THE IMPACT OF CLIMATE CHANGE

in Kenya & Nigeria

September 2019

Infinite Insight

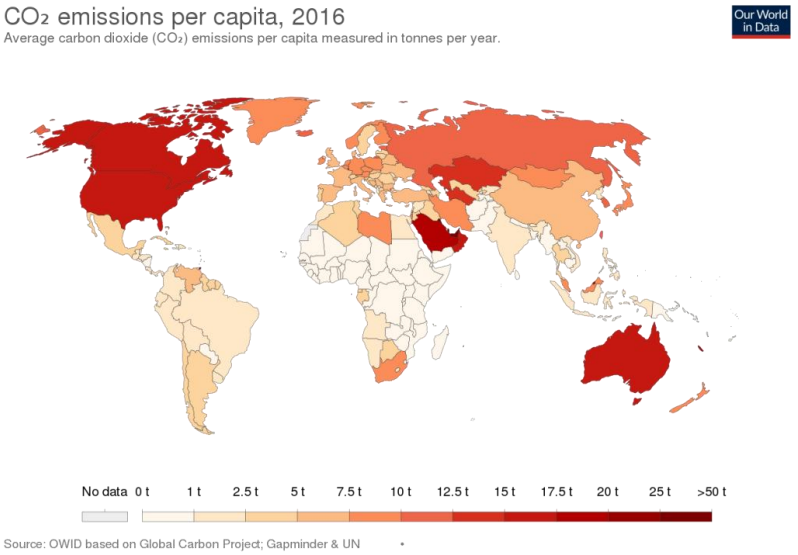
CONSUMER IDEAS

Contents

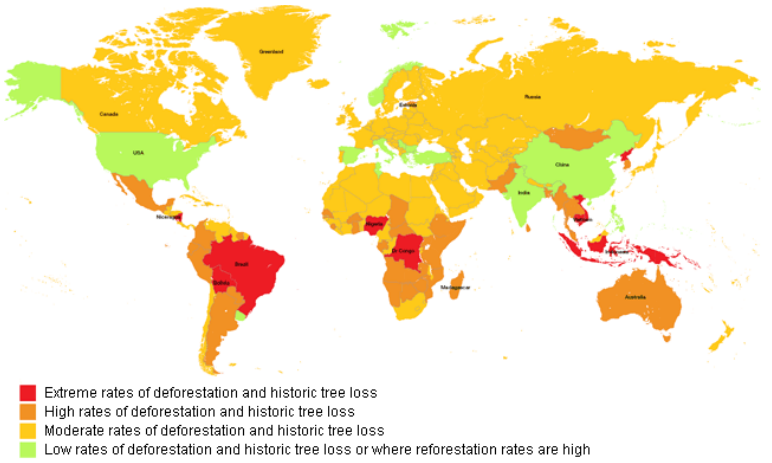
All Internet searches were conducted with ECOSIA

Background

- The Intergovernmental Panel on Climate Change (IPCC) states that carbon neutrality would need to be accomplished within 15 to 20 years, if the target of the Paris Agreement to limit global warming to 1.5º is to be achieved https://www.ipcc.ch/sr15/chapter/chapter-2/
- In comparison to the average 16.5 metric tonnes emitted per capita by US citizens, emissions by most Africans seem negligible (Kenya: 0.3 tonnes; Nigeria: 0.5 tonnes) https://data.worldbank.org/indicator/EN.ATM.CO2E.PC
- On the other hand, African countries follow the trend in the Southern hemisphere toward massive deforestation; carbon sinks are disappearing
- And African countries seek to close the gap to wealthy nations through industrialisation, global trade and export agriculture; plans for a coal power plant in Kenya have been put on hold; if approved, it will raise Kenya's emissions by 700% https://www.bbc.com/news/world-africa-48771519
- As the industrialised West remains the chief culprit in the debate on climate change, African publics' reactions have been largely overlooked; this report seeks to be among the first to rectify this



https://en.wikipedia.org/wiki/List_of_countries_by_carbon_dioxide_emissions_per_capita#/media/File:Co2_emissions_per_capita_our_world_in_data.svg



https://globusgreen.wordpress.com/2014/07/13/the-impacts-of-deforestation/

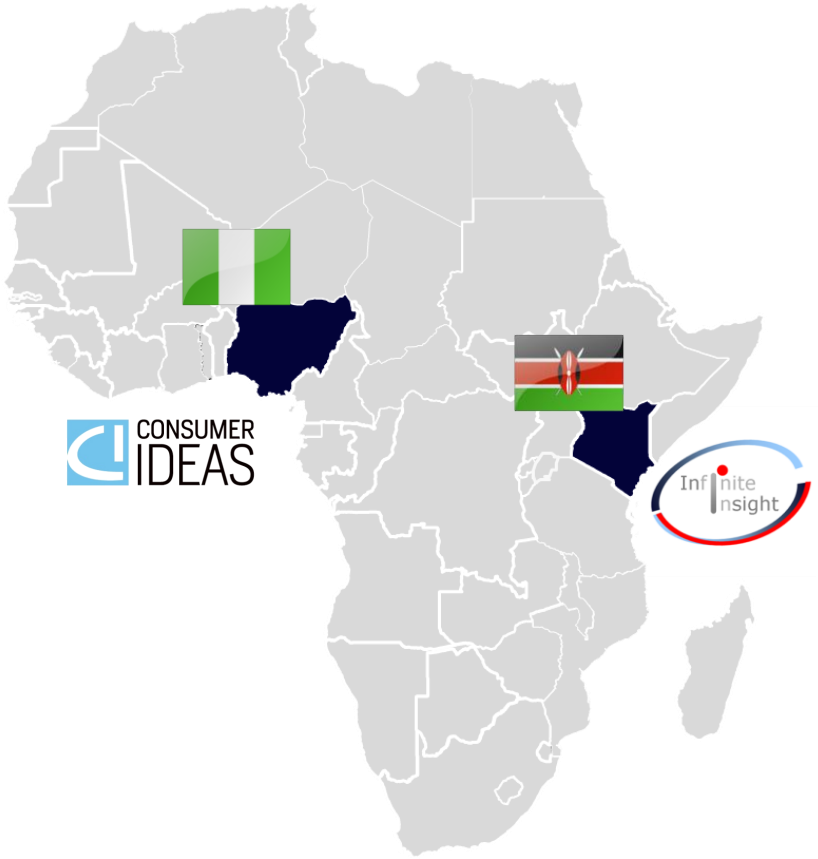
Recent Milestones

- The impact of the threats posed by climate change on public discourse is epitomised by three events:
  - In 2015, Pope Francis publishes the encyclical on responsible use of the environment, *Laudato Si* http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html
  - In 2018, new grassroots movements, such as *Fridays for Future* and *Extinction Rebellion*, are established https://fridaysforfuture.org https://rebellion.earth/
  - In 2019, the *World Economic Forum*, a platform not usually associated with climate activism, publishes the *Global Risks Report*; five out of the ten most impactful and most likely risks are environmental in nature https://www.weforum.org/reports/the-global-risks-report-2019

Scope

- Fieldwork for this *pro bono* project was carried out by:
  - Kenya: Infinite Insight Ltd.
  - Nigeria: Consumer Ideas Ltd.

- The project included:
  - Nationally representative population surveys with 1,000 sample size per country (Kish Grid selection of respondents, 18 yrs.+); the margin of error is ±3%
  - Discussions with experts from the United Nation's Environmental Programme (UNEP), environmental NGOs (forestry, marine ecology, wildlife), the Ministry of the Environment of a State Government, a photovoltaic systems company, a Chamber of Commerce, and a Youth Advocacy activist

