A common man won’t be healthy because he won’t have enough food because of the change of climate. He becomes weak and has no power to do farming or conduct any business.”
Father Vitus Sichalwe, executive secretary, pastoral department, Catholic church

“In tropical countries like ours where there is a lot of global warming... there are places that had no malaria but now it is there.”
Aga Mbuguni, executive editor, Majira newspaper

Similarly, only opinion leaders who recognise climate change as a global issue think that it had an impact outside of Tanzania. Opinion leaders from the government and civil society, who had the best grasp of the issues, realise that despite its limited contribution to global greenhouse gas emissions, Africa and the rest of the developing world will suffer the most from global climate change. Others, however, say that it is the countries that pollute the most that are the most affected.

“In America, Europe, Asia, Japan, and even China they are affected, but they are greatly affected because they are the ones who have different types of gases which pollute the environment.”
Mr Geoffrey Ngulumbi, executive director, Kili Café

These leaders seem to conflate knowledge of climate change with the immediate harm they experience being caused by local pollution.

Where does responsibility lie?

Even those opinion leaders that realise industrialised countries bear a greater responsibility for causing climate change still think that Tanzania needs to do more to conserve its environment and minimize the impact of climate change on its citizens.

Opinion leaders who know about climate change understand that compared to industrialised countries, Tanzania has done little to contribute to the problem. They call on the industrialised countries to reduce their emissions. They say Tanzania is doing what it can as a developing nation with limited resources, but are adamant that the developed world must do more.

“This climate change is not our own problem. It’s a problem of the world as a whole... caused by pollution and gases produced by industries. Tanzania is part of the world and the problems we are experiencing are not ours. That is why we get so frustrated when the countries that are causing it are not giving us funds.”
Mr Richard Muyungi, Vice President’s Office

Yet most opinion leaders are not particularly forceful in blaming the industrialised world. This may be because they see climate change as part of a larger problem of general environmental degradation – much of which they feel is caused by local activities including deforestation, littering, and local pollution.

Do the worst affected understand climate change?

Opinion leaders think that people know the climate is changing through personal experience, but that the term “climate change” means little to most people. They say there is a need to find meaningful ways of communicating climate change to people that grounds the topic in people’s concerns and understanding of the environment.

Most opinion leaders recognise that, despite experiencing its impacts, the Tanzanian public knows little about climate change.

Many feel that the scientific complexities of climate change make it a difficult issue for the public to understand.

“To them [the public] either the rains are late or the rains didn’t come, or the sun is just too much or it’s kind of chilly in Dar es Salaam. What’s happening to the weather, believe me, they will not understand. Ask them what they understand by carbon dioxide emissions and climate change and they won’t have a clue what you are talking about.”
Ms Joyce Mhaville, news director, ITV

Opinion leaders say that most Tanzanians have their own explanations as to why the weather is changing. Father Vitus Sichalwe recognises that many people think that smoke has a role to play in determining local climatic conditions:

“They will explain to you according to their understanding. He can say the weather in Dar es Salaam, for example, has really changed, maybe it is too cold these days. They don’t know why. It could be because of the bombs in Iraq or perhaps one might even say that it’s because of the explosions in Mbagala [laughter].”

Some opinion leaders also feel that many do not understand the effects that tree-felling have on their natural environment.

“If you ask someone from the village why it is not raining they will tell you that the patterns have changed and they will never tell you that it is because of the trees that have been cut down and created a desert.”
Mr Abdalla Abbas Omar, president, Zanzibar Chamber of Commerce, Industry and Agriculture (ZCCIA)

The findings from the focus group discussions suggest otherwise. In fact, most Tanzanians cite deforestation as the main reason for the changing weather. One opinion leader made a critical distinction that helps explain why Tanzanians link deforestation, not climate change, to the changes they’ve witnessed.

“What they see, they understand.”
Father Vitus Sichalwe, executive secretary, pastoral department, Catholic church

Opinion leaders suggest that a lack of awareness of the concept of climate change may result in Tanzanians not realizing the scope and permanence of the environmental problems they face.

Opinion leaders believe the barriers to understanding climate are more conceptual than linguistic. Most feel that while the Swahili term for climate change is appropriate it is not sufficiently self-explanatory for people to understand the issue. The key, according to opinion leaders, is explaining the concept of climate change in a way that emphasises its impact on Tanzanians’ daily lives.

