



# Research Report

SENEGAL

BBC WORLD SERVICE TRUST



EMILY LEROUX-RUTLEDGE/BBC WST



## Senegal Talks Climate

The public understanding of  
climate change

[www.africatalksclimate.com](http://www.africatalksclimate.com)

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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 Uganda<sup>i</sup>. They also carried out interviews with nearly

<sup>i</sup> 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 a policy briefing and executive summary report from *Africa Talks Climate*, visit [www.africatalksclimate.com](http://www.africatalksclimate.com).

# Executive summary

In May 2009, the BBC World Service Trust's Research and Learning Group, on behalf of the British Council, conducted research in Senegal to gauge public understanding of climate change. The research consisted of 12 focus-group discussions with Senegalese 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 Senegal's response to climate change.

## Key findings

- Most Senegalese<sup>i</sup> do not understand the science of climate change. They have, however, noticed changes in the weather and seasons. They tell of drought, increases in temperature and loss of distinct rainy seasons. Most people do not connect these with global climate change.
- People in Senegal are keenly aware of environmental degradation and depletion of natural resources, but they make little distinction between this degradation and climate change.
- Drought and scarcity of fish are causing frustration and despair. Farmers and fishermen do not have a sense of how they would cope if the problems became worse. Senegalese are also worried about bush fires, deforestation, flooding, rubbish and air pollution. Opinion leaders are particularly concerned for rural communities.
- There is a strong tendency for Senegalese to hold themselves individually and 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 Senegal.
- Although opinion leaders recognise that climate change is a global problem, only a few recognise that industrialised countries are most responsible for causing it.
- The Senegalese public has a low awareness of the concepts of climate change and global warming. Many understand “climate change” to mean changes in the weather or seasons.
- Opinion leaders tend to feel that climate change is an expert topic about which they know very little. While they can identify its effects, very few feel they have sufficient knowledge to explain the concept.
- Climate change terminology is poorly understood and does not have standard translations in Wolof and Jola. Appropriate words are thus not accessible to most Senegalese, which prevents people from discussing the issues. Opinion leaders agree that climate change terminology is a barrier that prevents public engagement.
- The media and schools are people's main source of information on climate change. Yet the media appear to lack sufficient knowledge to inform audiences effectively.
- Senegalese draw on existing knowledge and beliefs to explain the effects of climate change. For example, many think that deforestation in their local area reduces local rainfall, and some

<sup>i</sup> A note about language: while this report refers to the views of “Senegalese”, it only represents those Senegalese who participated in the research. Research participants have sometimes been referred to as “Senegalese” for ease of reading.

incorrectly believe that smoke from cars and factories damages the ozone layer, making it hotter. Some see changes in the weather as the will of God; this view is particularly prevalent among women and rural populations.

- Most opinion leaders agree on the need to raise awareness of climate change. Yet there is a tendency to focus on addressing the causes of climate change rather than adapting to its impacts. A few emphasise the need to prioritise the provision of information that will enable the most vulnerable people to adapt.
- There appears to be little cross-sector co-ordination and communication on climate change. Links between government and NGO initiatives appear to be strongest, while local and community leaders and the private sector seem less informed about decisions made at a national level. A lack of knowledge of climate change is most apparent among media representatives.
- Many people criticise government at all levels for a lack of visible action on climate change and the environment. The government representatives interviewed say that more needs to be done to tackle the impacts of climate change on Senegal's coasts and rural water supplies, to regulate carbon dioxide emissions and to reduce bush fires and deforestation. They suggest that the major challenge is a lack of financial resources – but that in order to overcome this, effective co-ordination between government institutions and international involvement will be essential.

## RECOMMENDATIONS

The information and communication needs of Senegalese citizens needs to be at the heart of any national response to climate change. The ability of Senegalese people 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 the effects of climate change and make informed long-term choices about their future.

Opinion leaders need access to information on climate change. Local leaders from government and the community, including religious leaders, have unrivalled access to communities, and are in a position to communicate and inspire citizens to respond to climate change and implement local adaptation strategies. Yet they tend to be some of the least informed about global climate change and its causes and effects, and thus need support in turning this around.

Public debate will also be key to increasing 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 have a critical role to play in responding to climate change, and in 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.
- Confirm people's observations that weather patterns are changing and that extreme weather events are likely to occur more often.



- Provide people with access to correct information about the causes of climate change.
- Build simple, correct mental models of how climate change works. In doing so, be mindful of people’s existing frames of reference (eg in relation to trees, God, ozone depletion, air pollution and heat) which can function as barriers or facilitators to effective climate change communication.
- Invest in efforts to develop and test appropriate climate change terminology in local languages.
- Clarify how climate change does and does not relate to environmental degradation.
- Provide people and communities with access to information on practical ways to adapt to climate change and prepare for extreme weather events.
- Pay particular attention to the needs of information-poor rural communities. For them, climate change represents a tipping point. They need targeted information and resources that will enable them to cope with and adapt to its impacts.
- Communicate in ways that are locally relevant, using a variety of news and non-news platforms.
- Increase opinion leaders’ understanding of global climate change so that they can communicate confidently on the issue and incorporate it into their decision-making.
- Increase opinion leaders’ understanding of adaptation and its importance for Senegal’s response to climate change.
- Provide local leaders with access to information on climate change, bearing in mind that local adaptation strategies need to take into account local leaders’ understanding of the issue.
- Provide information about climate change to the Senegalese public through the media and schools.

Facilitate policy and public debate

- Build the capacity of news and non-news media to support more effective public debate on climate change in Senegal.
- 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 Senegalese voices and experiences in discussions and debates: engage citizens, local interest groups, civil society actors, religious leaders, and policymakers from all levels of government.
- Facilitate greater dialogue between those opinion leaders who are already working on climate change and those who are not, to break down perceptions of it as an elite discussion.
- Build a sense of immediacy and encourage the sharing of current examples of adaptation to climate change. Harness Senegalese people’s understanding and experience of their changing weather and environment to create a relevant discourse that promotes citizen engagement in Senegal’s response to climate change.

Encourage accountability

- Develop mechanisms which enable Senegalese 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 Senegalese 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.<sup>1</sup> It is predicted that Africa will be one of the regions worst affected by climate change.<sup>1</sup> 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.<sup>2</sup> 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.<sup>3</sup> Indeed, there have been recent food crises in Kenya, Uganda, Somalia and Ethiopia.<sup>4</sup> 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.<sup>5</sup> 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.<sup>6</sup>

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

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.

*Africa... small islands are especially vulnerable”.*<sup>7</sup>

The links between environmental degradation, political tension and conflict have been highlighted for many years.<sup>8</sup> 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.<sup>9</sup>

Climate change in Senegal

Climate change presents an additional stress for Senegalese already struggling with the challenges posed by climate variability, ongoing environmental degradation and widespread poverty. Located on the western coast of Africa, Senegal is a land of geographic and climatic contrasts. Most of the country is subject to the weather conditions of the Sahel zone, which is characterised by a single rainy season that lasts for up to three months.<sup>10</sup> The region is prone to unstable and irregular rainfall, and has experienced recurrent droughts, for periods ranging from decades to centuries, that have, in some cases, been attributed to internal natural variability of the climate. The variability of rainfall during the rainy season is increasing, making weather harder to predict and droughts more severe, particularly in northern Senegal, an area that is highly susceptible to desertification. Like its neighbouring countries, Senegal was hit by serious drought in the late 1960s, which has affected the country’s ecology and environment. Any discussion of climate change in Senegal must be set within a context of this climate variability.

The phenomenon of desertification in Senegal is connected to soil degradation and the overworking and mismanagement of land. It is accelerated by recurrent droughts and lower-than-average rainfall.<sup>11</sup> Poverty and a rapidly increasing population compound the

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 there 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.<sup>13, 14</sup> 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,<sup>15, 16</sup> 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.<sup>17, 18, 19</sup> Lack of information regarding climate change is seen by some as a critical barrier in dealing with its effects.<sup>20, 21</sup> 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.<sup>22</sup>

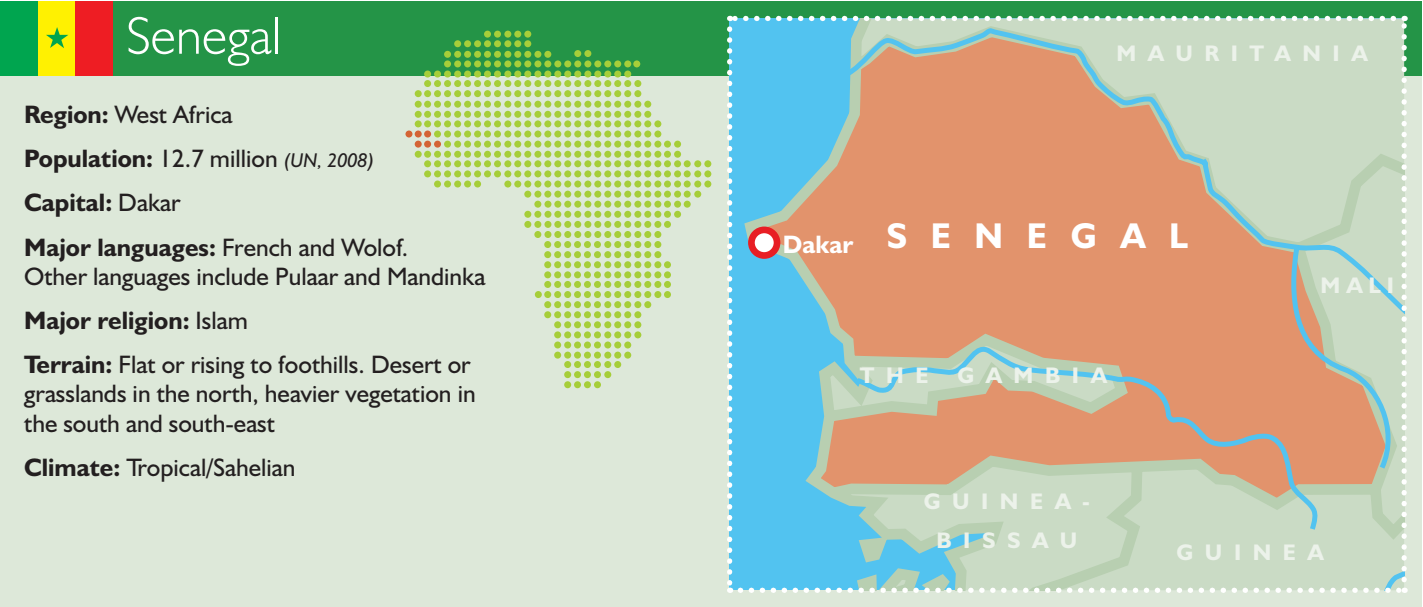
A lack of public understanding of climate change is not exclusive to Africa.<sup>1</sup> A review of research on the perceptions of climate

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*”.<sup>23</sup> Similarly, research in the United States has shown that people often have basic misconceptions about climate change.<sup>24, 25</sup> 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.<sup>26, 27</sup> 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,<sup>28</sup> 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.<sup>29</sup> 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	IPCC	Intergovernmental Panel on Climate Change
CDM	Clean Development Mechanism	NAPA	National Adaptation Programme of Action
CFA franc	African Financial Community currency	NGO	Non-governmental organisation
CFC	Chlorofluorocarbon	R&L	BBC World Service Trust Research and Learning Group
GDP	Gross Domestic Product	UNEP	United Nations Environment Programme
IDRC	International Development Research Centre	UN-Habitat	United Nations Human Settlements Programme
IED Afrique	Innovations, Environnement, Développement Afrique		



threat. Desertification, land degradation and drought are inextricably linked and are both a cause and a result of climate change.<sup>29</sup>