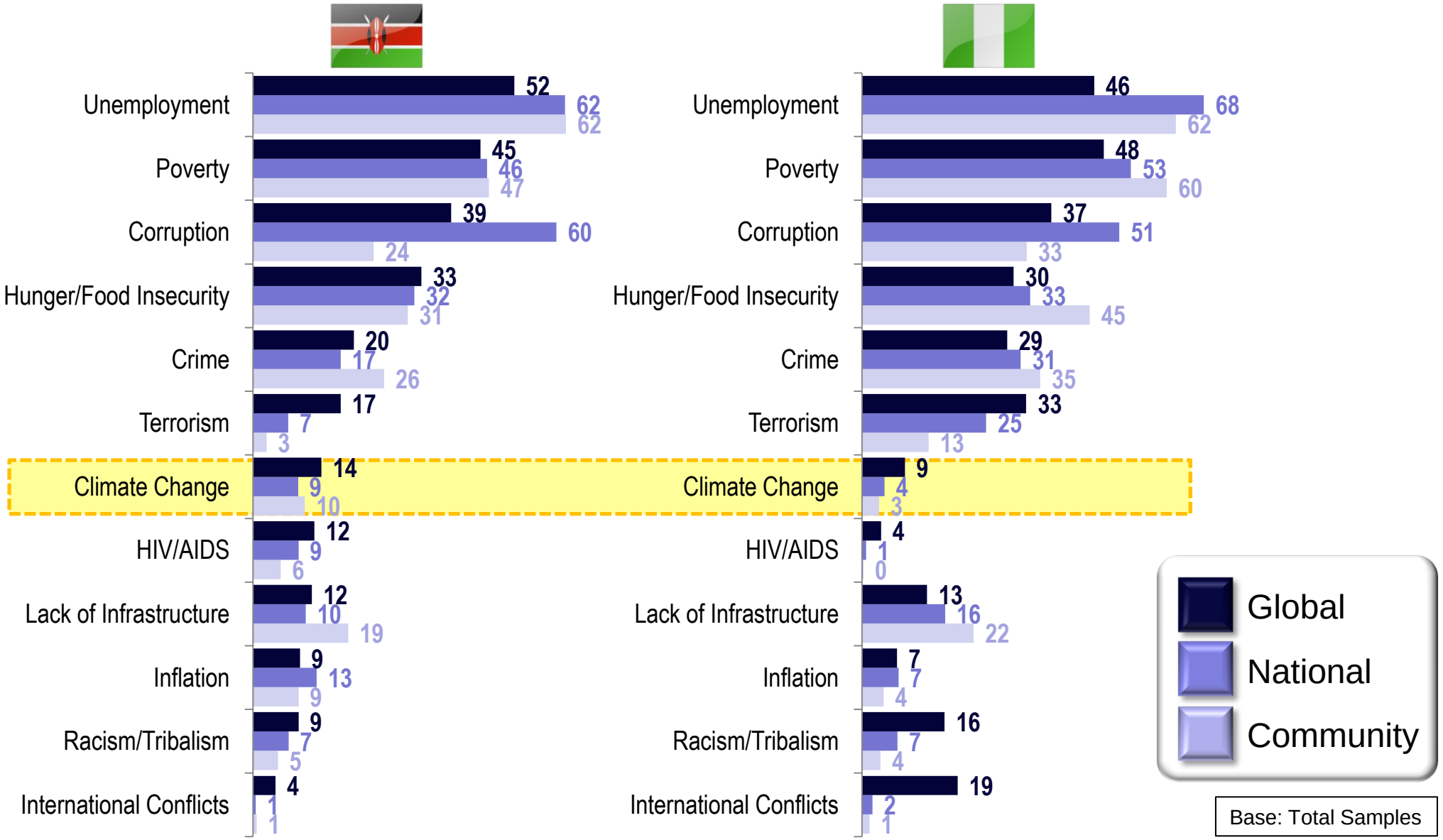


Participating Experts

	ORGANISATION:	EXPERTS:	WEB SITE:	DATE:
	East Africa Wildlife Society	Mr. Nassir	https://eawildlife.org	09/09/2019
	Seacology Foundation	Dishon Murage	https://www.seacology.org	10/10/2019
	African Forest Forum	Dr. Marie-Louise Avana Dr. Vincent Oeba	https://afforum.org	11/09/2019
	Illumina Africa Ltd.	Rushab Haria	https://www.illuminaafrica.com	17/09/2019
	Delegation Of German Industry and Commerce for Eastern Africa	Valerie Leisten Caroline Sawe	https://www.kenia.ahk.de/	18/09/2019
	United Nations Environment Programme (UNEP)	Dr. Musonda Mumba	https://www.unenvironment.org/	19/09/2019
	Lagos State Ministry of the Environment	Ronke B. Odeneye	https://environment.lagosstate.gov.ng/	20/09/2019
	Mental and Environmental Development Initiative for Children	Doyin Ogunye	https://medicng.org	23/09/2019

SUMMARY REPORT

Most Pressing Problems Affecting the World, Nation, Community (Spontaneous)



Base: Total Samples

Three Most Pressing Problems
(Summary)

- In the light of so many other problems affecting Kenyans and Nigerians alike (unemployment, poverty, widespread corruption - especially at the country level - and food insecurity), it is remarkable that climate change was spontaneously mentioned by about 1 in 10 respondents:

		
Global	14%	9%
National	9%	4%
Community	10%	3%

- In both countries, climate change is seen as more of a global problem; however, Kenyans, to a greater extent than Nigerians, see climate change affecting the country as well as the community
- Partly, this different assessment may be due to the fact that Nigeria (and West Africa generally) has been less affected by severe droughts than Kenya and experienced less failed crops (see Slide 18)


Image Source: Aljazeera

The Reality of Climate Change 1/2

- There is consensus among experts that climate change is real and the result of human activity, and that it's impact is already being felt
- Shifting weather patterns and extreme weather events are problems both members of the public (Slide 18) and experts identify as the most immediate ones
- However, sea level rise is also occurring; this is an immediate concern for population centres at or near sea level, such as Mombasa and Lagos
- The threat level is deemed existential

AFRICAN FOREST FORUM

Because nearly thirty years we are talking about climate change, we have the convention but we have not seen the reverse trend of these effects of climate change because the temperatures are continuing to rise and also the sea levels are continuing to rise. So all the parameter of this change are showing that the climate change is getting worse and worse although many activities have been on-going to mitigate the effects of climate change

SEACOLOGY FOUNDATION

I have no doubt in my mind that climate change is anthropogenic. It is human induced or man driven….There is a very clear link between rising seas, increased carbon dioxide levels and increase in pollution….and there is no doubt in my mind that due to increasing levels of carbon dioxide (are) actually driving the changes that we are observing

LAGOS STATE GOVERNMENT

Climate change is real, the rain pattern has changed and when it is hot, you really feel so hot. And so Lagos knowing that we are a littoral state, a coastal city, we have a lot of high population and high water table or plenty of water and low land areas

UNEP

It's much high a threat level. You see the challenge is…that climate in many places has been incredibly altered…and not just altered, it's also degraded…So one of the statements the UN secretary General, which is why he calling for the summit and gathering together Heads of States, and really wanting to have a conversation around the issue is because he has reiterated over and over that this is mankind's largest or biggest threat and its affecting all sectors because this is the one element of humanity or really of our planet that has implication on business, it has implication on health, it has implication on elements of gender, it has implications on our very survival, it has implications on species

MEDIC

Well, I would say climate change is happening at a very fast pace all around the world, not limited to but majorly because of behavioural patterns

The Reality of Climate Change 2/2

- There is equally a consensus that climate change is not an isolated phenomenon; rather, it is part of general environmental degradation, and comprises atmospheric CO_2 levels, deforestation, declining biodiversity, and pollution as well as wasteful behavioural patterns

SEACOLOGY FOUNDATION

If you look at the drivers of climate change and you look at the drivers of other associated or anthropogenic aspects like I said like pollution, you will find that they are all linked in one way or another…I would say what we are observing now in climate change is essentially the fruits that we are reaping from the wrongs we sow…I don't think it's possible to address climate change in isolation…Because you find in any way whatever ecosystems are being affected by climate change are the same ecosystems that will be affected by pollution

EAST AFRICA WILDLIFE SOCIETY

Initially people used to look at it in isolation. Like climate change and global warming and climate change and conservation, climate change and social economic of people and everything, but then when you put everything together, that's the common denominator…And because the effect is compounding…By the time you realize…because of the compounding effect, its already interacted with issues on climate change

AFRICAN FOREST FORUM

Climate change cannot be an isolated problem. It's related to what we are all doing…This is why it's really complex to address the climate change because it's related to all our activities and human activities. We also have natural events that really exacerbate the problem of climate change

Development vs. Climate Change

- While climate change is accepted as a reality, neither African publics nor the experts are prepared to abandon development
- Development, however, does not entail wholesale imitation of industrialisation strategies that have led to climate change in the first place; the goal is to be selective in the adoption of technologies ("learn from other people's mistakes")
- Experts are rather optimistic about this approach: as Africa has skipped several stages of technological development in communication systems and now emerges as the global leader in mobile communications and mobile banking (e.g. Mpesa), the strategy will be to avoid the pitfalls of industrialisation in order to stay within the boundaries set by the need to mitigate climate change

AFRICAN FOREST FORUM

So we cannot say because they are the main contributors they have to solve their problems. But…Africa cannot compromise development because of climate change….how can we do it in an environmentally friendly way…We cannot compromise our development because of climate change but we cannot also say we will not do anything to address climate change. …We have to be part of the global action to address climate change but we cannot compromise our development

UNEP

So I think we have that opportunity now as a continent and really as prospective countries to begin to interrogate firstly the economic models of the world and say has that really worked? And then secondly, to begin to interrogate the whole industrial movement what did it actually imply? The thing is you know the whole industrialization dynamic was very interesting and also very kind of fitting to that particular era or that particular moment in history