“The word itself can’t do anything. But if people can understand the meaning of that word – ‘The damages are 1, 2, 3’... The consequences are not known by people. They should know them first.”
Mr Hamad Rashid Mohammed, member of parliament for Wawi, Zanzibar

Taking climate change out of the abstract and explaining its impacts on people’s lives will be critical to public engagement.

“You know, this is like the HIV story. When it started nobody wanted to believe it, ‘it’s got nothing to do with me, and it’s

“To them [the public] either the rains are late or the rains didn’t come, or the sun is just too much or it’s kind of chilly in Dar es Salaam. What’s happening to the weather, believe me, they will not understand. Ask them what they understand by carbon dioxide emissions and climate change and they won’t have a clue what you are talking about”
NEWS DIRECTOR, ITV

not going to touch me,’ but before we knew it, it hit us left, right and centre. And the same thing is going to happen with climate change.”
Ms Joyce Mhaville, news director, ITV

Many opinion leaders say that the public needs to be educated and engaged in tree-planting and general conservation initiatives. Only a very few opinion leaders discuss how Tanzanians could use information on rain-water harvesting, different crop varieties, or more accurate weather forecasts. Aside from tree-planting initiatives, there are few methods of adaptation that have widespread acceptance among Tanzanian opinion leaders.

What response is required?

Opinion leaders are limited by their understanding of climate change, but there is a growing awareness that more needs to be done to help rural Tanzanians cope with their changing environmental conditions.

Climate change is a new issue for most Tanzanians and those in leadership positions throughout the country are no exception. This research suggests that the government and civil society are leading Tanzania’s response and are beginning to address the many challenges that climate change poses for their country.

Elsewhere, Tanzania’s response appears to be less informed. The media and private sector are still coming to grips with what the issue means for their sector and are limited by their relative unfamiliarity with the issue. Most community leaders lack an understanding of the global causes of climate change and are attempting to cope with drought and environmental degradation by encouraging previously entrenched methods of conservation such as tree-planting.

All opinion leaders, however, clearly recognise that more needs to be done to help Tanzanians respond to drought and changing environmental conditions. National policymakers and local community leaders alike say that those most impacted by Tanzania’s changing climate need to understand the changes they have experienced and require information that helps them to cope with its impacts.

Government response

Government representatives explain that the government is addressing climate change, but feel that programme implementation has been limited by a lack of funding. Yet outside of civil society groups, few opinion leaders know about the government’s approach to climate change, which suggests the need for more cross-sector communication.

Policy-makers suggest that the Tanzanian government’s response is at its early stages and that despite their efforts, much has yet to be achieved. Their comments suggest that the government’s work on climate change is generally reactive to the requirements of international climate change agreements. The specifics of the government’s response are laid out in its National Action Plan for Adaptation and are closely linked to its strategies for poverty reduction and economic development.

“You can’t talk about poverty and not talk about climate change.”
Ms Anna Mwasha, Ministry of Finance

While some recommendations put forth in the NAPA have been implemented, policy-makers say that few projects have received clean development funding. They claim that a lack of adequate resources, not a failure of planning, hinders their efforts at adaptation.

“If we had enough resources, we would have been able to reach very many people in a short time. We would have been able to reach very many specialists and enabled them to reach very many cattle farmers or fishermen in a short time. But this is what the government and the development partners can afford.”
Ms Mary Mashingo, Ministry of Livestock Development and Fisheries

The comments of government opinion leaders suggest that the government’s response to climate change focuses on three areas: improving resilience to extreme weather events, promoting adaptation among farmers and pastoralists and encouraging tree-planting and general environmental conservation.

Policy-makers also stress that one of their priorities is the preservation of Tanzania’s forested land. Their statements seem to indicate, however, that an overemphasis on the importance of forests as carbon sinks may limit the prospects for low-carbon development in Tanzania.

“We have 33,000,000 hectares... that way we can absorb all the gases, and that way we are also helping the world. Even if we were to have many industries we would still be able to absorb all the gases.”
Mr Richard Muyungi, Vice President’s Office

Finally, government leaders acknowledge that a gulf remains between policymaking and providing adaptation support for the communities most impacted by climate change. They say that more needs to be done to engage local communities and provide them with the information they need to survive.

“We are at the policy level. We have limits. The people that are on the site are the ones who ensure that the people get the information.”
Dr Mary Mashingo, Ministry of Livestock Development and Fisheries

Tanzanian civil society appears to be well placed to bridge that gap. Representatives from civil society are aware of the government’s climate change policies and active in local communities.