The interrelation of climate change with other factors is complex and knowledge of it is still evolving. However, in Senegal, climate change is projected to result in rainfall variability, with implications for water security and agriculture. Senegal has a largely agrarian society<sup>i</sup> and subsistence farming remains prevalent.<sup>30</sup> Agriculture continues to play a large role in Senegal’s Gross Domestic Product (GDP) but this is diminishing because of decreased agricultural production. In 2007, agriculture constituted approximately 15% of the country’s GDP, compared with 25% in 1987.<sup>31</sup> The continued decrease in agricultural production has meant that Senegal has experienced a food deficit and become reliant upon aid and imported food.<sup>32</sup>

Food security is further threatened by declining fish stocks, which, like agriculture, are susceptible to the impacts of climate change. Fisheries are an important source of dietary protein, employment and revenue. A recent World Fish Centre report says that Senegal’s economy is “*highly vulnerable*” to the effects of global warming on fish stocks, and has a limited capacity to adapt. The issue is compounded by overfishing and degradation of the coastline.<sup>33</sup>

Further projections include coastal erosion, flooding and salinisation of fresh water sources, which will result from and be compounded by rising sea levels. Rises in sea level are projected to cause fresh water supplies to become contaminated through saltwater intrusion. This will exacerbate pre-existing issues of water scarcity.<sup>34</sup> A sea-level rise of 1m is projected to inundate and erode more than 6,000 sq km of land, much of it

<sup>i</sup> Agriculture in Senegal occupies roughly 70% of the country’s working population. In the coastal south, 40% depend on fishing for employment and many more for dietary protein. Nearly two-thirds of Senegal’s population live near the coast.

wetlands.<sup>35</sup> These projections could have serious implications, given that the majority of the population live near the coast and 90% of Senegal’s industry is concentrated in the coastal region around the capital.

Changes in climate are also reportedly encouraging migration and accelerating urbanisation<sup>36</sup> in a country where more than half of the population already lives in urban areas; of these, 76% live in slums.<sup>37</sup> In addition to its negative impacts on industry and human settlements, climate change threatens Senegal’s cultural heritage. St-Louis, a Unesco World Heritage Site, is the African city most severely threatened by sea-level rise, according to UN-Habitat.<sup>38</sup>

In response to climate change, the government of Senegal developed a National Adaptation Programme of Action (NAPA) in 2006. This focuses on major impacts and vulnerabilities in three sectors of particular relevance: agriculture, coastal zones and water resources. It was felt that these three sectors represented the majority of the population (75%), and the NAPA prioritises the potential adaptation needs and options of these sectors.<sup>39</sup>

A United Nations Environment Programme (UNEP) evaluation of Senegal’s NAPA suggested that there was a good degree of country buy-in of the NAPA in Senegal, from the local to the national level. It also noted that the NAPA identified ways in which adaptation could be incorporated in to existing policies, and mobilised using the well-established institutional mechanisms in the country, including the National Climate Change Committee and other task forces, requiring little – if any – change in government. Yet, as in other countries, the financial sustainability of Senegal’s NAPA remains in question.<sup>40</sup> The government currently lacks funding to implement it.<sup>41</sup>

The UNEP evaluation also proposed that “*Senegal could benefit from the launching of a sustained awareness campaign, with targeted messages developed for key segments of the population, including economic arguments for decision-makers, planners, and development partners.*”

2 Research methodology

Research objectives

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

The research focuses on four key questions:

- 1. What changes have Senegalese 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 Senegalese opinion leaders know and understand about climate change and what are their views on Senegal’s response to climate change?

The research<sup>i</sup> consisted of 12 focus-group discussions with citizens and 17 in-depth interviews with opinion leaders across six locations in Senegal in May 2009 (see Appendix 1). The locations were Dakar, Rufisque, Mbacke, Darou Mousty, Ziguinchor and Tendouck (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.

- Dakar is Senegal’s capital and largest city. It continues to experience a high level of migration and urbanisation. Rufisque is a coastal suburb of Dakar. Both locations experience coastal flooding and sea-level rise, and, as fishing ports, are susceptible to the effects of climate change on fisheries.
- Mbacke and Darou Mousty, in the interior of Senegal, are areas susceptible to drought and climatic variability. They are situated in the groundnut basin, the former breadbasket of Senegal, now in decline.
- Ziguinchor and Tendouck, in the southern region of Casamance, are areas affected by deforestation. They have also experienced drought and climatic variability. Located in the south, they are in a region culturally and ethnically different from the rest of the

<sup>i</sup> *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.

country, and have a tropical climate in contrast to the drier Sahelian climate of most of Senegal.

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 Senegal, individuals working in fishing (Rufisque, Tendouck), oyster gathering (Tendouck) and farming (Tendouck and Darou Mousty) were also purposefully targeted.

In Dakar, Rufisque, Mbacke, Darou Mousty and Ziguinchor, focus group discussions were conducted in Wolof, with some respondents in these groups also providing limited responses in French. In Tendouck, discussions were conducted in Jola.

In-depth interviews

To understand the wider context of climate change in Senegal, 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 Senegal. All experts were Senegalese, or had worked and conducted research in Senegal.

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 Senegal 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 Senegal; 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 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 Senegalese 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 Senegalese people’s knowledge of climate change; they live with the impacts of climate variability and change in their day-to-day lives.

The research also shows that changes in climate are not noticed by Senegalese in isolation from broader environmental changes. People in Senegal 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 Senegalese 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 Senegalese perceive these changes. This report, while focusing on climate change, recognises the complexity of the relationship between climate change and environmental degradation.<sup>i</sup> It begins with an overview of the environmental changes that Senegalese citizens have experienced, and then focuses on six key issues which people say directly impact their lives. It moves on to examine people’s understanding of climate terminology and concepts, and finally presents five key themes that shape people’s understanding of the science of climate change. In subsequent sections, it explores what Senegalese opinion leaders know and think about climate change, and concludes with recommendations.

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

There is a near universal sense that Senegal’s weather is changing, although the word “climate” is rarely used. People perceive that the weather has become hotter, less predictable and more erratic. “There is no longer a good rainy season,” a young man<sup>ii</sup> from Mbacke explains. “Before, with the abundance of rain, life was easy,” echoes a

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.

“Everyone is responsible, even for the rubbish we produce. My mother has the wisdom of age, which the young generation should listen to — we must take care of Africa because now people are suffering from a lack of water. We can no longer grow rice, and this has adverse effects. We cannot grow peanuts or corn”

OLDER MAN FROM ZIGUINCHOR

farmer from Darou Mousty. “With this lack of rain... we get nothing out of these harvests.”

In this context, people recognise that changes in weather patterns are having a profound effect on the country’s resources. They talk of lack of water, difficult farming and declines in fish stocks. An older fisherman from Rufisque is typical in explaining: “In 1973, there were fish here, big fish species, but today we have to go 40km into the ocean to have a good catch.”

The poorer people are, the more they understand just how vulnerable their livelihoods and ways of life are to shifts in weather patterns and extreme weather events. Many people offer stories that explain how Senegal has changed from a country with an abundance of space and natural resources to one where resources are depleted. “There was a lake... the women used to go to the lake to look for oysters and shrimps. They also used to go there to cultivate rice, but all this no longer exists,” says a woman from Ziguinchor.

An older man from Ziguinchor offers this testimonial:

“I have a story to tell about a village where I grew up. It was my mother’s village, and when I was small there was so much water. Now there is none. I have discussed this with her, telling her it was all happening because man has made bad use of nature. Everyone is responsible, even for the rubbish we produce. My mother has the wisdom of age, which the young generation should listen to – we must take care of Africa because now people are suffering from a lack of water. We can no longer grow rice, and this has adverse effects. We cannot grow peanuts or corn.”

People also say that the country has become a crowded and expensive place to live, particularly in Dakar. “There is no more space in Dakar,” says a man from the city. “The buildings grow on the earth like mushrooms... groundnut was abundant, millet was abundant, fish and meat were cheap,” adds a woman from Mbacke. “We bought a kilogram of meat at 200 or 100 CFA francs, so you can see that things have changed. You now pay 2,000 to 3,000 CFA francs per kilo of meat.”

In general, there is a perception that nature has been somehow degraded. “Nature was previously very beautiful, but has now changed,” says a young man from Darou Mousty.

Figure 1





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

Many of the changes that Senegalese 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.<sup>i</sup> Efforts were made to understand how people were interpreting the images – for example, three different images prompted discussions of drought. Subsequent discussions sought to understand attitudes towards these issues and the perceived causes, effects and responses.

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

- 1. Drought and lack of water
- 2. Bush fires and deforestation
- 3. Flooding, waste and drainage
- 4. Scarcity of fish
- 5. Destruction of mangrove forests
- 6. Air pollution

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 on to 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 lack of water

People in Senegal are deeply concerned about drought. Farmers’ responses to drought appear to be largely reactive. They lack options and resources to respond to the problem.



<sup>i</sup> Participants also had the option to suggest other issues affecting them, that they felt were not covered by the 15 images.

“Smoke from cars destroys the environment... Pollution is an element that prevents heavy rainfall”

MAN FROM DAROU MOUSTY

Many Senegalese feel defeated by drought. This issue was of particular concern to those in Darou Mousty, Mbacke and, to some extent, Tendouck. These rural and peri-urban communities have been directly affected by drought, and water is seen to play a crucial role in day-to-day life. “Water is part of prosperity,” says a woman from Darou Mousty. “If there is no water, nothing will prosper.” Overall, drought is seen as a livelihood issue for Senegalese farmers and is not framed in terms of climate change.

Many say that drought is caused by deforestation and pollution. People believe that cutting down trees for wood and land-clearing causes drought because trees attract rain. Some also believe that pollution from factories and cars directly inhibits rainfall: “The smoke from cars destroys the environment, so we have a lack of rain...” explains a young man from Darou Mousty. “Pollution is an element that prevents heavy rainfall.”

A considerable number of interviewees also believe that God plays a role in drought. This idea emerges strongly among rural women, and is in keeping with a belief that God controls the weather. A woman from Darou Mousty is typical in saying: “God [is responsible for drought.] Sometimes God does things which suit men and sometimes he does things which do not suit them.”

The effects of drought are keenly felt. Drought causes failed harvests and has a harmful impact on people’s livelihoods. Lower crop yields reduce income and life becomes more difficult. As crops fail, farmers give up their land. In Mbacke, some farmers say the land is no longer viable or profitable. “After harvesting, if I do not get a significant yield – if I invest 100,000 CFA francs and I do not get a yield that gives as much – I have to leave the fields for something else,” a man from Mbacke explains. Some rural women in Darou Mousty also feel that they are in a vulnerable position because they rely on the cultivation of millet. With no millet, they have nothing to sell.

The effect of drought on livestock is a concern to farmers in Tendouck and Darou Mousty. People there have difficulty finding food and water for their livestock in times of drought. “[The livestock] die because they do not have water or food,” a young woman from Tendouck observes. Drought within Senegal is also seen to create a general dependency on other countries for agriculture.