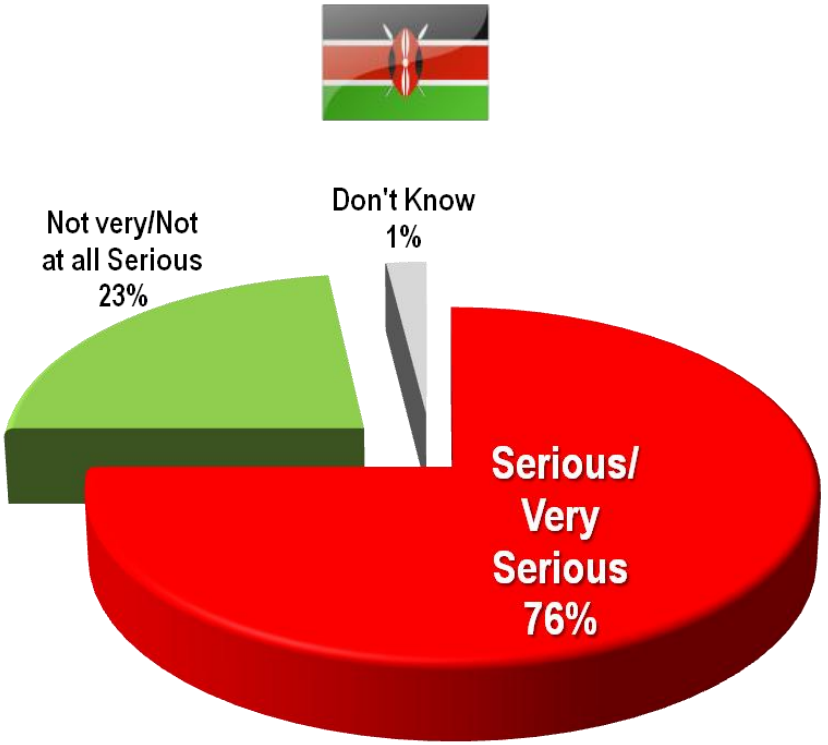
AHK

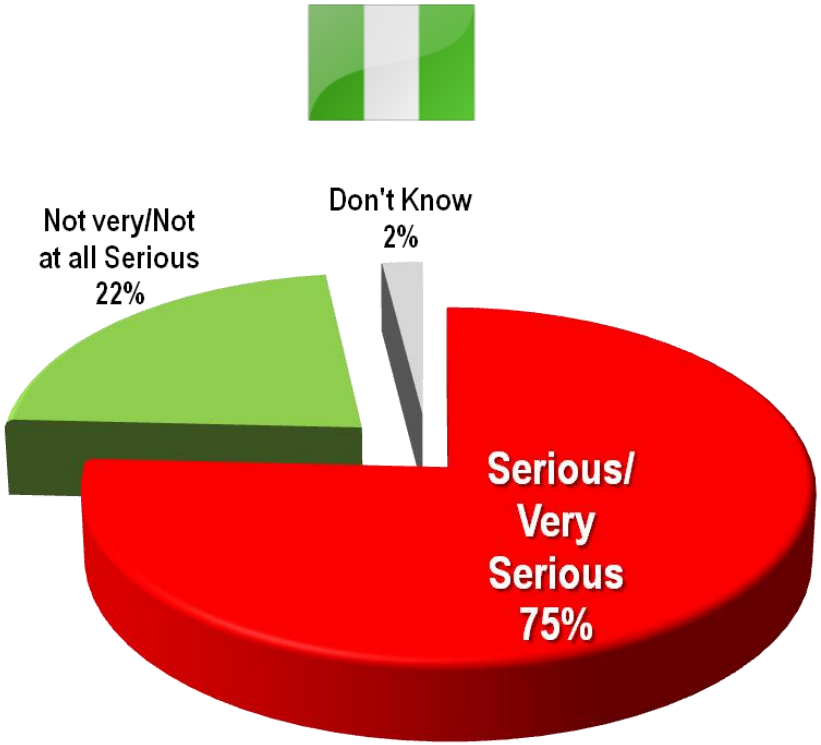
I think…that it doesn't necessarily mean that development increases climate change but maybe it depends on what development or how development comes in because if you (adopt) renewable technology, you will also achieve a certain development, which doesn't influence or increase climate change. So I think depending on how development is achieved then it also has a certain effect on climate change

LAGOS STATE GOVERNMENT

What has happened to them over there is for us to learn quickly before we get there. We can learn from other people's mistakes… We have three pillars of sustainable development. Sustainable development is a development that takes care of the present generation without jeopardizing the opportunity of the next generation to take care of their needs. So, it is an environment that we have inherited from our fathers and we are keeping in trust for our children…So anything that we are doing, we should do it carefully; we should note that we are just stakeholders, we don't own it. So that is basically it, but the science of it is that 'develop but develop sustainably'. Look at the economics, the social and the culture. I also believe in BATELA- it says Best Available Technology Encouraging Local Adaptation

Seriousness of Climate Change
(Prompted)





- On prompting, there is a virtual consensus among Kenyans as well as Nigerians with three quarters of respondents affirming that climate change is a serious or very serious problem

Base: Total Samples

Seriousness of Climate Change
(Prompted – by demographics)

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1070*	*387*	*683*	*529*	*541*	*616*	*348*	*106*	*125*	*789*	*156*	*376*	*461*	*233*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Very Serious Problem	50	49	51	53	48	47	53	62	53	49	56	54	48	49
Serious Problem	26	26	26	25	27	25	26	26	30	25	26	26	24	30
Not Very Serious Problem	15	16	14	13	16	16	14	8	14	16	9	12	18	12
Not A Problem At All	8	8	8	8	8	10	6	3	3	9	6	7	8	9
Don't know	1	1	1	1	2	2	1	0	1	1	3	1	2	0

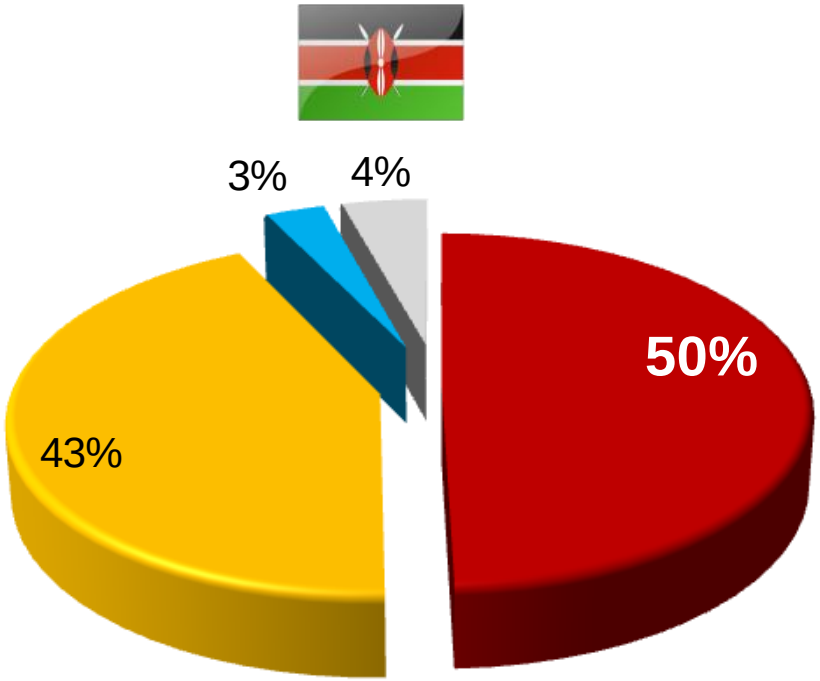
		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1009*	*574*	*435*	*503*	*506*	*503*	*433*	*73*	*295*	*574*	*140*	*464*	*417*	*128*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Very Serious Problem	41	39	44	39	44	39	44	42	45	40	40	44	39	39
Serious Problem	34	33	35	36	32	34	33	38	33	35	29	39	30	27
Not Very Serious Problem	15	16	14	15	15	17	13	12	12	16	18	10	20	17
Not A Problem At All	7	7	6	7	6	6	7	5	6	5	12	3	8	14
Don't know	2	3	1	1	3	3	1	0	2	2	1	2	3	1

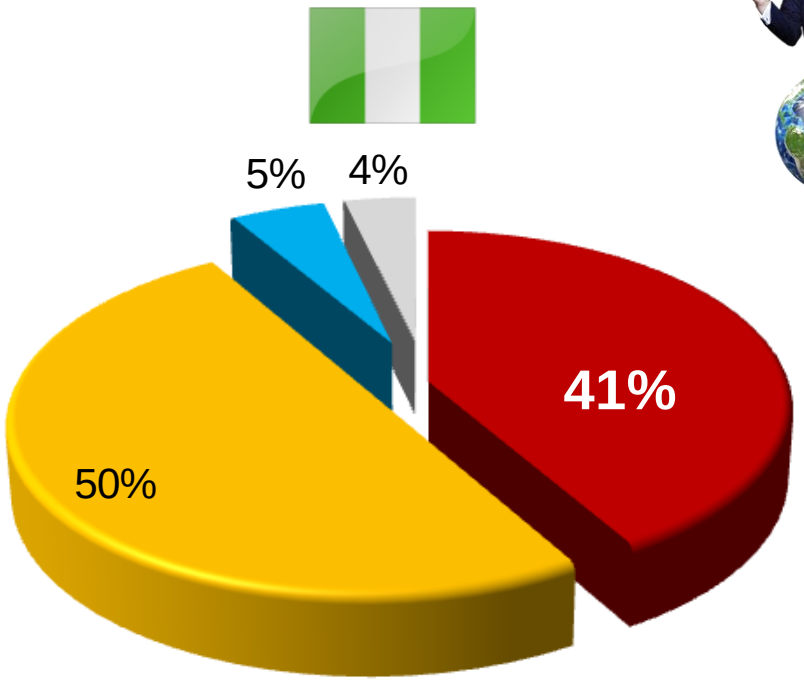
The seriousness of climate change is acknowledged across the board

Those with tertiary education, especially in Nigeria, are more sensitive to the issue; as are rural dwellers

In Kenya, those above the age of 30 are more concerned than those below 30

Climate Change: Just a Hoax?