Outside of the NGO sector, knowledge of the government response is much more limited. For most opinion leaders, tree-planting is the primary manifestation of government action on environmental issues. While many are supportive of these efforts, some feel that the reliance on tree-planting is problematic.

“The government isn’t going to resolve anything by ‘cut a tree, plant a tree’. No, they have to give people an alternative for them to stop cutting the trees... The policy has not been there. If it was there, then actually they would have taken the steps now instead of attending all these conferences and then coming back and just sitting quiet. Give me an alternative then definitely people will listen, they want to survive, they want their kids to grow.”
Ms Joyce Mhavi, news director, ITV

NGO response

Tanzanian civil society is well-placed within local communities to organize and implement adaptation to climate change. They suggest that a focus on improving food security and local energy supply will be critical to ensuring the long-term success of any adaptation or conservation strategies.

Tanzanian civil society is responding to the challenges of climate change by raising awareness on the importance of environmental conservation and by promoting mitigation and adaptation techniques in local communities.

“If we had enough resources, we would have been able to reach very many people... We would have been able to reach very many specialists and enabled them to reach very many cattle farmers or fishermen in a short time. But this is what the government and the development partners can afford”
DIRECTOR OF PASTORAL SYSTEM DEVELOPMENT, MINISTRY OF LIVESTOCK DEVELOPMENT AND FISHERIES

While traditional tree-planting campaigns are part of the portfolio of NGO activities, civil society groups understand that most Tanzanians require alternative sources of energy if deforestation efforts are to succeed. Both NGO representatives said that their organisations were promoting energy efficiency in rural areas, including the use of “environmentally friendly cooking stoves”.

Civil society groups are also engaged in scaling up the adaptation strategies among local farming and pastoral communities. The Dodoma Environmental Network is promoting the use of cassava, a crop more drought-resistant than those traditionally harvested in central Tanzania. The response of Tanzanian civil society is also closely tied to the government and international community’s work on environmental issues. Although generally pleased with the level of coordination with the government, the representative from the Tanzania Traditional Energy Development and Environment Organisation was frustrated with the international community’s failure to follow through with Clean Development Mechanism funding for its projects.

Private-sector response

The Tanzanian private sector is concerned about the impacts of climate change on the country, but do not feel the issue is critical to the success or failure of their business. Greater involvement by the private sector on climate change may help promote models of environmental conservation that resonate with economic development needs of most Tanzanians.

Representatives from the Tanzanian private sector recognise that changes in the environment will affect their clients, customers and the economy in general, but reducing emissions is simply not on their agenda. Their response to climate change is based mainly on pre-existing corporate social responsibility initiatives that focus on promoting environmental conservation and tree-planting.

While a few opinion leaders mention the use of environmental messaging in business advertisements, their comments suggest that the Tanzanian private sector has yet to engage with the issue of climate change. The exception to this is the IPP Media Group, whose owner, Reginald Mengi, was singled out for his efforts on environmental conservation.

One interviewee recognised this trend and said more could be done to strengthen the private sector’s engagement with the issue.

“To be honest we have never had a clear policy apart from the fact that we are talking about this issue and that it is a global issue. We should be among the stakeholders that create awareness in our members and the entire business community but we do not.”
Mr Abdalla Abbas Omar, president, ZCCIA

Some, however, are sceptical of the prospects for increased engagement from the private sector. They suggest businesses may be reluctant to buy into mitigation and conservation efforts that are financially burdensome:

“Most companies are more business-oriented than [interested in] looking after environment conservation, especially here in Tanzania.”
Mr Josiah Mshuda, environment co-ordinator, Dodoma Environmental Network of Tanzania

“The government isn’t going to resolve anything by ‘cut a tree, plant a tree’. No, they have to give people an alternative for them to stop cutting the trees... The policy has not been there. If it was... they would have taken the steps now instead of attending all these conferences and then coming back and just sitting quiet”

NEWS DIRECTOR, INDEPENDENT TELEVISION

Local response

Local community leaders have only a limited knowledge of climate change and are attempting to address what they feel are the local causes of drought and environmental degradation. For most, this means tree-planting. There is a clear need to inform local leaders about climate change and to coordinate with them on how best to help their communities adapt.

Opinion leaders from local communities are struggling with how to respond to environmental stresses caused by drought and a growing population. With only limited knowledge of climate change and few resources, most are focusing on what they see as the local causes of drought and related environmental issues. They are doing what they can to raise awareness of the impacts of deforestation and to encourage the maintenance of a clean and healthy local environment.