People’s responses to drought reflect feelings of helplessness; they do not refer to ways to adapt their farming practices to cope with the challenging climate. “We remain passive and believe that we don’t have any means,” comments a young man from Darou Mousty. “We pray that there is prosperity and the disappearance of drought in the country,” says a woman from Darou Mousty. Women in rural areas are particularly likely to express feelings of helplessness and a lack of control over the situation.

When asked how they would respond if the drought were to become more frequent or severe, as predicted by climate change models, most people say that, without government assistance, they would have to leave farming altogether. A small number of people discuss the possibility of adaptation by creating “dams” or “basins to retain water” but most say they would be forced move to urban areas. “If we farm for a season without any results, we can hope for assistance from the government,” says a man from Mbacke, “but without any support we can only abandon the field to find refuge elsewhere.”

Bush fires and deforestation

Although people recognise that bush burning and deforestation are undesirable for environmental reasons, these practices are seen as necessary for livelihoods and survival.



Bush fires are a concern for farmers in Mbacke, as well as people in Ziguinchor and Tendouck, in the southern region of Casamance. Although higher temperatures and dry conditions can increase fire frequency and intensity, people link bush fires primarily to human activity; they say that sometimes smokers start bush fires unintentionally, and sometimes peasants, campers, hunters, charcoal gatherers and honey gatherers set them deliberately to support their livelihoods, but lose control of them. “Hunters and those who clear land for pasture, they sometimes light fires, primarily on the main road,” explains a man from Mbacke. “Smokers throw their cigarettes there – this also leads to bush fires.”

Although smokers are often criticised for accidentally lighting fires, Senegalese are divided as to whether others light fires because of lack of awareness, or out of necessity. One young man from Ziguinchor asserts that “hunters and smokers act out of ignorance”, while another maintains that “the hunters do it because they need to, it is not a voluntary choice”.

Deforestation is viewed as the primary consequence of bush fires and is considered to be negative for several reasons. Firstly, it eliminates the trees upon which some people’s livelihoods depend. “During the dry season, people told me that they were going to burn the forest to enable farming. I told them that this would not only kill species in nature, but species of tree would die,” warns a young man from Ziguinchor, “and if you need those trees you won’t be able to find them.”

Secondly, deforestation is thought to cause drought. This is because people believe that trees attract rain. “I’ve noted that these days, bush fires are frequent. The forests are ablaze,” remarks a farmer from Tendouck. “It is the large trees that create the rain, so we will suffer if they disappear.”

Finally, bush fires are acknowledged to cause loss of life. “If you burn the forest,” points out a young man from Ziguinchor, “you can kill people.”

Most suggest responding to bush fires in one of two ways: planting trees and raising awareness. There are various local tree-planting initiatives taking place at the community level. “In past years, Tendouck had a reforestation programme, and now there is a new tree-planting project in place,” says a local farmer.

Some people are also involved in awareness campaigns. “Where I live... in the dry season, everything dries up and the big trees, suppliers of honey, catch fire each year,” says a young man from Ziguinchor. “This has grave

consequences, which affect the whole population. We have formed an association which brings together honey harvesters and teaches them methods of clearing the plants properly before harvesting the honey.”

People not already involved in raising awareness think this is a desirable response to the problem. A young man from Ziguinchor explains:

“In my opinion, the primary factor is awareness, because one person cannot do anything against the whole world. It is only through creation of awareness that everyone will know what is happening in our environment; that reforestation is a good thing; that smokers need to be aware of what they do. We must also change the way we make use of nature: geographers say that 50 years from now, the earth will be uninhabitable. We must change our way of life. This will come about through awareness.”

When discussing responses to bush fires, many people mention the Division of Water and Forests, which sits within the Ministry of the Environment. Men generally talk about the ways in which this division has helped them to combat the problem. “In my case, we are supported by the water and forests agency...,” says a man from Mbacke. “Many trees have been planted but the problem is protection – but we are attempting to reforest.”

Women, on the other hand, are considerably more passive in their responses. “That’s the duty of the department of water and forestry,” a young woman from Tendouck says. Indeed, women who discuss the problem of bush fires are generally less able to suggest responses, beyond the immediate: “We all help each other, men, women, and children, if a fire gets close to the houses,” says another young woman from Tendouck, “but in the bush, no-one does it. We cannot do it.”

In general, there is a perception that individuals should be more responsible for their actions. “We must be responsible...” says a man from Mbacke. “Our inaction could have consequences. If you want to cut a tree, you have to think about replacing it.”

“In my opinion, the primary factor is awareness, because one person cannot do anything against the whole world. It is only through creation of awareness that everyone will know what is happening in our environment... We must change our way of life. This will come about through awareness”

YOUNG MAN FROM ZIGUINCHOR



**Flooding, waste and drainage**

**People think that flooding is caused by rubbish blocking drainage canals, but doubt their capacity as individuals to reduce the rubbish that litters their environment. It is only through group action that they feel they can have an impact on the problem.**



Flooding, rubbish, and drainage are of central concern to people in the urban areas of Dakar and Ziguinchor, and the peri-urban areas of Rufisque and Mbacke. These three issues are often discussed together, although the issue of flooding did not come up in Mbacke.

Most people think that flooding is caused by rubbish blocking drainage canals.<sup>i</sup> *“Before the beginning of the rainy season, people clean their homes and throw the rubbish on the street; they say that the street belongs to everyone,”* explains a man from Dakar. *“These actions worsen the inefficiency of the sewers which are always blocked.”*

Overwhelmingly, people think that the problem of litter is someone else’s fault. *“Foreigners are more inclined to throw rubbish on the streets,”* says another man from Dakar. *“They say that they won’t stay here, and Senegalese do not bother to make the town clean anyway.”* A woman from Ziguinchor claims that *“the rubbish is thrown by residents of another neighbourhood”*. Sometimes people express feelings of hopelessness about the accumulation of rubbish. *“You clean, and you see someone who makes it all dirty again,”* says a young woman from Dakar. *“Sometimes, if I clean and someone goes by and throws paper, it makes me sick.”*

A few people mention that heavy rains cause flooding. One educated man from Dakar even mentions melting glaciers and global warming, suggesting an awareness of sea-level rise, but the conversation mainly focuses on drainage systems. In fact, rainstorms are seen as an opportune time for people to throw waste into drainage canals. *“The monsoon comes and all the rubbish is swept away,”* says a young woman from Dakar. *“The monsoon leaves nothing behind.”* Another remarked, *“If it rains, you see people taking their rubbish and throwing it in to the water so that on the road rainwater and waste mix.”*

Finally, people often blame the authorities for failing to maintain existing drainage systems, and for failing to collect rubbish. *“Nobody takes care of the drainage canals... [the mayor] should have those vehicles that collect rubbish. If [the mayor] does not do it, then who is going to do it?”* asks an older woman from Rufisque. *“There is also the problem of old estates with deteriorating drainage, despite the increase in population – drainage which dates to the colonial era, 40 years old or more,”* a man from Dakar points out.

<sup>i</sup> Sea-level rise and heavy rainfall can cause flooding, but other factors such as urban pollution may compound the problem.

The loss of homes, vehicles, and property because of flooding is already impacting the lives of Senegalese. *“Flooding causes loss of property, especially the vehicles which enter in the water. Also, flooded houses become uninhabitable,”* says a man from Dakar. *“During the heavy rains we do not have good roads, and we are forced to walk in water,”* a woman from Ziguinchor echoes. *“Vehicles have the same problem.”*

Women also mention the health impacts of flooding and waste, recognising the role they play in spreading disease. Some women mention mosquitoes in particular: *“There are people who take advantage of the rain to pour their rubbish into the gutters at night. This favours the spread of diseases both in adults and among the children who play there,”* one woman from Ziguinchor remarks. *“Filth causes diseases,”* says another. A young woman from Dakar points out: *“When we take trash and put it in one place, over time the mosquitoes will come.”*

Most people’s responses to flooding and waste management are reactive. They speak of unblocking drains after flooding, and repairing flood damage. *“In our area, it is the head of the area who counts the number of flooded houses and repairs them with the help of young boys,”* says a woman from Ziguinchor. *“In our estate, every time it rains we unblock the sewer drain to let the water go through,”* a man from Dakar explains.

In the absence of government assistance, some places have taken matters into their own hands, organising rubbish collection and forming local associations to clean up neighbourhoods. *“We pay for the cart to collect garbage all the time because the [rubbish collection] vehicle does not come very often. Sometimes it does not come for up to three or four months,”* says an older woman from Mbacke. *“We’ve been waiting for local authorities, but they never found solutions”,* a fisherman from Rufisque says. *“All the young people are free on Sundays, and we take the opportunity to clean up what is possible.”* People do not see these as ideal solutions, however. A young woman from Dakar tells of problems when not all members of an association pull their weight: *“I live in Fass Mbao. There is an association in every neighbourhood that everyone belongs to in an attempt to remedy these problems. But there are people who live there and do nothing but talk... for example, when winter comes and they are lazy and their tank is full, we have to call someone to unblock it.”*

Many people are ready to give advice about what others should do, feeling that if others behave as they behave, the situation might improve. *“Whenever it stops raining, I sweep the area in front of my house. It is unfortunate that nobody joins me in this initiative to fight against diseases,”* a woman from Ziguinchor comments. *“All areas must have closed bins where household waste can be placed, it will be better this way,”* advises a young woman from Dakar. *“We must keep our environment clean, cleanliness means health. To attenuate the odours coming from waste, it must be mixed with ash.”*

There is sometimes scepticism that people can change, however. *“We need everyone to participate. We have to review our attitudes,”* says another young Dakaroise woman. *“Perhaps with the new generation this will change, but from what I see I do not think this is possible.”*

Finally, people think that the authorities have a responsibility to improve drainage and remove waste. *“The government must try to clear the sewers,”* says a man from Dakar, while a fisherman from Rufisque asserts: *“We would like rubbish trucks in each neighbourhood to remove waste.”*

People give few indications as to what they would do if the problems of flooding and sanitation became more severe. Responses range from *“going into the streets and protesting”* to *“waiting to see until the new mayor comes”*.

**Scarcity of fish**

**Fishermen have noticed that fish stocks are decreasing. They express considerable frustration and emotion when discussing fish scarcity, and tend to blame it on others.**



Male fishermen in the seaside fishing villages of Rufisque and Tendouck have noticed a decrease in fish stocks and in the variety of fish they catch. *“It used to be possible to all land together on the shore with a diverse catch. But today we see that the fish caught are all the same,”* says a fisherman from Rufisque.

This fall in the numbers of fish has a profound effect on fishermen’s livelihoods and can also cause hunger in their communities, which rely on fish as a food source. *“Fish are becoming more and more rare, which can lead to famine for people,”* says a fisherman from Tendouck.

Considerable frustration and emotion are expressed by struggling fishermen. *“We’ve asked the forest and water officials to help conserve the sea, but where we’ve had the most problems is where foreigners get permits, and we are fed up,”* says another fisherman from Tendouck. *“We’re ready to fight, otherwise we won’t have any fish in our nets.”*

Fishermen offer many explanations for the scarcity of fish, but do not seem to be certain why their catches are decreasing.<sup>i</sup> Many offer multiple reasons:

*“There are certain fishing nets that catch the small fish... and if the water boils these fish die. As soon as the rains become less common there are also species which, if people go fishing and catch them when there is high salinity, you’ll see many of them are dead. You see them floating on the surface of the water. Some nets should not be used for fishing.”*

The practice of catching fish that are not yet fully grown is seen as a primary cause of decreasing fish stocks. *“There are those who trap and kill fingerlings [young fish]... fishing nets are one of the causes,”* says a fisherman from Rufisque.