Although there is uncertainty about whether climate change is caused by human activity or whether it is the result of natural cycles, only small minorities (Kenya: 3%; Nigeria: 5%) would agree with Donald Trump…

- Rising levels of greenhouse gases through human activities
- Natural cycles and processes
- Climate Change is a hoax; it does not happen
- Don't Know

Base: Total Samples

Climate Change: Just a Hoax?

(by demographics)

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1070*	*387*	*683*	*529*	*541*	*616*	*348*	*106*	*125*	*789*	*156*	*376*	*461*	*233*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Rising levels of greenhouse gases through human activities	50	50	49	54	45	52	49	38	62	49	43	58	51	33
Natural cycles and processes	43	43	43	39	47	41	43	54	29	44	48	35	42	58
Climate Change is a hoax; it does not happen	3	4	2	4	2	3	3	3	5	3	2	3	3	3
Don't know	4	4	5	3	6	3	6	6	4	4	7	4	4	6

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
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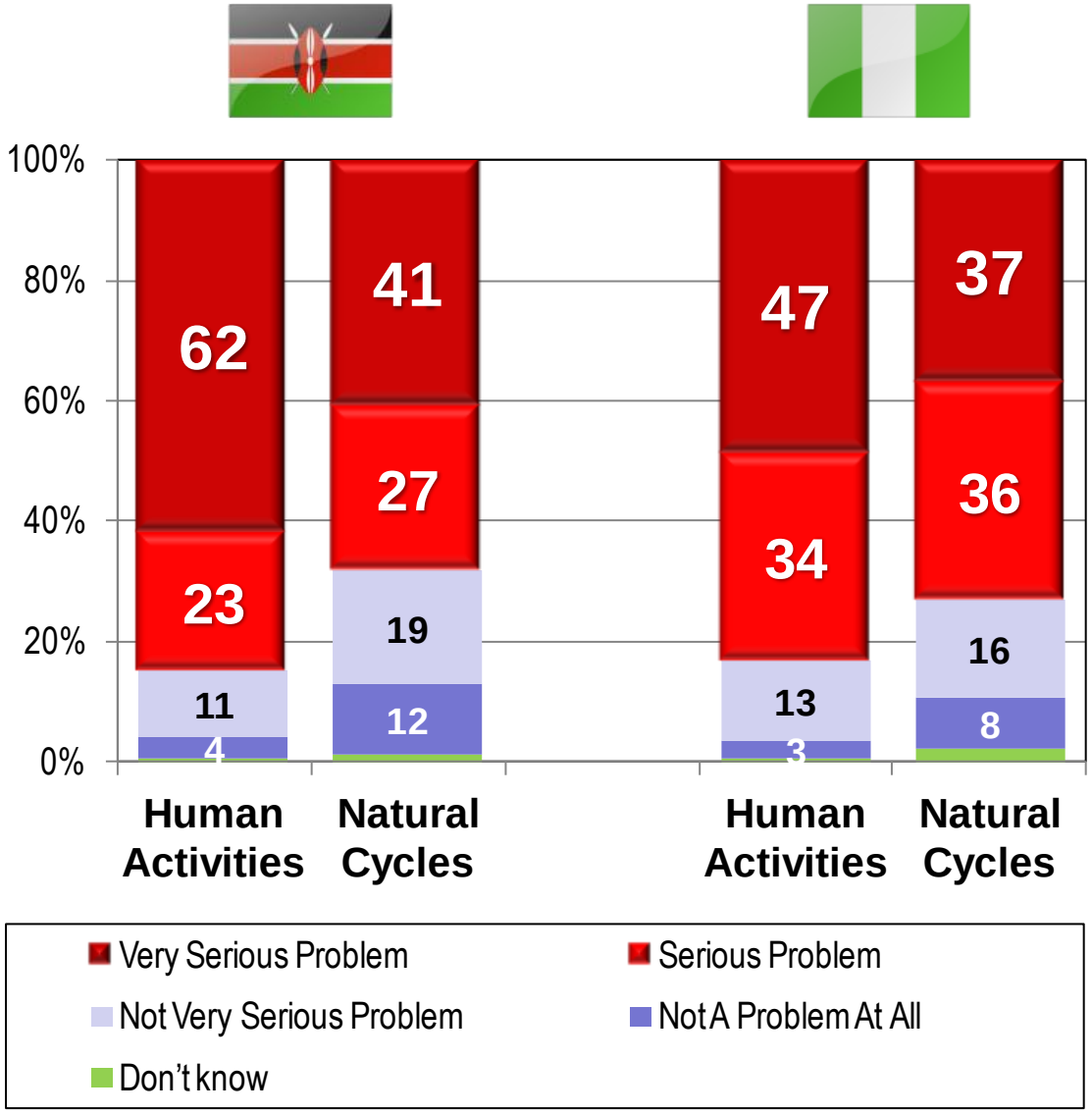
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Rising levels of greenhouse gases through human activities	42	43	40	44	39	42	42	34	43	44	29	45	42	26
Natural cycles and processes	50	49	51	47	53	50	49	55	52	47	57	50	47	58
Climate Change is a hoax; it does not happen	5	5	5	6	4	4	6	8	3	5	7	4	4	9
Don't know	4	3	4	3	4	5	3	3	2	4	6	0	6	8

Respondents with higher educational achievement and, to an extent, higher socio-economic class, are more likely to consider climate change the result of human activities; in Kenya to a greater extent than in Nigeria

Respondents above the age of 46 and those with little or no formal education tend to see climate change as the result of naturally occurring cycles

Climate Change: Just a Hoax?

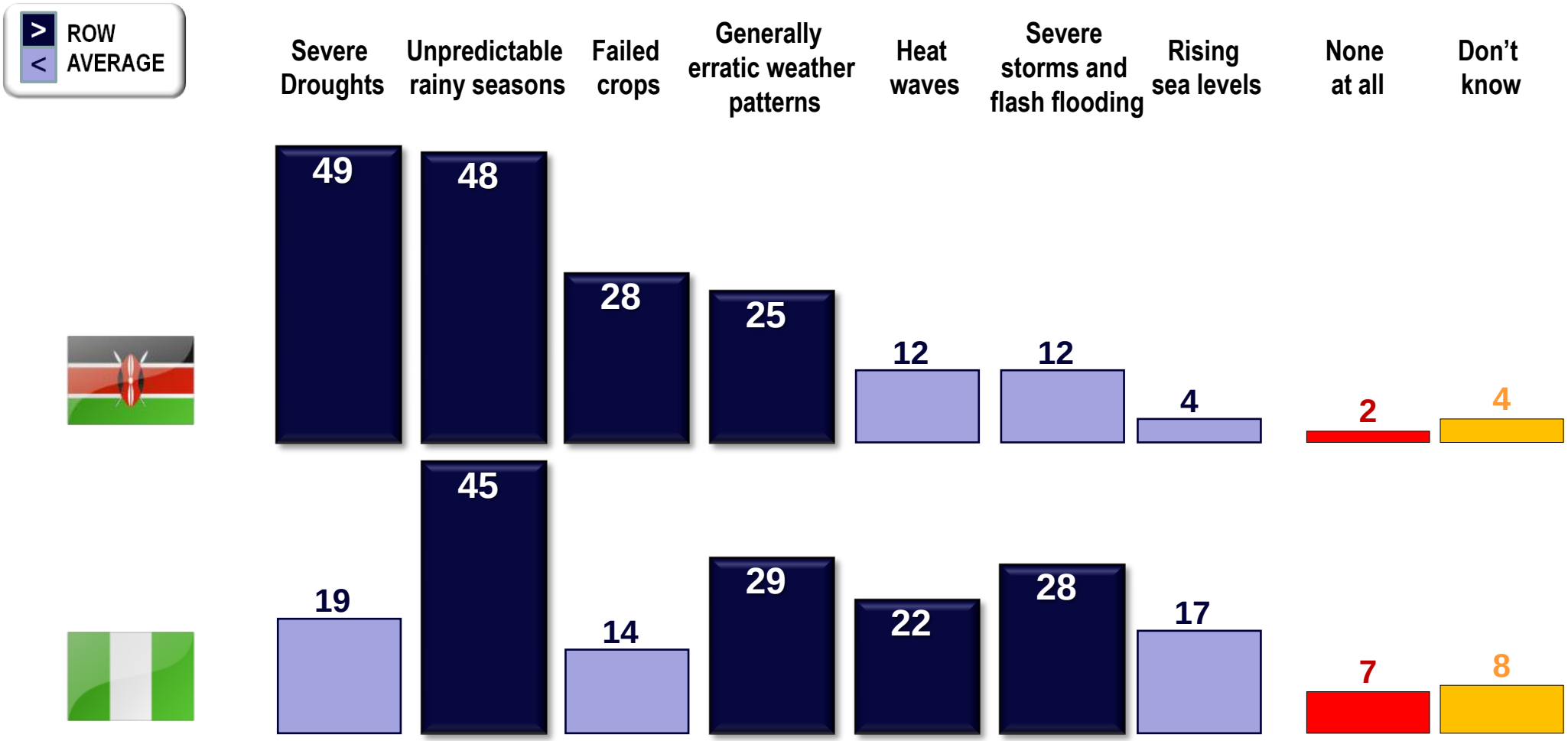
(cross-tab: "climate change is caused by human activities" vs. "natural cycles")