“The [10-cell leaders]ⁱ deal with the destruction of environment. They advise people on how to dispose garbage properly by digging up holes for the garbage and that they should treat their drinking water.”
Mr Jumanne Shaban, head, local fisherman’s association, Bagamoyo

Yet most local leaders do not see their efforts bearing much fruit. In particular, they say that more needs to be done to educate their communities on environmental conservation. One community leader was more specific, emphasising that local communities need more information to plan for and adapt to changing environmental conditions.

“The government should try and give special programmes on the radio, not on TV - because radios are available everywhere in the village. The professionals should work hard to explain... ways in which we can prevent... these things, as they say El Niño is coming.”
Mr Mark Moshia, village chairman, Mpwapwa

ⁱ In Tanzania, each household belongs to a 10-cell unit and a number of these, each consisting of approximately 10 households, make up a village. In turn, these villages form wards, which together form a district (Barongo et al, 1992).

Opinion leaders across Tanzania recognise the importance of local leadership, especially in rural communities. According to Mr Geoffrey Ngulumbi, from Kili Café: *“If the chief gives instructions it is easy for people to respect them.”*

Media response

The media are daunted by the challenge of reporting on climate change. While leading media representatives clearly understand the issue, they feel its complexity inhibits the media’s ability to report on climate change. They say climate change needs to be made relevant to the lives of ordinary Tanzanians. Improving the media’s ability to report on climate change and engage a more diverse audience will be crucial to Tanzania’s response.

Despite the relatively small number of interviewees from the media, this research suggests that the media generally feels under-equipped to cover climate change. Media representatives say that they are not knowledgeable enough about it to fully engage the public on the issue.

“We’ve come to realise that climate change is bigger than our little imagination.”
Ms Joyce Mhaville, news director, ITV

They feel that the science and complexity of climate change make it a particularly difficult topic to cover and feel more information and support is required for them to report about it adequately, as Aga Mbuguni from the Majira newspaper comments: *“I personally know about this issue, but a common staff member does not understand.”* It seems that organisations report on climate change infrequently and coverage of environmental issues tends to be based on current events, such as droughts and extreme weather.

Some feel that the Tanzanian public are used to coverage of politics and entertainment and wouldn’t be interested in climate change.

The key, is making climate change relevant to ordinary Tanzanians, as Assumpta Massoi from the Tanzania Broadcasting Corporation (TBC) says: *“How can we deliver that information and make it our own and relate it to what is going on – that is still our biggest challenge for us as news journalists.”*

Media representatives recognise that there is a danger of Tanzanians being affected by an issue that they know little about. They feel that further coordination between climate change experts, civil society, the government and the media, is needed to increase public engagement.

“All the key players need to plan together and strategise. Then people will listen. Because people are seeing what is happening but they don’t understand. They just say ‘Ah! Mabadiliko ya hali ya hewa! [‘climate change’]”
Ms Joyce Mhaville, news director, ITV

Leaders from outside the sector say that the media plays a critical role in providing the public information about their changing environment. Several mentioned how the media – TBC and ITV in particular – broadcast programmes, speeches and public service announcements with environmental messages. Some, however, feel that reporting on key social issues has suffered recently due to the media’s increased focus on revenue generation.

“[TBC] used to have specific programmes on the environment. There were songs and there was a lot of excitement but since the liberalisation of media ownership, everyone is more concerned with the advertisements and how to make money.”
Father Vitus Sichalwe, executive secretary, pastoral department, Catholic church

It will be important for the media to develop its understanding of climate change given that people cite media as a primary source of information on climate change.

5 Conclusion

This research has shown that public awareness and understanding of global climate change is low in Tanzania. Climate change terminology is poorly understood and its translation in Swahili does not convey its global causes or context. More Tanzanians recognise that their climate is changing than are aware of the term ‘climate change.’ Climate change is often literally interpreted to mean ‘changes in weather’.

In this context, many Tanzanians have their own ways of explaining why their weather patterns and environment have changed. They draw on existing knowledge and beliefs, both to explain the changes they have witnessed and to process new information on climate change. While most Tanzanians see a link between human activity and changes in climate, this is very localised. Many Tanzanians link individual human activities, such as tree-felling and pollution, to degradation of the local environment and changes in weather patterns, yet most are not aware that pollution from outside their locality increases levels of greenhouse gases and has contributed to the changes they’ve experienced.