Fishermen also talk about the destruction of fish habitat, citing damage to coral and pollution: *“In short, these are petres [a type of coral] in which the fish live. Once they are destroyed by people who have better fishing equipment than us, the petres go to waste and this hinders the reproduction of fish,”* explains a Rufisque fisherman. *“The death of the fish contributes to and is related to pollution...,”* says a fisherman from Tendouck. *“There are so many machines in the water that there’s not enough pure water in the ocean for these fish. And since the rains have become more rare, and men use their machines that leave gas in the water, the fish can’t survive.”*

There is a perception that other people, whether international or local, are taking the fish. *“Earlier on, there was a large diversity [of*

<sup>i</sup> Fish stocks in Senegal are susceptible to the impacts of climate change, but other factors such as over-fishing and degradation of the coastline also play a major role in fish scarcity.

*fish]”,* a fisherman from Rufisque remarks, *“but big fishing boats took the last ones – the yaff [a type of fish] – to sell in Europe.”* A fisherman from Tendouck blames the neighbouring village: *“The surrounding villages now fish right up near to us and we’ve put up with it until now, and we’ve become impoverished. We didn’t use to know rice without fish, but the neighbouring people have fished right up to our shores, since 1995, and at last our resources have gone and we are fed up.”*

Finally, in Tendouck some people think that lack of rain increases the salinity of the ocean, which is bad for fish. *“It’s because of the high salinity of the ocean and the absence of rain,”* says one fisherman, *“where there is a lack of rain, the sea becomes more salty and that exhausts the fish.”*

Few fishermen offer adaptation strategies to the decreasing fish stocks, but all agree that a solution needs to be found. Some speak of the need for better management of fishing resources. *“The ocean needs to be managed properly because of its numerous beneficiaries,”* a Rufisque fisherman suggests.

In particular, fishermen feel that the government should be involved in better regulation. *“The government has to intervene by forbidding fishermen from taking the small fish. Here, everyone does as they please and that’s what’s killing the fish”* says a fisherman from Tendouck.

Community mobilisation is also seen as a good strategy. *“If we could only come together to discuss this problem, we would be able to find solutions,”* a fisherman from Rufisque declares.

However, there are also fishermen who are disillusioned and feel that effective strategies have not been implemented and need to be developed. *“We have participated in a lot of discussions of this kind but we have never had a positive outcome,”* laments one Rufisque fisherman. *“We have often heard of funds released to solve this problem but no concrete measures have been taken,”* complains another. *“Nobody is helping us to find solutions,”* asserts a third. *“We would like to have a bank that can help us. We sometimes have to go through difficult situations and we are helpless when faced with this problem.”*

Only rarely do fishermen mention concrete actions that have been taken by the community. One fisherman from Tendouck remarks: *“Last year, we began construction of a basin for the raising and breeding of fish, and we’ve asked for government assistance. They’ve designated an area for the fish to reproduce.”* Comments like this are rare, however, and few people indicate what they would do if fish became scarcer.

**Destruction of mangrove forests**

**Young men in Ziguinchor are concerned about the destruction of the mangrove forests, which they believe is caused by bush fires, deforestation and rubbish.**



The destruction of mangroves is a concern to those in Ziguinchor, who note the connection between these saltwater coastal forests and people’s livelihoods. In particular, young men in Ziguinchor discuss their disappearance. *“On the route leading to Bignona,”* one man observes, *“it used to be dense but now the mangrove has completely disappeared.”*



Mangrove forests are sometimes destroyed by bush fires – an issue extensively discussed in Ziguinchor. Two other factors, however, are also seen to cause mangrove destruction. Firstly, people cut down the trees for wood: “People need wood, and do not replant after cutting down the trees,” one man from Ziguinchor remarks. Secondly, rubbish deposited in the mangroves is believed to be detrimental to them. “At the exit from Ziguinchor, people have dumped wrecked cars and animal carcasses, contributing to the death of trees and threatening the development of the mangrove,” another man observes.

Sometimes this dumping is blamed on the authorities. “In my opinion, the state is responsible. If people throw rubbish among the mangrove trees it’s because they don’t have a place to put their garbage bin,” says one Ziguinchor man.

One of the primary effects of mangrove destruction is seen to be a reduction in fish stocks: “With the mangrove, people cut it down but that is where the fish develop. This explains the scarcity of fish and why young fishermen quit fishing. Fishing is no longer profitable.” Oysters are also seen to be affected: “Before, you could buy oysters with a coin, but now it’s impossible because they are too expensive. This is caused by the degradation of nature and the mangroves.”

Several people mention organised activities to reforest the mangroves on the part of NGOs and civil society organisations. “My father worked with the environment and I formed an association in my district,” says a young man. “After having informed my father of our project on the mangrove, he put us in touch with a politician... we showed him our project. He took the project for other people to use as well. There was also a competition organised by Unesco last year...”

However, most of the young men in Ziguinchor stress the need for more involvement on the part of individual citizens and the government towards a solution. “The Senegalese must change because we are educated... if we know how this will affect human survival we should rise up and speak,” says one. “It is the state which must secure this, so that whoever touches the mangrove will be punished with severe measures... if the state arrests one or two people, people will leave the mangroves alone,” says another.

If the problem were to become more severe, young men in Ziguinchor feel that an awareness-raising campaign would be required. “If the problem becomes more serious, even though we young people don’t have the means, we will try to raise awareness in people,” one man remarks. Media are mentioned as having a role to play in this.

Air pollution

People in the urban area of Dakar express concern about air pollution – primarily for health reasons.



Cars in general are of concern to urban people in the capital city of Dakar, and the suburb of Rufisque, just outside Dakar. Urban dwellers are primarily concerned about cars because of the inconvenience caused by traffic jams and irresponsible driving; however, they are also concerned about the negative effects of air pollution.

“The Senegalese must change because we are educated... if we know how this will affect human survival we must rise up and speak”  
YOUNG MAN FROM ZIGUINCHOR

The principal reason people are concerned about air pollution from car exhaust is that they know it adversely affects their health. “It is the cause of many misfortunes: pollution, asthma... it’s not healthy,” says a Dakarois man. There is also some mention of adverse effects on the environment.

People believe it is specifically old, imported, foreign vehicles that cause air pollution in and around Dakar. “There are old cars that must be done away with,” says a young Dakaroise woman. Interestingly, this is the one respect in which Senegalese blame industrialised countries for changes in their local environment. “White people make cars that use gas,” another Dakaroise woman remarks, “and then they discovered that it would destroy the ozone layer, so they sent them to Africa, to poor countries... they want to maintain their climate and their ozone layer and destroy ours.” Such comments may be due to recent legislation in Senegal that forbids the import of cars older than five years.

A few people also credit air pollution to cheap fuel and corrupt traffic police. “Traffic police, they have a responsibility... sometimes when a car must be impounded and the owner gives money to the policeman, the policeman lets him go and, in general, pollution we are talking about is caused by these kinds of cars,” says a young woman from Dakar.

Rural–urban migration and urbanisation

The study 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 in Senegal speak of leaving rural areas to escape drought as agriculture becomes less viable. “The rain, which is rare, has meant that people are leaving the countryside,” says a man from the rural village of Tendouck. There is a general consensus that lack of rain is pushing people into towns and cities. “When you are in the village during the rainy season and there is not enough rain, you go somewhere and do something else,” says a woman from Rufisque, a peri-urban suburb of Dakar.

Life in the city is not without problems, however. People speak of pollution, sanitation, health, housing and the high cost of living: “Urbanisation in Dakar is anarchic,” says a man from Dakar. “We are suffocating in Dakar; there is noise and atmospheric pollution, and we are stressed. If you leave [the city] and go to the rural areas you become aware that Dakar is a bomb.”

Some long to stay in rural areas but feel they have to migrate in order to survive. “I can say that today, if there is a means, we feel more at ease in the countryside than in the city,” a man from Tendouck explains, “we go to the city because of a lack of money, otherwise we feel much more comfortable in rural areas.”

Finally, a handful of people directly blame the government. “Abdoulaye Wade, the president, is the cause,” says a woman from Rufisque.

People offer few insights into how they are currently coping with the volume of cars in Dakar and the resulting air pollution. Some do offer suggestions for improvement: “The number of vehicles has to decrease,” a woman remarks, while a man says: “We must decentralise, as all the markets and offices are in Dakar.” Some also suggest that the government must take action: “The government should have thought to correct this problem by virtue of the fact that it represents the people.”

When asked how they would cope if the situation became more severe, people’s responses were mixed. Some felt that the situation was already desperate. “We’ve been pushed to the wall, we must react now. We must do it now rather than when it is too late,” says a man from Dakar. “The people have to be informed that Dakar is polluted. If you take a helicopter and fly over the town you’ll be shocked.” Others however, feel they have more pressing concerns. “We are busy with other matters, like what we are going to eat; we do not have the time,” a woman from Rufisque says.

How do Senegalese think their country and communities are responding?

There is a lack of information on how the government, religious organisations, NGOs, communities and individuals are responding to environmental and climate change challenges. Local authorities and religious leaders are said to have significant influence in communities, and should be engaged in communication strategies concerning climate change.

Most people are not aware of government, religious, NGO, community, or individual responses to environmental issues. Many people criticise government at all levels for a lack of visible action on the environment. Some criticise specific departments, for example, the Division of Water and Forests or the Ministry of Fisheries. People are also critical of local authorities. They say that local authorities often fail to act and, when they do, they act out of self-interest. Nevertheless, some people name local authorities as an important source of information. What the authorities say carries weight with people.

Religious centres are not normally seen to be involved in activities addressing environmental issues, with the exception of praying and some tree planting. They are, however, seen as key sources of influence and information in society. “The imams, each Friday, they speak to the devout and ask people especially to change their mentalities,” says an older man from Tendouck.

It is rare for people to cite NGOs by name, but some people mention that NGOs are involved in reforestation, and constructing anti-salt water dykes in the Casamance region. Most people, however, are not aware of NGOs actively working on environmental issues. “[NGOs] might exist but we are not informed about them,” says a woman from Ziguinchor. There is some scepticism about NGO work: “anyone who has been here has done [nothing] but make promises,” says another woman from Mbacke.

Words for “climate change” and “global warming”

The study explored three different terms for “climate change” with the focus groups. What did they think about the French term *changement climatique*? What did Wolof-speaking people think about the term *sopeeku jawji*, a literal translation of “climate change” suggested by the Senegalese advisory group?

Awareness of individuals or community associations active on environmental issues is extremely low. In a few cases people name community-based organisations dealing with issues of sanitation or rubbish clearing.

What do Senegalese 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.

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

Terminology

Despite recognising the impact of their changing weather, people have a low awareness of climate change, as both a term and a concept. Most people think the term refers to seasonal changes or immediate changes in the weather. “When the climate changes”, explains a women from Darou Mousty, “it is when it is hot or cold.” People often relate the term “climate change” to the weather forecast. Only a minority of individuals appear to understand climate change beyond weather reporting. A man in Ziguinchor says he heard about it “from those big climate conferences”.

Those who have heard the term have generally heard it in the media. Some people cite television or radio generally; others list specific radio or television stations. A few people mention a documentary shown on Walf TV. A handful say that they have heard the term in school, but school is often mentioned in conjunction with media.