In both countries, climate change is perceived as a serious/very serious problem, if respondents are convinced that climate change is the result of human activities rather than natural cycles

However, in Nigeria, the gap between both groups (81% vs. 71%) is smaller than in Kenya (85% vs. 68%); i.e. Nigerians tend to be concerned about changing climate *per se* rather than about it's causes

Experience of Effects of Climate Change



Percent; Base: Total Samples

Experience of Effects of Climate Change
(Summary)

Respondents have already experienced the effects of climate change:

- In Kenya, 49% have experienced severe droughts; 48% claim that rainy seasons have become unpredictable
- 28% proffer failed crops; and 25% generally erratic weather patterns
- These effects have been experienced to a greater extent by rural dwellers
- 12% complain about flash floods and heat waves; urban respondents are concerned about these more than members of the rural population
- In Nigeria, the main concern is about unpredictable rainy seasons (45%); droughts, on the other hand, are mentioned by just 19%
- While 22% of urban Nigerians have observed severe storms and flash flooding, 35% of rural dwellers have done so
- 29% Nigerians, virtually across demographic groups, feel that weather patterns have become erratic; and one in five (22%) experienced heat waves;


Image Source: Hopefornigeria.com

Experience of Effects of Climate Change
(by demographics)

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
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	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Severe Droughts	49	46	51	49	49	48	50	55	56	49	43	54	48	44
Unpredictable rainy seasons	48	47	49	51	45	43	51	66	42	50	45	45	51	45
Failed crops	28	23	31	27	29	27	30	31	22	29	31	29	29	27
Generally erratic weather patterns	25	25	25	25	25	23	26	31	22	25	23	26	24	25
Severe storms and flash flooding	12	16	10	12	13	12	14	6	24	11	10	17	8	11
Heat waves	12	18	9	14	10	13	14	4	22	11	10	13	13	8
Rising sea levels	4	4	3	4	3	5	3	3	5	4	3	7	2	2

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
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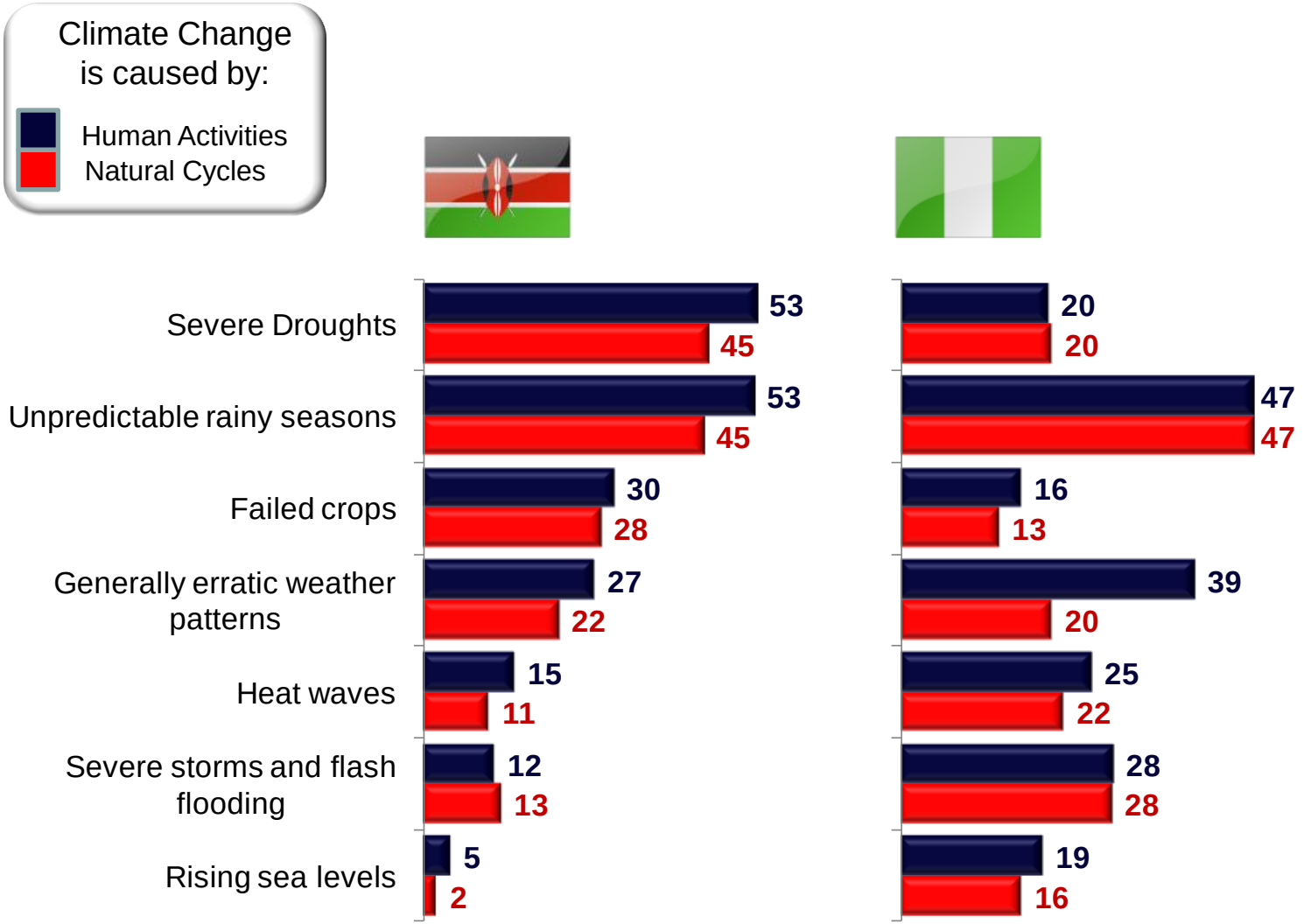
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Unpredictable rainy seasons	45	48	42	44	46	45	46	38	48	46	34	49	43	38
Generally erratic weather patterns	29	28	30	28	29	29	29	22	30	27	31	27	31	27
Severe storms and flash flooding	28	22	35	29	26	28	29	16	21	26	47	26	26	41
Heat waves	22	23	22	24	21	20	25	19	27	21	21	25	21	19
Severe Droughts	19	17	21	20	17	20	18	15	15	20	22	18	18	23
Rising sea levels	17	16	19	17	17	16	19	7	18	17	15	22	12	16
Failed crops	14	12	18	14	15	14	16	10	10	15	20	14	12	23

Experience of Effects of Climate Change

(cross-tab: "climate change is caused by human activities" vs. "natural cycles")



In Kenya, one's opinion on what causes climate change influences one's experience: if climate change is seen as anthropogenic, one is more likely to have experienced it's effects

In Nigeria, on the other hand, events are experienced by both groups in equal measure; the one exception is the observation of erratic weather patterns

Experience of Effects of Climate Change

- Experts present both anecdotal evidence of effects of climate change already being felt as well as results of scientific observations and measurements
- Just like members of the population, they notice erratic weather patterns, extreme weather events and temperatures rising beyond comfort levels
- But they also present evidence of sea levels rising, with concomitant impact on the coastal ecology, herders migrating from degraded grazing lands and entering into conflicts with farmers, and a global increase in wildfires
- In coastal Kenya, a marked rise in the incidence of chikungunya and dengue fevers has been registered
- An important observation is that current phenomena are just the beginning; once positive feedback loops and cascading effects set in, the number of climate events will rise exponentially

UNEP

We are beginning to see very unusual dynamics within landscapes, you know all of a sudden this summer we are seeing fires in Siberia, fires in the Arctic which is incredibly unusual and the work around peat land is also something within my portfolio. So peat fires are huge and they are problematic. We have seen them a lot in Indonesia, in Malaysia and also more recently in the Amazon as we saw those fires but more so across the African continent

MEDIC

I am saying that we live in an environment and we are sitting on gunpowder. I always use the Fulani herdsmen crises in Nigeria as a case study for most people, because a lot of people don't see it as a climate crisis. But I let them know more or less that it is a climate crisis because the reason why a lot of Fulani herdsmen are coming down South is because of desertification; Lake Chad is drying up as well. And for every human being, food, shelter and clothing is your basic necessity