Tanzanian opinion leaders are struggling to provide leadership on climate change. They need to know more about climate change in order to communicate confidently on the issue and incorporate mitigation and adaptation strategies into their decision making. Although the media, together with schools, are the main source of information on climate change for the general public, there is evidence to suggest that media lacks sufficient knowledge to effectively inform audiences about climate change and facilitate public discussion.

It is clear that communication and information provision is going to be central to Tanzania’s response to these challenges. Many opinion leaders spontaneously mention the need for better communication on climate change, and all agree that the general public needs more information. Although this research sets out to present the perceptions of the Tanzanian public on climate change, and not to detail a climate change communication strategy, various communication implications can be drawn from it:

Provide information

Firstly, the media has a critical role to play in providing information on climate change and supporting others to do so, including governments, national and international NGOs, scientists, religious leaders and community leaders. Tanzanian citizens have a fundamental right to access information on an issue that affects their lives. Increased awareness and understanding of global climate

change will enable and equip citizens and communities to discuss the problem, adapt to the effects of climate change and make more informed long-term choices about their future.

Efforts to improve climate change communication need to confirm to people that weather patterns are changing and that extreme weather events are more likely to occur. They also need to raise awareness of global climate change and the ways in which it relates to people’s lives and livelihoods. People need information on ways to adapt to climate change and prepare for extreme weather events.

Communication efforts should also help people to build simple, correct mental models of how climate change works, being mindful of people’s existing understanding. In order to do this appropriate climate change terminology should be developed and tested in local languages. Evidence and facts need to be communicated in a way that is locally relevant using a variety of news and non-news platforms.

Facilitate policy and public debate

Secondly, the media needs to facilitate accessible public debate. Tanzania is being affected by climate change, and internally driven, relevant debate on the issue is essential. The news and non-news media will shape and mediate that debate to a very substantial extent. For that reason, building the capacity of the media and providing support for “public spaces” which enable discussion on climate change that draws on Tanzanian voices and experiences, engaging citizens, local interest groups, civil society actors, religious leaders and policymakers from all levels of government, will be crucial. These spaces, which can be created through talk shows, call-ins and other popular interactive platforms, can be forums to exchange information, create understanding and plans for action. They can also serve to facilitate better cross-sector communication between government, NGOs, the private sector, the media, and local and community leaders.

Encourage accountability

Thirdly, debate can increase accountability, enabling citizens to exert pressure on their own governments with respect to climate change policies: adaptation funding, technology transfer, emissions reduction and other response strategies. Only when Tanzanian citizens are fully informed about, and able to debate climate change, will they begin to influence the national and international climate change policies and processes which affect their lives.

“How can we deliver that information and make it our own and relate it to what is going on – that is still our biggest challenge for us as news journalists”

MANAGING EDITOR, TBC

“All the key players need to plan together and strategise... people are seeing what is happening but they don’t understand”

EXECUTIVE SECRETARY, CATHOLIC CHURCH

References

1 Global Humanitarian Forum Human Impact Report: *Climate Change, The Anatomy of a Silent Crisis* (2009), ghfgeneva.org/Portals/0/pdfs/human_impact_report.pdf

2 “By 2020, in some countries, yields from rain-fed agriculture could be reduced by up to 50%”: IPCC Fourth Assessment Report: *Climate Change 2007*, Intergovernmental Panel on Climate Change, www.ipcc.ch/publications_and_data/ar4/syr/en/contents.html

3 “Declining crop yields, especially in Africa, are likely to leave hundreds of millions without the ability to produce or purchase sufficient food”: Stern, Lord N, *Stern Review: The Economics of Climate Change* (2006), www.hm-treasury.gov.uk/stern_review_report.htm

4 *UN set to double Kenya food aid* (BBC News, 18 March 2009, news.bbc.co.uk/1/hi/world/africa/7951332.stm); *Ethiopia appeals for urgent aid* (BBC News, 12 June 2008, news.bbc.co.uk/1/hi/world/africa/7451936.stm); *Somalia ‘worst drought in decade’* (BBC News, 13 May 2009, news.bbc.co.uk/1/hi/8047273.stm); *Uganda facing food crisis* (The Guardian, 6 July 2009, www.guardian.co.uk/katine/2009/jul/06/uganda-food-crisis)

5 “Up to 80 million more people will be exposed to malaria in Africa if warming extends to 4C”: Stern, Lord N, op cit