Similarly, recognition of the term “global warming” is generally quite low among the public. Those who do recognise it understand it as a localised, and sometimes seasonal, increase in temperature. “[It’s a] rise in temperature each year,” says a young woman from Tendouck.

A few people describe it as an increase in global temperature. For example, a young man from Dakar says: “The world is becoming hotter and hotter.” Likewise, a couple of young men associate the term with melting ice, which suggests some exposure to climate change concepts. The best definition of global warming was given by an urban, male participant from Ziguinchor, who came from a higher socio-economic class. He explained it as: “Pollution which man has caused, and which causes the consequences of climatic change: ice melting from mountains and causing floods, lack of rain, and drought, which have repercussions on man’s life.”

As with climate change, people who have heard of global warming often cite local radio and television, and sometimes school, as the source of their information.

Despite low awareness of climate change and global warming, a small number of people spontaneously mention the greenhouse



effect. There does not appear to be a consensus concerning its meaning, although most associate it with increasing heat and drought. No-one accurately defines the concept as the process by which the atmosphere traps some of the Sun's energy and warms the Earth. In fact, the greenhouse effect appears to be seen as a local phenomenon. “Some time ago, I called my brother who lives in Dakar who told me it was actually cool there,” says a man from Ziguinchor, “so it is said that the greenhouse effect is felt more [here] in Ziguinchor, and pollution is worse here as well.”

No reference is made to the gases which cause the greenhouse effect, such as carbon dioxide and methane, apart from one mention by a young man in Mbacke, who referred to “carbon gas” as “smoke coming from cars... that destroys the atmosphere.”

Neither “climate change” nor “global warming” appears to be a household term in either French, Wolof or Jola, and there is little awareness of terms such as “greenhouse effect” or “carbon dioxide”.

Reaction to the concepts

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

- 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.

Most participants agreed that human beings are causing weather patterns to change around the world over time. “Man is at the beginning and end of everything,” says a man from Rufisque. “It is man who is at the origin of these changes because he abusively exploits nature,” says another man from Ziguinchor. Likewise, people agree that the temperature of the earth is increasing.

Such changes, however, are predominantly attributed to local destruction and degradation of nature, for example: deforestation, lighting of fires, and pollution from factories and cars. Temperature rise, in particular, is frequently linked to issues of deforestation. Similarly, some people link the changes to population growth and divine will. There is little recognition by anyone, however, that the problems they face are likely to have human causes that extend beyond their own continent.

Frames of reference

In the absence of a solid 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 five important themes that influence participants’ understanding:

- 1. Emphasis on trees
- 2. The will of God
- 3. Ozone confusion
- 4. Air pollution
- 5. Localised heat

Such pre-existing concepts are often referred to as “frames of reference”.<sup>42</sup> These are critical, because they shape people’s 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

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.

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.

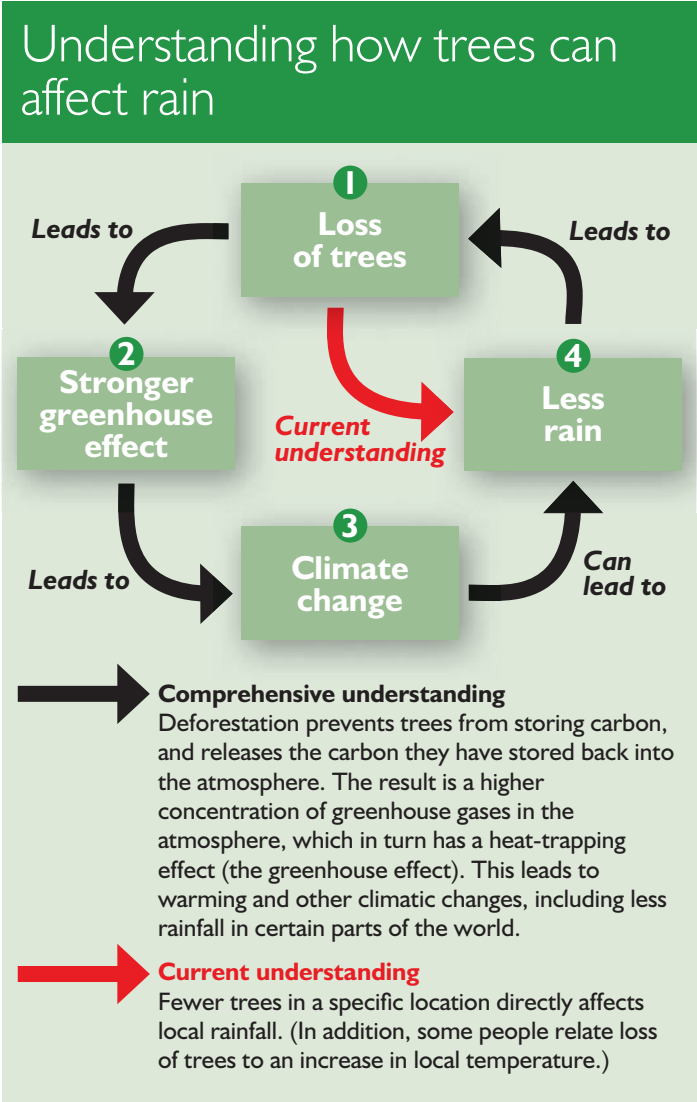
In this way, the five themes – or frames of reference – can function as barriers or as facilitators to effective communication on climate change. Understanding these frames of reference can help communicators in Senegal make their content relevant to their audiences. It is essential, therefore, to understand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

Emphasis on trees

Senegalese understanding of the concept of climate change is shaped by the importance they place on trees; in particular, they believe that trees attract rain. “You must know that the rain depends on the trees...” says a middle-aged man from Tendouck. “It is the large trees that create the rain, so we will suffer if they disappear.”

Scientists do not necessarily agree with this, but they do agree that forests recycle rain through a process called evapotranspiration whereby water vapour coming off the leaves of trees evaporates and falls again.

Figure 2



Similarly, Senegalese notice that shade from trees has an impact on the temperature of the immediate surroundings. A young woman from Tendouck notes: “All the big trees have been cut down and there is more sun. Thus it is hotter because of the lack of trees.”

What is interesting about the Senegalese understanding is that it displays 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. In Senegal, there appears to be almost no awareness that trees act as carbon sinks to store carbon dioxide, the most significant greenhouse gas causing climate change.

The implications of this are both positive and negative. On the one hand, people may be motivated to plant and preserve trees, which is good from a climate change perspective, and from an environmental perspective. On the other hand, their understanding could provide a false sense that climatic problems, such as drought, can be solved at a local level through tree-planting. “It’s up to us to leave the forest alone, to let it live its life like it needs to,” a man from Tendouck says. “If it lives, the rain will fall as it should.”

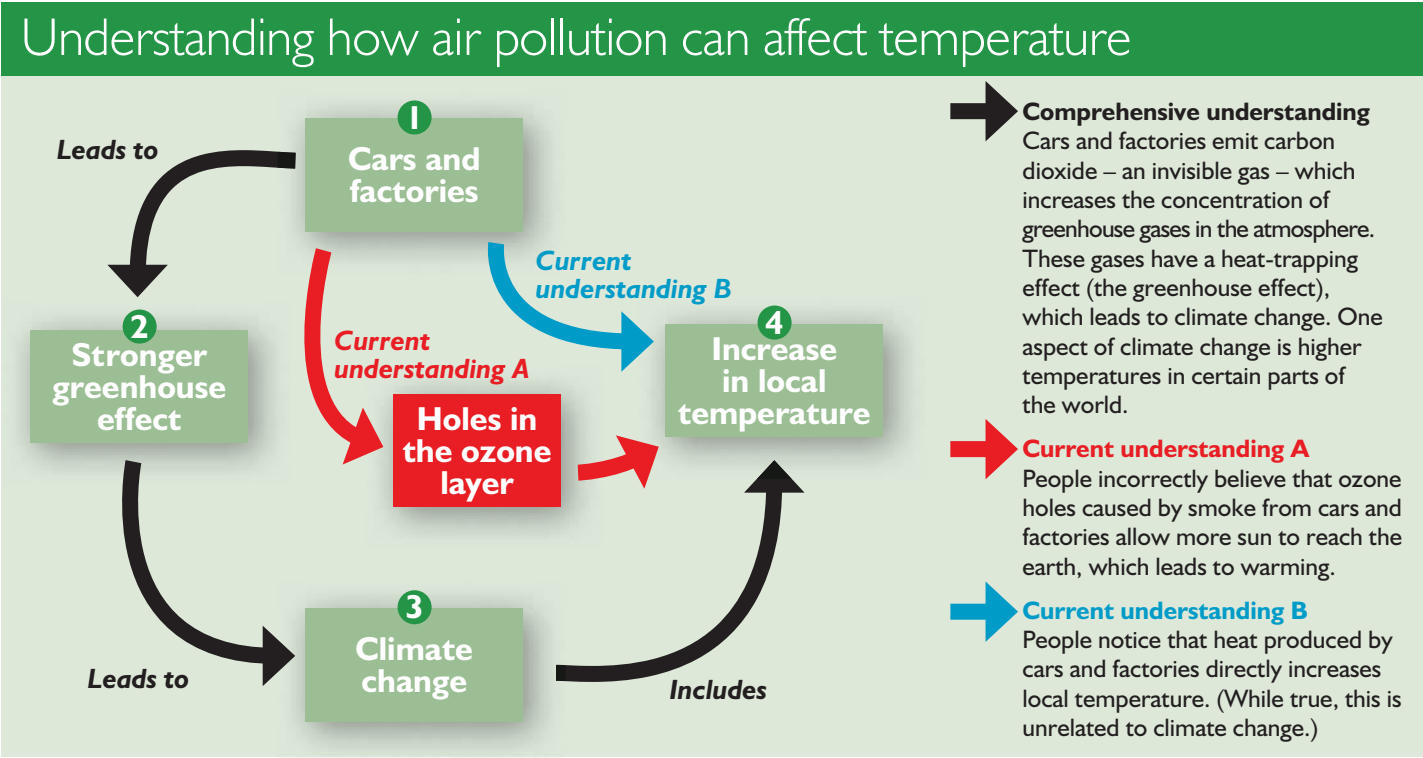
Recommendations for communicators

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.

The will of God

Senegal is a majority Muslim country, and some people relate discussion of weather to their faith. “All this is the domain of God,” says a young woman from Dakar. “He has made it such that it is very

Figure 3



“All this is the domain of God. He has made it such that it is very hot. If it pleases God, he would make it so cold that it would snow”  
YOUNG WOMAN FROM DAKAR

hot. If it pleases God, he would make it so cold that it would snow.”

Given the importance of religion in Senegal, it is critical to understand the ways in which people understand God’s influence on the weather. It tends to manifest in three ways. Firstly, people invoke God in order to explain phenomena for which there is no other perceived explanation. A woman from Mbacke explains that increases in temperature are “because of late rains... it is God who delays and speeds up whatever he wants.”

Secondly, some people view extreme weather events and changes in weather as a punishment for human sin. “[God] punishes people because we do bad things,” says a young woman from Dakar. “He shows his strength with the hurricanes and storms.”

Finally, there are those who believe that lack of rain indicates the approach of the end of the world. “God said in the Koran that we will live to see the end of the world,” says an older man from Tendouck. “Today we are living it because he said when the end of the world comes, you’ll see that it will kill three things: the first thing, you can see the lack of rain.”