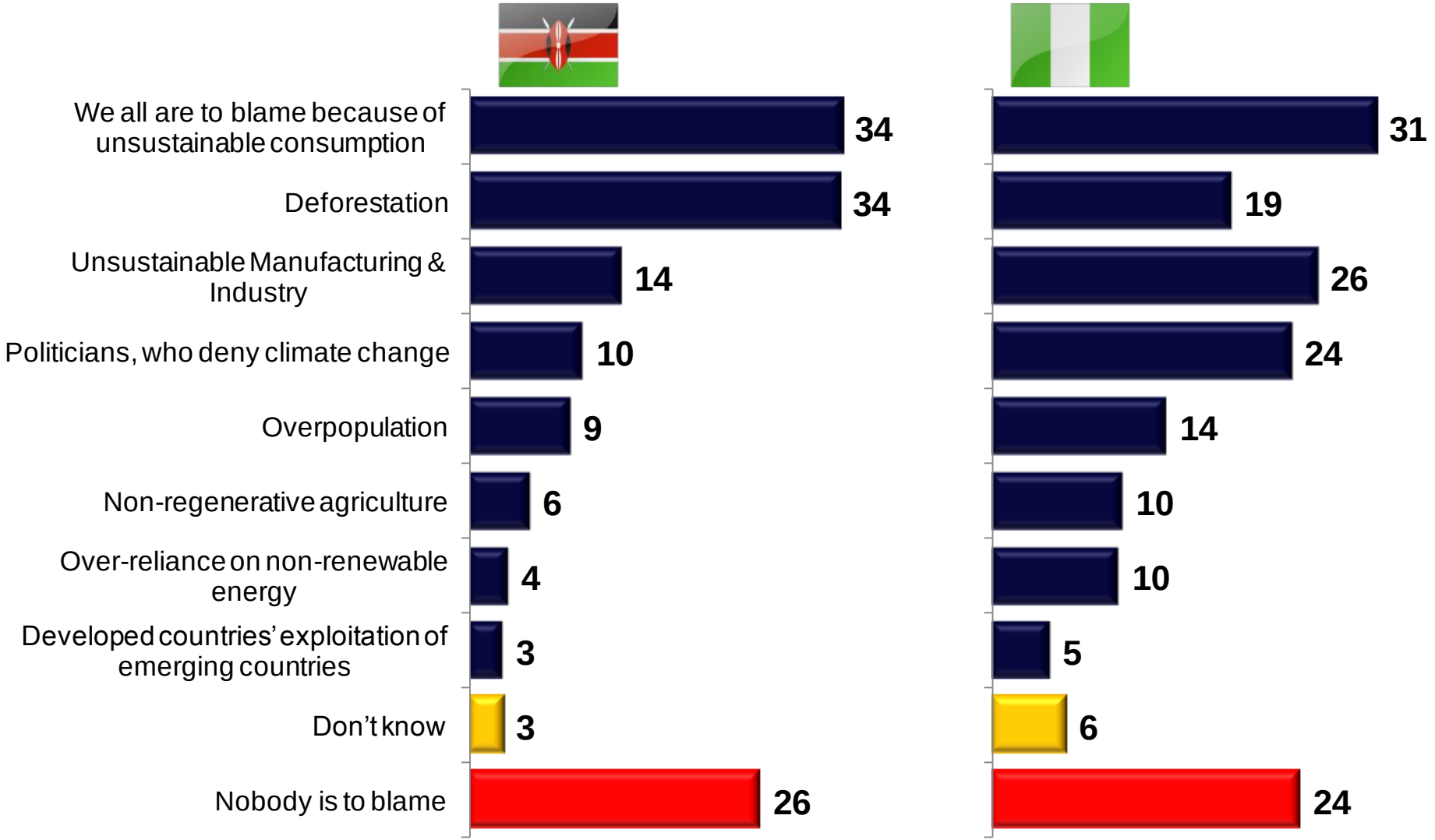
SEACOLOGY FOUNDATION

I am based in Mombasa we focus a lot on the coastal marine ecosystem. Borrowing from what I have observed and what has been measured and according to the research that has already been undertaken and also prediction, I would say there are quite a number of drivers that actually have a major impact on both socio-ecological and economical aspects. For example the rise or increase in temperatures that we have observed quite a number since 1998 up to now, we have observed like nearly six episodes. It may lead to coral bleaching

EAST AFRICA WILDLIFE SOCIETY

And you know the effect of climate change is not like it will happen at once. But the problem is it's a compounding effect. So today is one tomorrow it will go to two, the following day not to three but to four then from four to eight. So it's really compounding. So currently we are still at minor but the time taken between where it was from negligible to minor it won't be the same time taken now going to the next level. The next level we will get to that point at a shorter time than with the current time. So it's at minor but it's a compounding effect

Responsibility for Climate Change



Percent; Base: Total Samples

Responsibility for Climate Change
(Summary)

- About a quarter of Kenyans (26%) and Nigerians (24%) do not feel that anybody is to blame for climate change; this is especially true for lower socio-economic classes and respondents with low educational achievement in both countries
- With 34% each, Kenyans identify deforestation and everybody's unsustainable consumption habits as chief culprits
- For Nigerians, too, consumption habits are mainly to blame (31%), but also unsustainable industries (26%) and politicians, who deny climate change (24% vis-à-vis 10% in Kenya); deforestation comes in at 4th place in Nigeria, with just 19%
- Overpopulation is mentioned more frequently in Nigeria (14%) than in Kenya (9%)
- Non-regenerative agricultural practices and reliance on non-renewable energy (10% each) play a greater role in Nigeria than in Kenya (6% and 4%, respectively)


Image Source: Daily Nation

Responsibility for Climate Change
(by demographics)

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1070*	*387*	*683*	*529*	*541*	*616*	*348*	*106*	*125*	*789*	*156*	*376*	*461*	*233*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
We all are to blame because of unsustainable consumption	34	40	30	37	31	36	32	27	48	33	27	43	31	24
Deforestation	34	30	36	36	31	31	37	40	32	35	28	36	36	25
Unsustainable Manufacturing & Industry	14	18	12	16	12	13	14	20	22	13	10	19	13	8
Politicians, who deny climate change	10	14	8	12	9	11	10	8	19	10	6	13	11	6
Overpopulation	9	10	9	11	8	10	9	8	11	9	7	12	10	4
Non-regenerative agriculture	6	6	5	6	5	6	5	7	5	6	6	8	4	4
Over-reliance on non-renewable energy	4	5	3	5	3	4	3	6	6	4	3	5	3	3
Developed countries' exploitation of emerging countries	3	4	3	5	1	3	4	4	2	4	0	3	4	2
Nobody is to blame	26	22	29	22	31	25	29	28	14	26	39	17	25	43

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1009*	*574*	*435*	*503*	*506*	*503*	*433*	*73*	*295*	*574*	*140*	*464*	*417*	*128*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
We all are to blame because of unsustainable consumption	31	30	31	33	28	34	27	25	27	31	35	28	34	30
Unsustainable Manufacturing & Industry	26	31	19	25	26	24	29	25	35	25	9	33	23	10
Politicians, who deny climate change	24	22	26	23	25	27	22	8	17	28	20	22	26	22
Deforestation	19	17	22	20	18	17	23	11	23	17	19	24	15	13
Overpopulation	14	12	17	14	14	15	14	5	12	12	25	13	12	23
Non-regenerative agriculture	10	10	11	12	9	8	14	5	12	10	7	12	9	8
Over-reliance on non-renewable energy	10	10	11	10	10	10	10	8	12	10	8	12	8	9
Developed countries' exploitation of emerging countries	5	3	6	4	5	5	5	3	3	3	12	3	4	11
Nobody is to blame	24	25	24	22	27	23	24	38	17	26	32	19	27	36

The Culprits behind Climate Change

- While there is a consensus that industrialised nations put the world onto the trajectory towards climate change, African countries are contributing towards climate change and environmental collapse
- Mitigation of climate change is everybody's responsibility, regardless of past culpability
- The main outtake for African countries is to avoid repeating mistakes made by others, while doing everything in their power to remain active in mitigation efforts
- That being said, there can be no excuse for industrialised nations to ignore the real concerns of smaller nations, that are the first to feel the full brunt of climate change
- And while mitigation and lifestyle changes are commendable, they generate not enough impact to compensate for inaction on the side of industrialised nations

UNEP

So in the scheme of things, yes, the global north is contributing more because of obviously greenhouse gas… If we think about the numbers in our population, our growing populations one of the challenges that we've been having is also the hydrofluorocarbons. We are just having the wrong fridges, the wrong air conditioning equipment, you know all systems that are never checked…and then you magnify that to a continent, it's problematic

AHK

For me the Paris Agreement was also looking at all nations; this is where we are today, this is where we want to be together…So for me climate change is not a matter of who has done what but what we should do today to make tomorrow better. So all countries contribute together and develop renewable energy sources reducing the development of these other fossil sources would be the solution to have a better environment for future generations without really considering the fact that who played what role at what point. It's just important to know that the most polluting countries today as we speak being China and the United States of America should rectify and should contribute in reducing CO2 emissions but everyone has to play a role

LAGOS STATE GOVERNMENT

I believe that we should do what we need to do in a sustainable manner, learn from their mistakes and keep doing it. They did not stop us from doing ours, and the only thing that was evil in what happened in those days was taking the blacks as slaves and using them in their plantation. Slave trade has been abolished; they were just smart people, so we should get wise and smart environmentally, socially and economically

EAST AFRICA WILDLIFE SOCIETY

So when you look at the big economies…and then small nations like the Pacific countries, as where they can actually see the effects… The impact for them is real. So when you see them going to conferences and they try to argue it out, they are saying, but the big economies they look at their people the policies and the agenda, then climate change Is not part of it, and they can use climate change to continue fighting their wars. So until as humanity we agree that now this is what we are doing and this is the direction we are taking, I think the small things that we do even if you do it at a personal level , if they are cumulative in terms of the direction we are taking I think they usually have a very minimal effect

The Role of Capitalism

- Capitalism, in the form of private enterprise, is not condemned by experts; rather, it has a constructive role to play in development and in the advancement of sustainable technologies
- Trade in carbon credits or innovation in energy-efficient technologies require the incentive of corporate profits
- However, there are some conditions that would reign in the laissez-faire style capitalism endorsed by the current US administration:
  - Corporate social responsibility as a counter-measure to single-minded focus on shareholder value
  - Accountability to all stakeholders
  - Inclusion of all costs in the balance sheet rather than continuing passing them off to the public; e.g. carbon certificates or carbon tax

AHK

I have worked in this sector now for two years and I can see the development from the day I started working in renewable energy here and until today. I think there is a high rise in the usage of renewable technologies…So maybe there were challenges before but like we see the investment from the Kenya government and Kenya private companies in renewable energy and energy efficient technology.