6 Global Humanitarian Forum: *Climate Change, The Anatomy of a Silent Crisis*, op cit

7 IPCC Fourth Assessment Report: *Climate Change 2007*, op cit

8 “In the complex web of causes leading to social and political instability, bloodshed and war, environmental degradation is playing an increasingly important role – this is the “Greenwar factor””, argued a 1991 report from Panos Publications, *Greenwar: Environment and Conflict*

9 Examples of climate change-related conflicts already happening include “fighting between pastoralists and farmers in the Oromia and Ogaden regions of Ethiopia, inter-clan fighting in Somalia, and increased fighting during drought periods in Nigeria” according to the Global Humanitarian Forum report *Climate Change, The Anatomy of a Silent Crisis*, op cit

10 *United Republic of Tanzania, National Adaptation Plan of Action 2007*, Vice President’s Office, Division of Environment, p5, unfccc.int/resource/docs/napa/tza01.pdf

11 Ibid, p 6

12 Ibid, p 12

13 Research carried out with 3,164 South Africans in 2008, for example, revealed that more than a quarter (28%) of respondents had not heard about climate change, and that very few (less than 25%) knew either “a lot” or “a fair amount” about the subject. See *Blowing Hot or Cold? South African Attitudes to Climate Change* by J Seager (2008), in *Human Sciences Research Council Review* 6(3), www.hsrb.ac.za/HSRC_Review_Article-105.phtml. Similarly, a 2008 Gallup poll showed that 63% of South Africans had either never heard of climate change or global warming, or they said they didn’t know or refused to answer: www.gallup.com/poll/121526/major-economies-threat-climate-change.aspx

14 A 2007 BBC World Service poll revealed that about 50% of Nigerians and Kenyans had heard or read either nothing at all or not very much about global warming or climate change: *All Countries Need to Take Major Steps on Climate Change: Global Poll* news.bbc.co.uk/1/shared/bsp/hi/pdfs/25_09_07climatepoll.pdf

15 A 2009 BBC World Service poll revealed that 52% of Kenyans and 48% of Nigerians regard climate change as a “very serious” problem: *Climate Concerns Continue to Increase: Global Poll* news.bbc.co.uk/1/shared/bsp/hi/pdfs/04_12_09climatepoll.pdf

16 *The World Speaks*: an Annual BBC Global News Poll, in Association with Globescan, BBC Global News (2010), downloads.bbc.co.uk/worldservice/the_world_speaks/presentation.pdf

17 Internal migrants in Ghana mentioned scarcity of fertile land, unreliable rainfall and low crop yields as reasons for leaving their homes. See “We Are Managing!”: *Climate Change and Livelihood Vulnerability in Northwest Ghana* by K Van der Geest, 2004, Leiden: Afrika-Studies Centrum

18 *The History of Environmental Change and Adaptation in Eastern Saloum, Senegal: Driving Forces and Perceptions*, by C Mbow et al (2008) in *Global Change and Planetary Change*, 64, pp 210-221

19 *Farmers’ Perceptions of Climate Change and Agricultural Adaptation Strategies in Rural Sahel*, by O Mertz et al (2009) in *Environmental Management*, 43(5), pp 804-816

20 A 2007 survey of southern Africa found that farmers saw a lack of information on climate change effects and potential adaptation strategies as significant barriers to adaptation. See *Micro-Level Analysis of Farmers’ Adaptation to Climate Change in Southern Africa*, by C Nhemachena and R Hassan (2007), IFPRI Discussion Paper 00714, www.ifpri.org/publication/micro-level-analysis-farmers-adaptation-climate-change-southern-africa

21 *The Perception of and Adaptation to Climate Change in Africa*, by David J Maddison (2007), World Bank Policy Research Working Paper No. 4038, ssrn.com/abstract=1005547

22 *Climate Change in the American Mind: Americans’ Climate Change Beliefs, Attitudes, Policy Preferences, and Actions*, by A Leiserowitz et al (2009), Center for Climate Change Communication, Dept of Communication, George Mason University, www.climatechangecommunication.org/images/files/Climate_Change_in_the_American_Mind.pdf