In general, the will of God is mentioned most often by rural people and women. It should be noted, however, that belief in God does not necessarily preclude acceptance of the role that human beings play in climate change. “Man could be the cause of all this. It may also be the work of God,” a man from Mbacke states ambiguously.

Recommendations for communicators

Be sensitive to people’s faith when communicating climate change. Involve faith leaders in climate change communication. Where possible, facilitate climate change discussions that complement ideas of environmental stewardship present in some religions.



Ozone confusion

Many Senegalese appear to confuse climate change with ozone depletion. They incorrectly believe that holes in the ozone layer allow more sun in, which makes it hotter. A young woman from Tendouck is typical in saying: “*We inherited a mild climate which we have ruined by destroying the ozone layer,*” while a fisherman from Rufisque explains that “*[Smoke] destroys the ozone layer and this is the heat that reaches us too easily – by destroying clouds.*”

In fact, although ozone holes allow ultraviolet radiation to reach the earth, which damages human skin, they do not cause an increase in the earth’s temperature. The same confusion is also noted in Western contexts and may arise because climate change and ozone depletion are both caused by gases emitted as a result of human activity. In Senegal, men are more likely to mention ozone than women.

The danger in confusing climate change with ozone depletion is that people seeking to address climate change may select the wrong activities. For example, reducing CFCs was effective in dealing with ozone depletion, but less effective in combating global warming, which is primarily caused by carbon dioxide emissions. Furthermore, ozone depletion was largely addressed by regulation in the late 1980s, while the human activities that cause climate change are ongoing.

Recommendations for communicators

Make use of people’s awareness of atmospheric ozone depletion to explain climate change, correcting misconceptions at the same time. Emphasise which human activities produce the greenhouse gases that cause climate change. Explain the science of climate change in a visual way that resonates with people, as ozone holes do.

Air pollution

Smoke and visible air pollution also influence the ways in which the Senegalese understand climate change. “*It is man who is at the origin of the deterioration of the environment, through bush fires, pollution of the atmosphere, smoke which damages the ozone layer,*” says a young woman from Tendouck.

People frequently talk about car exhaust, smoke from bush fires, smoke from factories, and even smoke from cigarettes. However, they make no mention of invisible greenhouse gases, such as carbon dioxide, which contribute to climate change. This awareness of smoke is often, although not exclusively, linked to misunderstandings about the ozone layer. Many believe that smoke damages the ozone layer, thereby increasing the sun’s heat. “*Pollution emitted from cars causes the destruction of the ozone layer...*” says a man from Ziguinchor, “*which is why people today say that the sun is very hot.*”

People are also conscious of the adverse health effects of smoke. “*Gases from certain cars are indescribable... with traffic jams and smoke,*” remarks a man from Mbacke. “*All this really destroys the ozone layer, but also the health of everyone is threatened.*” 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.

“It is man who is at the origin of the deterioration of the environment, through bush fires, pollution of the atmosphere, smoke which damages the ozone layer”

YOUNG WOMAN FROM TENDOUCK

“Everyone wants to build factories, and their heat... has weakened the clouds that cause the cold and the rain”

RICE FARMER FROM TENDOUCK

Recommendations for communicators

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

Localised heat

People sometimes consider local sources of ambient heat, such as cars and factories, to be directly affecting the temperature. “*It is man who drives cars that create heat,*” says a man from Ziguinchor.

People may even understand this direct heat, produced in their immediate surroundings, to have an impact on other aspects of the weather, such as rainfall. “*Everyone wants to build factories,*” says a rice farmer from Tendouck, “*and their heat, mixed with the heat of the burning forests, has weakened the clouds that cause the cold and the rain.*”

Although ambient heat can indeed increase local temperature, this is not the mechanism by which global warming occurs.

Recommendations for communicators

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

These five themes, which people mention in discussions on climate change and global warming, 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 Senegal (Ministry of Environment and Natural Protection)
- Ministry of Maritime Economy, Maritime Transport and Fisheries
- Centre for Ecological Monitoring
- Local government representatives from Mbacke and Ziguinchor

Media

- Public newspaper
- Private television station
- Regional radio station

Private sector

- Fishing company
- Telecommunications company
- Food processing company

NGO, religious, associations

- An imam from Dakar
- A marabout, or holy man, from Darou Mousty
- Association of fishermen
- Agricultural association
- Two local NGOs with a climate change focus

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

An elite topic

Knowledge of climate change is restricted to a small number of opinion leaders in Senegal. Climate change is perceived to be a scientific topic that few are knowledgeable enough to discuss.

Although this research relies on relatively few interviews with opinion leaders, those leaders tend to feel that the climate change debate is currently restricted to a small number of intellectuals and decision-makers.

“We communicate very poorly about climate change. That discussion is still restricted to a circle of insiders.”

Ms Awa Faly Ba Mbow, programme co-ordinator, IED Afrique

Opinion leaders frequently refer to climate change as an “expert” topic, perceiving it to be a scientific subject that few are qualified to discuss. A representative from local government is typical in saying that he cannot provide “expert answers”, but rather “the responses of a layman”. Some opinion leaders even go so far as to admit that they do not understand the term at all. As one media representative says: “Climate change... is a term that is almost like an empty shell. You do not know what is in there... what it refers to.” In general, knowledge of climate change is concentrated within national government and NGOs; however, all opinion leaders would welcome more information, which is encouraging given that climate change needs to be considered in decision-making in all sectors at all levels.

Understanding climate change

While all opinion leaders can talk about climatic impacts, very few feel they have sufficient knowledge to explain climate change.

There is a spectrum of knowledge among opinion leaders with respect to climate change. This study (with its relatively small number of interviews) found knowledge to be highest among representatives from national government and NGOs working on climate change. Media representatives were most aware of a need for increased knowledge.

There is evidence that some opinion leaders understand climate change as “the temperature that is sometimes hot and sometimes cold” – much like members of the general public. Many confuse greenhouse gases with CFCs and appear to conflate ozone depletion with climate change.

In general, opinion leaders tend to describe the effects of climate change more accurately, although they sometimes use climate change as a catch-all phrase for issues of environmental degradation, pollution and ongoing climate variability, which is characteristic of the region. All three phenomena exist in a complex relationship with climate change.

Only the few people working directly on climate change talk about it with reference to greenhouse gases or the greenhouse effect. For example:

“The greenhouse effect is a natural phenomenon that has unfortunately been reinforced by human activities, industrial activities and atmospheric pollution”

Dr Assize Touré, general manager, Centre for Ecological Monitoring

Perceived impacts of climate change

While climate change is understood to be global in scope, opinion leaders are concerned about the local implications for Senegal, particularly for rural communities.

Unlike the general public, opinion leaders are generally aware of the global nature of climate change. They emphasise that it is experienced differently in developed and developing countries:

“There are countries that are called ‘extremely vulnerable’ because the impacts will be much greater in terms of their capacity to cope... This is the case for poor countries... African countries in particular.”

Ms Madeleine Diouf Sarr, division head, Environmental Impact Assessment, Ministry of Environment and Natural Protection

Within living memory, opinion leaders have noticed changes in landscape, lifestyles, and livelihoods similar to the general public:

“I am from Saint-Louis... my late father told me that when they were young, in the early 1900s, they needed to ride a horse to get to the sea. But today, the sea has come right up to the settlements.”

Mr Youssoupha Diallo, special adviser to the prime minister

There is concern about the impact of climate change on Senegalese livelihoods. Some suggest that fishing communities along the coast are most vulnerable, while others highlight the challenges faced by communities in the Sahel region, in the

interior of the country. Concern is particularly acute for those in rural areas; there is widespread understanding of the challenges faced by farmers:

*“In terms of farmers’ planning, there are difficulties, because the rainy season is no longer understood.”*  
Mr Youssoupha Diallo,  
special adviser to the prime minister

A representative from a large food processing company explains that farmers are already witnessing the impact of climate change on agricultural yields:

*“A producer who used to get 600 kilos of groundnuts... only gets 400 kilos. He has had his revenue slashed... He knows the rains have decreased.”*  
Mr Christophe Basile, deputy director general, Suneor

Some opinion leaders are concerned that more and more people may leave rural areas to seek work in urban areas. The rural exodus triggered by drought in the 1960s and 1970s set a precedent for such migration, bringing its own set of problems:

*“You have a whole set of people who come to take refuge on the outskirts of cities, often with very little sanitation, little access to basic services like water and so on”*  
Dr Jean-Philippe Thomas,  
co-ordinator, ENDA Energie

Where does responsibility lie?

**Although opinion leaders view climate change as a global problem, only a few recognise that industrialised countries are most responsible for causing it.**

Opinion leaders are aware that the effects of climate change are felt globally, but only a few appear to recognise that responsibility for causing climate change lies overwhelmingly with industrialised countries:

*“We studied the emission of greenhouse gases for Senegal. Actually, our contribution is really small. But unfortunately, we suffer the consequences.”*  
Dr Assize Touré, general manager,  
Centre for Ecological Monitoring

*“This degradation of the climate has reached high levels in China, same thing for the United States ...”*  
Mr El Hadj Sarr, human resources  
management and development, Sonatel

Those who understand that industrialised countries have caused climate change are more likely to stress adaptation measures for Senegal, while others are likely to talk about how Senegal can address the causes.

Do the worst affected understand climate change?

**Opinion leaders think that people have personally experienced the changing climate, but that the term “climate change” means little to most Senegalese.**

Most opinion leaders have relatively accurate perceptions of how the general public perceives climate change. They say that people know there have been changes in climate through daily

**“Most of the population... perceive climate change through the reduction in rainfall, through the shortened rainy season”**

DEPUTY GOVERNOR FOR  
DEVELOPMENT, ZIGUINCHOR

experience, but that people do not understand climate change as a scientific concept.

*“Most of the population is made up of farmers, [who] perceive climate change through the reduction in rainfall, through the shortened rainy season, and also through temperatures that increase from year to year.”*

Mr Mor Talla Tine,  
deputy governor for  
development, Ziguinchor

Some opinion leaders explain that people do not understand the terms used to discuss climate change. *“If you say ‘climate change’ to a fisherman, he will never understand,”* says an association representative.

A few opinion leaders comment that climate change is removed from the reality of people’s daily lives – particularly for those living hand-to-mouth, who have limited capacity to make long-term plans:

*“Here you are facing people who are totally insecure... the father [of the family] has to find the money for the next day’s expenses... We must be very careful, because for someone who has always been accustomed to thinking about the next day... he cannot suddenly start thinking about what will happen in 10, 15 or 20 years...”*

Dr Jean-Philippe Thomas,  
co-ordinator, ENDA Energie

*“People are under the impression that [climate change is] something that is very far away... it is very removed from people’s concerns.”*

Mr Sidy Diop, editor-in-chief, *Le Soleil*

However, because the world’s poorest people are, in fact, the worst affect by climate change, this suggests that the climate change debate in its current form does not serve the population well.

Translation and terminology

**Opinion leaders think that climate change terminology is a barrier preventing public engagement. The research suggests there is a need to find meaningful ways of communicating climate change to people with little scientific knowledge on the one hand, and deep understanding of their natural environment on the other.**

Opinion leaders agree that the general public needs more information on climate change. Almost all agree that people would be more concerned about climate change if they understood its implications for the way they live their lives. Several spontaneously mention that there is a general lack of communication on climate change and the environment more broadly, and say that more needs to be done to fill this gap.