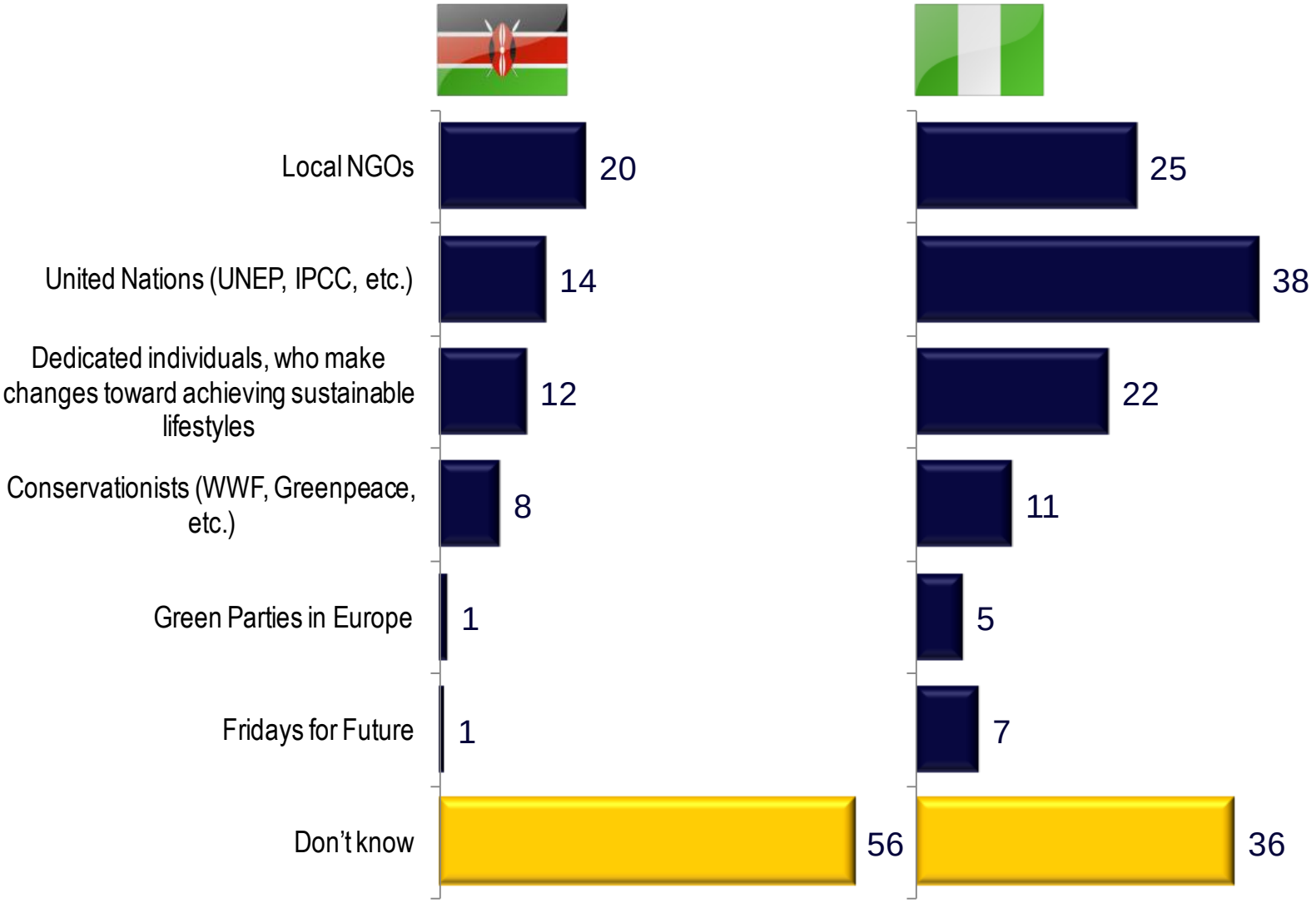
UNEP

You know I think one of the beauties of being in a global village is that when a horn is tooted around " oh yeah we've heard about that company X in Zambia is extracting copper unsustainably, okay where is the company from? Or the company is from Canada? So then the constituencies on the Canadian side you know the civil society groups and begin to hold them accountable and as we very well know, A lot of these companies are member based companies and they've got different stakeholders that invest in them… and then suddenly the investors begin to pull out.

ILLUMINA AFRICA LTD.

So capitalism is important for the society. If you go back to basic economics, if you don't have capitalism you don't really have an efficient use of resources. Or you have a communist or a socialist system, in which things don't work the same as a capitalist economy…but it has to be incentivized in the right way. Its true capitalism by itself can be detrimental right? Because if people are only thinking about profits in absolute sense they have to think of more economic profits that take the externalities into account. But carbon credit is something that can do that

Organisations Fighting Climate Change



Percent; Base: Total Samples

56% of Kenyans cannot name an organisation involved in fighting climate change

Just 14% mention the United Nations or one of its agencies – and that with Kenya being the global head-quarters of UNEP

In Nigeria, 36% fail to name an organisation

38%, however, mention the United Nations, followed by Local NGOs (25%) and individual activists

Organisations Fighting Climate Change
(by demographics)

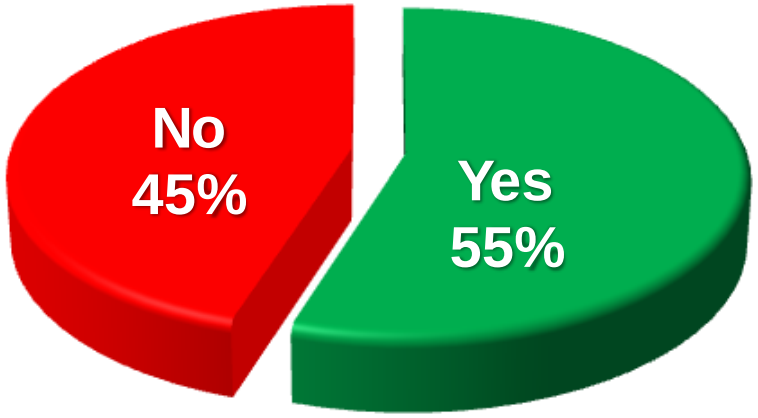
		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1070*	*387*	*683*	*529*	*541*	*616*	*348*	*106*	*125*	*789*	*156*	*376*	*461*	*233*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Local NGOs	20	19	20	23	17	19	19	25	21	20	15	28	16	12
United Nations (UNEP, IPCC, etc.)	14	19	12	16	13	16	13	12	35	13	6	23	11	7
Dedicated individuals, who make changes toward achieving sustainable lifestyles	12	11	12	13	11	11	12	16	17	11	12	14	11	9
Conservationists (WWF, Greenpeace, etc.)	8	9	8	9	7	8	9	8	11	8	4	10	8	6
Green Parties in Europe	1	2	1	1	1	1	1	0	2	1	1	2	1	0
Fridays for Future	1	1	0	1	1	1	1	0	0	1	0	2	0	0
Don't know	56	51	58	51	61	53	59	59	40	56	68	40	62	69

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1009*	*574*	*435*	*503*	*506*	*503*	*433*	*73*	*295*	*574*	*140*	*464*	*417*	*128*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
United Nations (UNEP, IPCC, etc.)	38	42	33	39	37	36	42	29	51	34	28	55	24	23
Local NGOs	25	21	29	27	22	23	27	18	21	21	45	23	21	41
Dedicated individuals, who make changes toward achieving sustainable lifestyles	22	18	27	24	19	24	21	8	17	22	28	20	21	29
Conservationists (WWF, Greenpeace, etc.)	11	14	7	12	9	10	13	5	18	9	2	15	8	3
Fridays for Future	7	9	4	6	8	6	8	7	11	7	0	10	5	3
Green Parties in Europe	5	7	3	5	6	5	6	4	7	5	1	7	4	3
Don't know	36	32	40	33	38	38	30	51	27	37	47	22	46	49

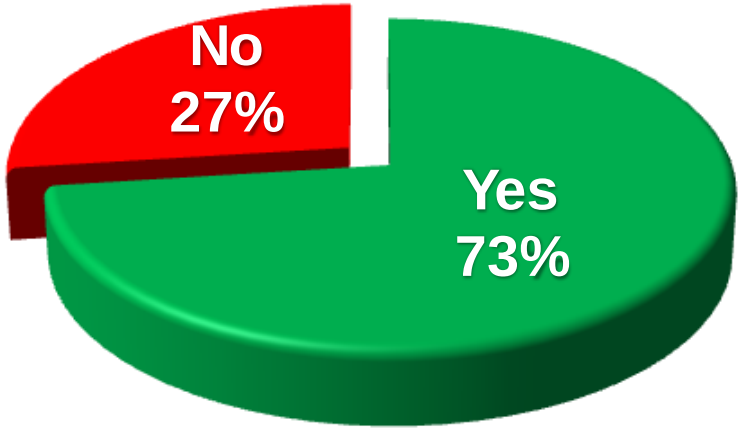
Albeit to different degrees, in both countries the awareness of organisations increases with social class and education, but diminishes with age