23 *Public Understanding of Climate Change* (2005), by A Darnton for Futerra

Appendix I Opinion leaders interviewed

Name and title	Organisation	Sector
Mr Richard Muyungi <i>Assistant director, Division of the Environment</i>	Vice President’s Office	National government
Dr Mary Mashingo <i>Director, Pastoral System Development</i>	Ministry of Livestock Development and Fisheries	National government
Ms Anna Mwashha <i>Director, Poverty Reduction Division</i>	Ministry of Finance	National government
Hamad Rashid Mohammed <i>Member of parliament for Wawi, Zanzibar</i>	Civic United Front Party	Local government
Mr Mark Mosha <i>Village chairman</i>	Mpwapwa village	Local government
Ms Joyce Mhaville <i>News director</i>	Independent Television (ITV)	Media
Assumpta Massoi <i>Managing editor</i>	Tanzania Broadcasting Corporation (TBC)	Media
Aga Mbuguni <i>Executive editor</i>	Majira newspaper	Media
Mr Geoffrey Ngulumbi <i>Executive director</i>	Kili Café	Private sector
Mr Abdalla Abbas Omar <i>President</i>	Zanzibar Chamber of Commerce, Industry and Agriculture (ZCCIA)	Private sector
Ms Nelly Ndosa <i>Head of retail banking</i>	CRDB Bank	Private sector
Father Vitus Sichalwe <i>Executive secretary</i>	Pastoral department, Catholic church	Religious institution
Sheikh Mbaya Mohamed Mbaya <i>Head of Muslim community</i>	Jitimae mosque, Magogoni area, Zanzibar	Religious institution
Mr Josiah Mshuda <i>Environment co-ordinator</i>	Dodoma Environmental Network of Tanzania	NGO
Ms Mary Swai <i>Staff</i>	Tanzania Traditional Energy Development and Environment Organisation	NGO
Ms Hilda Tesha <i>Head</i>	Local market association, Marangu	Association
Mr Jumanne Shaban <i>Head</i>	Local fishermen’s association, Bagamoyo	Association

Appendix 2 Tanzania advisory group

Name	Organisation
Dr Charles Ehrhart	Care International
Dr Euster Kibona	Environmental Protection Management Services
Dr Amos Majule	Institute of Resource Assessment, University of Dar es Salaam
Mr Steven Mwakifwamba	Centre for Energy, Environment, Science, and Technology
Mr Jason Rubens	WWF Tanzania
Ms Linda Stephen	Environmental Protection Management Services
Mr Adrian Stone	UK Department for International Development, Tanzania
Dr Pius Yanda	Institute of Resource Assessment, University of Dar es Salaam

Appendix 3 Methodology overview

Tanzania Talks Climate employs a qualitative research design. Qualitative approaches – which generate non-numeric data – are particularly useful for exploratory research on topics for which there is little previous research. Through focus groups and in-depth interviews, *Tanzania Talks Climate* investigates the meaning that people attach to climate change, and explores how they experience climate-related issues and impacts.

A total of 12 focus groups with citizens and 17 in-depth interviews with opinion leaders were carried out across the six locations in Tanzania from August to October 2009.

The six fieldwork locations were selected on the basis of desk research and consultation calls with the Tanzania advisory group. The six locations selected were: Dar es Salaam and Bagamoyo; Moshi and Marangu in the Kilimanjaro region; and Mpwapwa and Kibaigwa in the Dodoma region.

Focus group discussions

Focus groups were held with farmers and fishermen, pastoralists and business people, women and men, rich and poor, rural and urban. Given the implications of climate change for certain livelihoods in Tanzania, farmers and pastoralists (in Marangu, Mpwapwa, Kibaigwa) and fishermen (in Bagamoyo) were also purposefully targeted.

Two focus group discussions were held in each location. The focus groups were single sex with approximately eight participants in each who fell within a similar age range. The age ranges were 18-24 years, 25-34 years and 35-50 years. Age and gender were taken into consideration, in order to facilitate easy conversation among participants.

Participants in each focus group occupied a similar socio-economic class or profession. Socio-economic class was determined based on participants’ income, education and profession in Dar es Salaam; however, it was not possible to determine socio-economic class outside of Dar es Salaam due to limited data on socio-economic indicators. Profession was therefore used as a guide in these areas.

Moderators for each group were the same gender as the participants in the group. All discussions were conducted in Swahili.

Structure of the discussions

Moderators used a structured discussion guide to lead the focus groups. This was refined after the *Africa Talks Climate* pilot study in Nigeria during which several improvements were made.

To begin with, participants were shown eight images of nature, including trees, water and the sun, and asked if they had any words to describe the images all together. In this way the discussion guide sought to elicit words used to describe “nature”. The participants were then asked if they had noticed any changes in nature over the course of their lifetimes, and invited to share stories about these changes.