Many opinion leaders also recognise that climate terminology is a barrier which prevents people from understanding and engaging with the issue:

*“Climate change is a little scientific, in my opinion. You could perhaps use other terms: global warming, increasing temperatures, decreased rainfall, air pollution... [people] would understand these better.”*

Mr Mor Talla Tine,  
deputy governor for development, Ziguinchor

Indeed, opinion leaders recognise there is a need to find a meaningful translation for the term “climate change”. Some opinion leaders explain that while a literal translation into Wolof is possible, it does not mean anything to Wolof speakers.

*“I mean, if I went home and I said to my mother, ‘What do you think of sopeeku jawji?’, she would look at me and say, ‘Er... well... um...’”*  
Ms Awa Faly Ba Mbow,  
programme co-ordinator, IED Afrique

Some feel the word “climate” itself poses a challenge:

*“First of all, it is a conceptual problem... how would we say ‘climate’ in our languages?”*  
Mr Youssoupha Diallo,  
special adviser to the prime minister

By way of a solution, it is suggested that climate change be explained to people using a range of points of reference, mostly to do with elements of weather such as rain and temperature. The linguistic and conceptual challenges of climate change identified by opinion leaders are consistent with the findings from the general public, and indeed with the researchers’ own challenges in designing the research.

What response is required?

**Opinion leaders agree that people need to know how to change their behaviour in response to climate change. They tend to talk about how people can limit their impact on the environment rather than how they can adapt. Only a few opinion leaders from NGOs and government emphasise that people need information about adaptation.**

Opinion leaders agree that people need to change their behaviour in response to climate change; however, there is a tendency for leaders to focus on what they perceive to be the causes of climate change, rather than adapting to its impacts. Many opinion leaders place responsibility for climate change on ordinary Senegalese citizens:

*“When the African peasant through his production or actions thus contributes to deforestation or participates in the pollution of the soils, it is Africa that feels the effect of his action, but these effects are also felt worldwide.”*  
Mr Mor Talla Tine,  
deputy governor for development, Ziguinchor

*“There is a need to give [climate change] meaning by telling people “if you do this, this is what will happen, and if this happens, these are the most acute consequences.”*  
Mr El Hadj Sarr, human resources  
management and development, Sonatel

One or two, recognising that Senegal contributes little to greenhouse gas emissions at present, say more must be done to ensure Senegal does not contribute in the future:

*“[We are] maybe not reaching levels in China or the United States, but I think everyone is responsible in some way... We were very proud to say a few years ago that we no longer imported vehicles which were over five years old, because we did not want to be Europe’s dump. But the vehicles that we continue to import do not meet international standards for the environment.”*  
Ms Awa Faly Ba Mbow,  
programme co-ordinator, IED Afrique

Carbon trading is criticised by one business leader, however, as being the wrong kind of incentive to limit greenhouse gas emissions:

**“I think everyone is responsible in some way... We were very proud to say a few years ago that we no longer imported vehicles which were over five years old, because we did not want to be Europe’s dump. But the vehicles that we continue to import do not meet international standards for the environment”**

PROGRAMME CO-ORDINATOR, IED AFRIQUE

*“People... have a view of the carbon market as being: ‘if I save [waste] I can sell it on the carbon market to a polluting industrialist from the North and get money.’ In the medium and long terms, it’s not good... the objective [should be] to make everybody reduce waste, instead of penalising people who pollute.”*

Mr Christophe Basile,  
deputy director general, Suneor

An NGO representative says incentives should highlight cost savings:

*“We must have policies that are win-win. That means, for example, I use less oil, less oil for the same energy service, ie, I save money because it will cost me less if I consume less, and I win on the environmental front. We seek to develop energy efficiency because it is really the solution for the future – it is having the same service even when consuming much less.”*  
Dr Jean-Philippe Thomas,  
co-ordinator, ENDA Energie

Adaptation to the effects of climate change is mentioned much less; however, some NGO and government representatives, do mention current and future programmes that focus on adaptation. Several opinion leaders also explain that people need information that will enable them to adapt.

Government response

**Government representatives explain that the government is addressing climate change, but that programme implementation is a problem due to lack of funds. Opinion leaders from outside government appear to know little about the actions being taken by government. The research suggests a need for greater cross-sector communication.**

Government representatives highlight a number of initiatives and longstanding commitments to tackling climate change, including the National Committee on Climate Change<sup>i</sup>, the Clean

<sup>i</sup> This committee was created in 1998 and brings together government institutions, NGOs, and private-sector organisations.



Development Mechanism (CDM)<sup>i</sup>, and the National Action Plan of Adaptation (NAPA)<sup>ii</sup>.

Some specifically point out that training and capacity building has occurred around the issue of climate change:

*“With the World Bank... last year, we had to organise the first African fair... this was the first time that we trained quite a lot of people, which is why now... we find people representing Senegal in international talks. And some have even been recruited by the United Nations to work in the carbon market.”*

Ms Madeleine Diouf Sarr, head of division, Environmental Impact Assessment, Ministry of Environment and Natural Protection

Representatives from the government also mention that government institutions have carried out a number of studies, including two greenhouse gas inventories, research into rural water supply, carbon sequestration (since 2000), and adaptation (since 2007). Because of capacity building and research, government representatives say that climate change is being incorporated into development policy more frequently and that projects are being devised to address research findings.

However, implementation of environmental and climate change projects appears to be limited to a few large-scale initiatives, such as the Great Green Wall reforestation programme. More local initiatives are needed; the climate change focal point in Senegal, Madeleine Diouf Sarr, explains that until now, programmes at the local level have mostly been “*pilot programmes*”, and another government representative says the success of current programmes will not be assessed for the next two to three years.

One of the primary constraints facing the government is funding. Looking to the future, government representatives say that more will need to be done to tackle the impacts of climate change on coastal areas and rural water supply; to regulate carbon dioxide emissions; and to reduce bush fires and deforestation – but they face a challenge in terms of financial resources.

*“Programmes that aim to counter the effects of coastal and marine erosion... require significant resources and our countries do not have these kinds of resources.”*

Mr Youssoupha Diallo, special adviser to the prime minister

In order to overcome the funding limitations, government representatives suggest that greater co-ordination between government institutions and greater involvement of international actors is needed.

*“The future lies more in integrated programmes. These should be aimed at ensuring that national development policies incorporate the climate change dimension. The Ministry of Finance should embrace this dimension and integrate it into policy. For this new dimension, national funding is not enough, so international funding must support this programme.”*

Ms Madeleine Diouf Sarr, head of division, Environmental Impact Assessment, Ministry of Environment and Natural Protection

i The Clean Development Mechanism is an arrangement under the Kyoto Protocol allowing industrialised countries with greenhouse gas emission-reduction commitments or emission-limitation commitments to invest in ventures that reduce emissions in developing countries as an alternative to emission reductions in their own countries. Senegal is the first African country to have developed a proposal eligible under the global Clean Development Mechanism, but progress at the time of writing remains slow.

ii National Adaptation Programmes of Action provide a process for Least Developed Countries to identify priority activities that respond to their climate change adaptation needs.

Community engagement is also seen as essential. As Youssoupha Diallo , special adviser to the prime minister says: “*The social mobilisation of the population... is our main resource.*” Interestingly, opinion leaders from outside government appear to know little about the actions currently being taken by government.

*“I have never been aware of any [government] actions. I have never seen anything.”*

Mr Mbacké, marabout, Darou Mousty

Aside from the Great Green Wall, the only government initiative frequently mentioned is the national legislation banning imports of vehicles more than five years old. NGO representatives interviewed for this research seemed to know most about the government’s response to climate change; however, the small number of media representatives, local government representatives and community leaders who participated had low awareness of government actions. All signs point to the need for greater cross-sector co-ordination and communication on climate change.

NGO response

**NGOs working on climate change tend to be focused on adaptation. They stress the need to increase institutional capacity and cross-sector communication. NGOs focusing on climate change adaptation could play a convening role in bringing together national government and community leaders.**

The research suggests that NGOs working on climate change are more focused on adaptation than the government. One NGO representative emphasises her organisation’s work with local people to devise and scale-up adaptation strategies:

*“[Farmers] suffer most directly from climate change and they also develop relevant strategies at the small scale, because ultimately, it is a question of survival.”*

Ms Awa Faly Ba Mbou, programme co-ordinator, IED Afrique

Another highlights the success of the capacity building initiatives his organisation has been involved in since the early 1990s; he argues that knowledge levels within NGO and private-sector organisations have increased, allowing African delegations to present a stronger case at international conventions. However, he cautions that there is a need for greater communication between sectors, and that institutional capacity building needs to extend further:

*“The people targeted in capacity enhancement are not always those who ultimately have the most decision-making power. The Ministry of Finance, the Ministry of Planning... as long as you cannot educate these policymakers... [you cannot influence] major decisions made at the state level.”*

Dr Jean-Philippe Thomas, co-ordinator, ENDA Energie

Leaders at the community level are more likely to know about NGO initiatives on climate change and environment, than they are to know about government initiatives. Government representatives, in turn, also mention NGOs’ work. This suggests that NGOs might be able to play a convening role in bringing together national government and community leaders.

Private-sector response

**The private sector expresses commitment to addressing climate change, but focuses on mitigation, with almost no mention of how businesses might need to adapt. Climate change is associated with environmental issues, and considered in a corporate social responsibility context.**



The private-sector representatives interviewed for this research came from fishing, food, and telecommunications companies. All express concern about the impacts of climate change on the Senegalese population. Some also express concern about the impacts of climate change on their customers. For example, the representative from the telecoms sector suggests that if food prices rise and people’s salaries decrease, this could affect sales. Another private-sector interviewee suggests that consumers will increasingly be making “green” purchasing decisions, taking into consideration the environmental and climate impacts of what they buy, although these comments could reflect the company’s status as an exporter. Interestingly, the representatives from the food and fisheries sectors, potentially vulnerable to climate change, place less emphasis on the direct impacts that climate change could have on their businesses in terms of declining fish stocks and agricultural yields.

Commitment to addressing climate change is expressed by all the private-sector representatives interviewed. Climate change is largely associated with environmental issues:

*“I don’t understand why [economic growth and coping with climate change] have to be in opposition with each other. We can certainly produce goods and services and improve the population’s living conditions, while also respecting the environment. If nature is not protected, there will come a time when we will no longer produce anything. We will not be able to survive... there might be a few problems along the way due to diverging interests but I think that it is in everyone’s interests to go in the same direction.”*

Mr Adama Lam, deputy general manager, Sopasen

Climate change appears to be an emerging issue in the private sector, with climate change and environmental degradation considered in a corporate social responsibility (CSR) context. All business representatives mention corporate social responsibility policies, and one representative indicates that climate change has been incorporated into pre-existing strategies that deal with environmental activities:

*“With regards to the environmental component, we have an established policy that leans towards using more solar energy, as opposed to energy derived from fossil fuels and oil. Thus, we*

*are trying to secure the business, and to give a boost to the economy, while being mindful of the environment... and this has been theorised, applied and formalised in the framework of a policy within our corporate social responsibility [strategy].”*

Mr El Hadj Sarr, human resources management and development, Sonatel

Other private-sector representatives indicate that they are moving in this direction:

*“We contribute because we produce carbon dioxide ... we are looking for action plans to reduce our waste water, to reduce our carbon wastes, to consume less electricity, to use less transport for our raw materials to reduce production costs... we haven’t quantified these challenges, but it is part of our line of work.”*

Mr Christophe Basile, deputy general manager, Suneor

Interestingly, the private sector’s apparent concern with addressing climate change seems to focus exclusively on mitigation, with almost no mention of how the sector might have to adapt.