The second set of images shown to participants represented a range of issues that can be linked to climate change. There were 15 such images, showing issues such as drought, crop failure, erosion and flooding. Participants were asked if the pictures had anything in common, and then invited to choose the two images which had the greatest impact on their lives. A discussion of the chosen images followed.

The next section of the discussion guide introduced the concepts of climate change and global warming, without actually introducing the terms. Two statements were read out to participants:

Statement 1 Scientists are saying that human beings are causing weather patterns over time to change around the world.

Statement 2 Scientists are saying that human beings are causing the temperature of the earth to increase.

Participants’ reactions to these statements were discussed. Finally, the terms “climate change” and “global warming” were explored. These terms were intentionally introduced relatively late in the discussion guide based on experience from the pilot study in Nigeria, which suggested that most participants would not be familiar with the terms.

The subsequent sections of the guide explored responses to climate change, barriers and facilitators to environmental stewardship, rural-urban migration and the potential role of media.

With the exception of Nigeria, the discussion guide was the same for all *Africa Talks Climate* countries. It was translated into local languages through a consultation process with the moderators who spoke those languages.

In-depth interviews

The research team conducted 17 in-depth interviews with opinion leaders to elicit the views of policymakers and opinion formers on the issue of climate change. These opinion formers were individuals with a particular interest in climate change, or an informed opinion from a certain field, region or subject area within the country. Interviewees were selected based on desk research, and consultation with the local advisory group and local researchers.

Opinion leaders were selected from six different sectors, according to a quota. The sectors were: government, the media, the private sector, religious institutions, local and national associations (for example, farming associations) and NGOs and academic institutions. In Tanzania, the quota was achieved for each sector.

Sector	Quota	Achieved in Tanzania
Government (3 national; 2 local)	5	5
Media	3	3
Private sector	3	3
Religious leaders	2	2
Local associations (such as farming associations)	2	2
NGOs, academics	2	2
Total	17	17

In Tanzania, as in all *Africa Talks Climate* countries, every effort was made to speak to the climate change focal point at the national government level. The remaining ministries were selected according to the ways in which climate change played out in the country. In Tanzania, representatives from the Ministry of Livestock Development and Fisheries, the Ministry of Finance and the Vice President’s Office were interviewed.

In the media sector, representatives were selected to include perspectives from radio, television and print media. Both the private and public media were also represented.

In the private sector, a Tanzanian-owned bank, an association representing small-scale coffee growers and a local chamber of commerce were represented.

At the local government level, a member of parliament representing an area of Zanzibar and a village chairman from Mpwapwa were interviewed.

The two religious leaders consulted represented Tanzania’s main religions – Christianity and Islam. A sheikh from a mosque in

Zanzibar and a representative from the Catholic church based in Dar es Salaam were selected.

The local associations were represented by a fishermen’s group from Bagamoyo and an association of market women from Marangu.

Finally, representatives from two NGOs with a focus on poverty and the environment were interviewed.

All the opinion leaders interviewed gave permission for their reflections and opinions to be used in Africa Talks Climate reports.

Analysis and reporting

All focus group discussions and in-depth interviews were recorded and transcribed. Transcripts were produced in the original language of discussion by local transcribers. These transcripts were checked for accuracy against the audio files by the focus group moderators and Trust researchers fluent in Swahili. English transcripts were then produced based on the Swahili transcripts by a team of translators. These translations were checked for accuracy against the Swahili transcripts. Any identified inconsistencies and anomalies were raised with the research team in Tanzania and corrected. A similar process was used to produce transcripts for the in-depth interviews.

The transcripts from the focus groups and interviews were systematically coded by a team of researchers, using a common list of codes. This list was generated through a detailed consultation

process that began with open coding. Inter-coder reliability ultimately averaged 0.92. Coding enabled the researchers to group the data according to emerging themes; each code was then analysed to pull out the insights and findings.

Guiding principles

Africa Talks Climate endeavoured to adhere to the following guidelines:

- This research initiative will be led by BBC WST’s Research and Learning Group (R&L) researchers working across Africa.
- R&L London will co-ordinate the research and provide support for research design, analysis and reporting.
- Informal advisory networks will be established at a strategic and country level to guide research approach, delivery and reporting.
- Thematic training will draw on local academic or other institutions with expertise and local knowledge such as the International Development Research Centre (IDRC).
- All moderators and interviewers undertaking fieldwork will receive intensive skills-based and thematic training on climate change.
- Any research agency employed to help deliver fieldwork will employ local researchers/moderators and their work will be quality controlled by R&L.

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