Few people outside the private sector can say much about the current role of business in mitigating or adapting to climate change. When the private sector is mentioned, it is mostly in reference to the Clean Development Mechanism (CDM), for which businesses are said to be developing proposal ideas. While Senegal is the first African country to have developed a proposal under the global CDM, progress at the time of writing remains slow.

Local responses

**Little action on climate change is reported by local leaders, including local government representatives, fishing and farming association representatives and religious leaders. Local and community leaders appear particularly isolated from decisions made at a national level, while local government representatives echo national concerns about a lack of co-ordination on the environment.**

At the local level, little action on climate change is reported by local government representatives, fishing and farming association representatives and religious leaders. Neither representative from local government works on climate change directly. The prefect for Mbacke attributes this to the structure of the regional prefecture where he co-ordinates existing projects: these do not yet include climate change. He echoes the concerns of national government representatives and NGOs when he describes a general lack of co-ordination around the environment:

*“These projects are in different ministries... there are many structures working on this. Let’s say that the projects are scattered. There should be a specific agency for projects focusing on the environment... to centralise everything... to co-ordinate things better... otherwise, there could be duplication, the same projects doing the same things etc. The water code, hygiene code and forestry code... are a series of laws that deal with the resource rather than having an objective... so that when we read two or three codes, we realise that... there is no harmony between these codes... what is prohibited here is permitted there.”*

Mr Cheikh Boukounta Gueye, prefect for Mbacke

The deputy governor of Ziguinchor also does not work on climate change directly, but says it could fall under broader awareness-raising and reforestation programmes. In this vein, he

expresses concern over a perceived lack of environmental awareness among local communities:

*“Often, the chief problem that we encounter is the perception of these populations concerning natural resources... they think it is a gift from nature and that they have the right to use and abuse these resources, but it is often excessive and harmful.”*

Mr Mor Talla Tine,  
deputy governor for development, Zinguinchor

The fishing and farming association representatives say that their organisations are involved in local livelihoods programmes linked to climate change, but the links are tenuous. One representative points out that there is only an “indirect” connection between his programmes and climate change, while the other describes a project to address the way in which women use burning grass to smoke fish (*kethiax*).

Neither of the religious leaders interviewed for the research indicated that they were involved in any climate change initiatives.

Media response

**The media appear to lack sufficient knowledge to inform audiences effectively about the issue of climate change, although media representatives express an interest in environmental issues, and believe there is interest among the public for more information on environmental matters.**

Knowledge of climate change among the media representatives appears to be very low, a fact which they themselves acknowledge. Two of the three media representatives interviewed refer to climate change as changes in the weather or seasons:

*“We have programmes on climate change during December, January, when it’s cold... We do it to see how people in Senegal experience this period. And we are also interested in the changes that operate at the level of people’s clothing, people’s food habits, and social behaviour that people acquire as a function of this change in climate...”*

Ms Aissatou Diop Fall,  
programmes director, Walf TV

*“During the warm season, we have a theme on heat once a month, how to protect ourselves from the heat, how to be healthy, how to... prevent diseases that we contract during the warm period.”*

Ms Awa Mane, editor,  
Kassoumay FM, Zinguinchor

Once again, climate change tends to be grouped with environmental issues. An editor identifies one of the problems with reporting climate change:

*“There is no training. People are not necessarily trained with respect to environmental issues; it is on site that people get their training.”*

Mr Sidy Diop, editor-in-chief, *Le Soleil*

*Le Soleil* has had a section dedicated to the environment for several years. The editor explains that the section is mostly concerned with raising awareness. The importance of media in this respect is echoed by representatives from Walf TV and Kassoumay FM.

*“The media have an important social role, given that they have as a primary mission or purpose to inform public opinion, and in this light, they can be used for mass communication, for sensitisation, for raising awareness among different audiences.”*

Ms Aissatou Diop Fall,  
programmes director, Walf TV

While the media appears to lack sufficient knowledge to inform audiences about the issue of climate change, all the media representatives express an interest in environmental issues. Importantly, at least one representative believes there is interest among the public for more information on matters of the environment:

*“We have a weekly slot on the environment because this interests the Senegalese population... It is 10 minutes long... and we have reports and so on. We cover issues on site... We sometimes even have reports on endangered species. We also talk about fauna and flora... we talk about issues linked to the environment... when we invite specialists to discuss the topic, people call to get their contact details. If we decide, as a broadcaster, to create a slot on a certain subject, it is due to public demand. We are first and foremost a commercial group... we seek to make profits, and we have little interest in making a programme that does not capture interest.”*

Ms Aissatou Diop Fall,  
programmes director, Walf TV

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

**“The media have an important social role, given that they have as a primary mission or purpose to inform public opinion, and in this light, they can be used for mass communication, for sensitisation, for raising awareness among different audiences”**

PROGRAMMES DIRECTOR, WALF TV

5 Conclusion

This research has shown that public awareness and understanding of global climate change is low in Senegal. Climate change terminology is poorly understood and does not have standard translations in local languages. More Senegalese recognise that their climate is changing than are aware of the term “climate change”. Climate change is often literally interpreted as “changes in weather”. In this context, many Senegalese have their own ways of explaining why 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 Senegalese see a link between human activity and changes in climate, this is often in a very localised way. Many link individual human activities, such as tree felling and pollution, to degradation of the local environment and changes in weather patterns. A wider understanding of the role that rising levels of greenhouse gases in the earth’s atmosphere play in causing climate change does not exist.

Senegalese opinion leaders perceive climate change as a scientific topic that few are qualified to discuss. They need to know more about climate change in order to communicate confidently on the issue and incorporate it into their decision making. Although the media and schools are the main sources of information on climate change for the general public, there is evidence to suggest that people working in the media lack sufficient knowledge to effectively inform audiences about climate change and facilitate public discussion.

It is clear that communication and information provision are going to be central to Senegal’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 set out to present the perceptions of the Senegalese public on climate change, rather than a detailed climate change communications strategy, various communication recommendations can be made:

Provide information

Firstly, the media have 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. Senegalese 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 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. Senegal is being affected by climate change. 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 Senegalese 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, including adaptation funding, technology transfer, emissions reduction and other response strategies. Only when Senegalese citizens and their representatives 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.



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Appendix I Opinion leaders interviewed

Name and title	Organisation	Sector
Ms Madeleine Diouf Sarr <i>Division head, Environmental Impact Assessment</i>	Ministry of Environment and Nature Protection	National government
Dr Assize Touré <i>General manager</i>	Centre for Ecological Monitoring	National government
Mr Youssoupha Diallo <i>Special adviser to the prime minister</i>	Prime Minister’s office (formerly Ministry of Maritime Economy, Maritime Transport and Fisheries)	National government
Mr Cheikh Boukounta Gueye <i>Prefect of Mbacke</i>	Government of Mbacke	Local government
Mr Mor Talla Tine <i>Deputy governor for development</i>	Region of Ziguinchor	Local government
Mr Sidy Diop <i>Editor-in-chief</i>	Le Soleil	Media
Ms Aissatou Diop Fall <i>Programmes director</i>	Walf TV	Media
Ms Awa Mane <i>Editor</i>	Kassoumay FM	Media
Mr El Hadj Sarr <i>Human resources management and development</i>	Sonatel	Private sector
Mr Adama Lam <i>Deputy general manager</i>	Société de Pêche et d’Armement Sénégalais (Sopasen)	Private sector
Mr Christophe Basile <i>Deputy general manager</i>	Suneor food processing company	Private sector
Mr El Hadji Moussa Samb <i>Imam</i>	Grand Mosque of Dakar	Religious institution
Mr Mbacké <i>Marabout (holy man)</i>	Local religious leader, Darou Mousty	Religious institution
Mr Gaoussou Gueye <i>First vice-president</i>	Artisanal Fisheries Council of Senegal (CONIPAS)	Association
Mr Mamadou Sambou <i>Adviser</i>	National Agency of Agricultural and Rural Advice (ANCAR)	Association
Dr Jean-Philippe Thomas <i>Co-ordinator</i>	ENDA Energie	NGO
Ms Awa Faly Ba Mbow <i>Programme co-ordinator</i>	Innovations, Environnement, Développement Afrique (IED Afrique)	NGO

Appendix 2 Senegal advisory group

Name	Organisation
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Dr Jörg Michael Baur	PERACOD
John Lucas Eichelsheim	Intervenie pour le Développement Ecologique et l’Environnement en Casamance
Birima Fall	WWF WAMER
Alioune Badara Kaéré	International Development Research Centre (IDRC)
Racine Kane	IUCN
Dr Cheikh Mbow	University of Dakar
Dr Ole Mertz	University of Copenhagen
Kevin J Mullally	USAID, Senegal
Vore Gana Seck	Green Senegal
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Peter Trenchard	USAID, Senegal

Appendix 3 Methodology overview

*Senegal 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, *Senegal 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 Senegal in May 2009.

The six fieldwork locations were selected on the basis of desk research and consultation calls with the Senegal advisory group. 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. Selection also sought to ensure suitable geographic, ethnic, linguistic and urban/rural diversity. The locations selected for research were as follows: Dakar and Rufisque; Mbacke and Darou Mousty; and Ziguinchor and Tendouck.

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 Senegal, individuals working in fishing (Rufisque, Tendouck), oyster gathering (Tendouck) and farming (Tendouck and Darou Mousty) were 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 by income in the cities of Dakar and Ziguinchor; however, it was not possible to determine socio-economic class outside of the cities, because of limited data on socio-economic indicators. Profession was therefore used as the basis to recruit participants in these areas.

Moderators for each group were matched to participants in terms of gender and language. In Dakar, Rufisque, Mbacke, Darou Mousty and Ziguinchor, focus groups were conducted in Wolof, with some respondents in these groups also providing limited responses in French. In Tendouck, focus groups were conducted in Jola.

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 Senegal, the quota was achieved for each sector.

Sector	Quota	Achieved in Senegal
National 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 Senegal, 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 Senegal, representatives from Ministry of Maritime Economy, Maritime Transport, and Fisheries, and the Centre for Ecological Monitoring were consulted.

In the media sector, representatives were sought from radio,

television and print media. Both private and public media were represented, and both national and local media. In the private sector, a fishing company, a telecommunications company and a food processing company that manufactures peanut products were represented.

At the local government level, representatives from Mbacke and Ziguinchor were interviewed. The two religious leaders consulted were an imam from Dakar, and a marabout (holy man) from a rural location outside the capital.

The two associations represented were an association of fishermen, and an agricultural association.

Finally, representatives from two NGOs with a climate change focus 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 interviews were recorded and transcribed. Transcripts were produced in both the original language of discussion, and in French, by the focus group moderators. For focus groups held in Dakar, Rufisque, Mbacke, Darou Mousty and Ziguinchor, this meant that Wolof transcripts were produced, while for the Tendouck groups, Jola transcripts were produced.

English transcripts were then translated from the French by translators in London. These translators first read through the French transcripts for inconsistencies and anomalies which, if found, were raised with the moderators in Senegal. The team in Senegal then returned to the original Wolof or Jola transcripts and, if necessary, the audio recordings, to clarify any issues raised. Most French transcripts were refined several times before being translated into English, to ensure accuracy in the creation of the English transcripts.

A similar process was used to produce transcripts for the in-depth interviews; however, most of these were conducted in French.

The focus group transcripts and interview transcripts 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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