Awareness of Ministry of the Environment

Ministry of Environment, Water and Natural Resources



Department of Climate Change
Federal Ministry of Environment, Abuja
Gateway to National Action on Climate Change



- Nigerians are aware of their Ministry of the Environment to a much greater extent (73%) than Kenyans are of theirs (55%)

Percent; Base: Total Samples

Awareness of Ministry of the Environment

(by demographics)

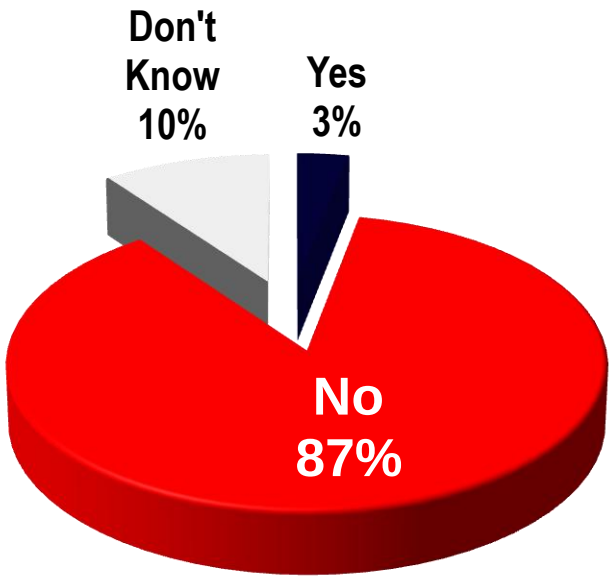
		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1070*	*387*	*683*	*529*	*541*	*616*	*348*	*106*	*125*	*789*	*156*	*376*	*461*	*233*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Yes	55	*62*	51	*60*	50	53	56	*62*	*73*	56	35	*67*	54	38
No	45	38	49	40	*50*	47	44	38	27	44	*65*	33	46	*62*

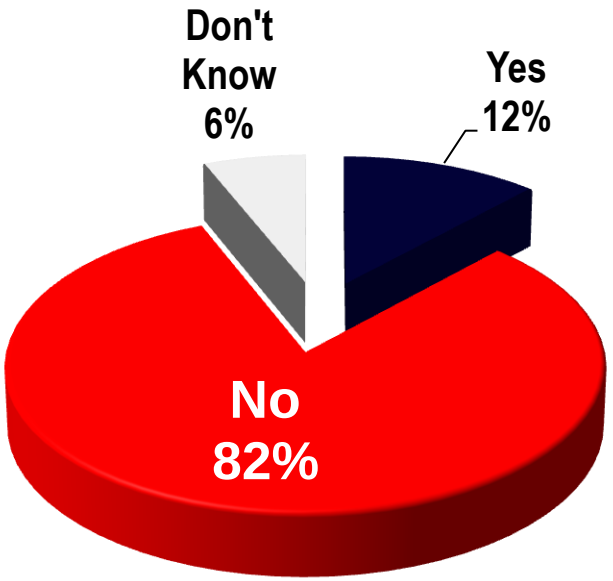
		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1009*	*574*	*435*	*503*	*506*	*503*	*433*	*73*	*295*	*574*	*140*	*464*	*417*	*128*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Yes	73	74	71	76	69	69	78	70	*82*	69	66	*81*	65	66
No	27	26	29	24	*31*	*31*	22	30	18	*31*	*34*	19	*35*	34

In Nigeria, the group with the lowest level of awareness of the country's Ministry of the Environment, namely those with little or no formal education, are better informed (66%) than the average Kenyan (55%)

In Kenya, only members of the upper class (73%) are up to par with the average Nigerian

Awareness of *Fridays for Future*





- Just 3% of Kenyans, vis-à-vis 12% of Nigerians, know *Fridays for Future* at least by name
- Among those who are aware of Fridays for Future, over two-thirds approve of the school strikes (76% in Kenya; 87% in Nigeria)

Base: Total Samples

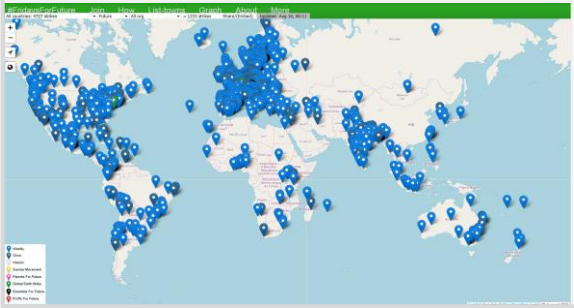
In 2018, at the age of 15, Swedish teenager Greta Thunberg, began her school strikes in order to call for immediate action to combat climate change.

Her activism soon turned into a global grassroots movement - *Fridays for Future*. To date, almost 5,000 strikes have been organised across more than 100 countries.

Fridays for Future school strikes have also been organised in African countries, Kenya and Nigeria among them.

Greta Thunberg has been nominated for the Nobel Peace Prize.

https://en.wikipedia.org/wiki/Greta_Thunberg
https://fridaysforfuture.org/events/map



Awareness of *Fridays for Future*
(by demographics)

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1070*	*387*	*683*	*529*	*541*	*616*	*348*	*106*	*125*	*789*	*156*	*376*	*461*	*233*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	AWARENESS OF FRIDAYS FOR FUTURE													
Yes	3	4	2	3	3	4	2	1	7	3	1	6	2	1
No	87	84	89	87	87	88	86	87	82	86	94	82	89	89
Don't Know	10	12	9	10	10	9	12	12	10	11	5	12	9	10
	APPROVAL OF FRIDAYS FOR FUTURE'S PROTESTS													
Base (Those Aware)	*33*	*17*	*16*	*18*	*15*	*24*	*8*	*1*	*9*	*23*	*1*	*22*	*8*	*3*
Approve	76	82	69	78	73	71	88	100	78	74	100	82	63	67
Disapprove	21	18	25	22	20	25	13	0	22	22	0	18	38	0
Don't Know	3	0	6	0	7	4	0	0	0	4	0	0	0	33

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1009*	*574*	*435*	*503*	*506*	*503*	*433*	*73*	*295*	*574*	*140*	*464*	*417*	*128*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	AWARENESS OF FRIDAYS FOR FUTURE													
Yes	12	13	11	13	11	12	12	10	15	13	1	15	11	3
No	82	81	82	81	83	79	83	90	79	82	89	81	81	88
Don't Know	6	6	7	6	6	9	4	0	5	6	10	4	8	9
	APPROVAL OF FRIDAYS FOR FUTURE'S PROTESTS													
Base (Those Aware)	*120*	*73*	*47*	*63*	*57*	*60*	*53*	*7*	*44*	*74*	*2*	*69*	*47*	*4*
Approve	87	90	81	84	89	85	89	86	91	84	100	93	77	100
Disapprove	7	10	2	6	7	3	9	14	7	7	0	6	9	0
Don't Know	7	0	17	10	4	12	2	0	2	9	0	1	15	0

Approval rates for *Fridays for Future's* school strikes have to be taken with extreme caution, especially in Kenya – bases are very low due to the low awareness levels of this grassroots movement

However, once *Fridays for Future* is known, approval rates tend to be high, especially in Nigeria

Impact of Grassroots Movements

- The experts, for the most part, are well aware of grassroots movements, notably *Fridays for Future*; activist movements are seen as a wake-up call, jolting communities and politicians into action; and hence, they are welcomed
- However, there are some concerns, especially about *Fridays for Future*; of African grassroots movements there are said to be many; yet, they will not receive the same degree of exposure and media attention – hence, local efforts go unnoticed
- Protest movements that do not also engage in meaningful practical activities tend to fall short of their own objectives
- The point is made that *Fridays for Future* or similar movements would achieve more positive impact if they combined protests and school strikes with environmental cleanup or tree-planting actions

UNEP

I think there is almost a tipping point where people get to an edge where they are like "bloody hell! No. I just can no longer be quiet…and maybe I have a bit of a voice within my community…in terms of activism , it's not the activism of Greenpeace, where you go and chain yourself to a boat…It's a kind of a different level of activism where somebody begins to speak…within the community and also takes their voice to another constituency maybe at a political level…So the definition is also rather fluid and also and people are beginning to say "oh why is Africa not having the great Greta of this world?" But…we've had many of those. You just don't hear about them. Greta just happens to come from a developed world where she has the media machinery and she has the right passport to cross these borders…

AHK

I have heard of school children as well who started because I think what we need to remember is that the politics in Kenya and the case in Nigeria do not really particularly have these unless there is a certain pressure from somewhere…when they see people starting to be part of this movement including school children not going to school on Friday because they want to protest and talk about the environment so it's starting to come and we think policy makers are starting to get conscious and they want these votes and they want to make the voters happy

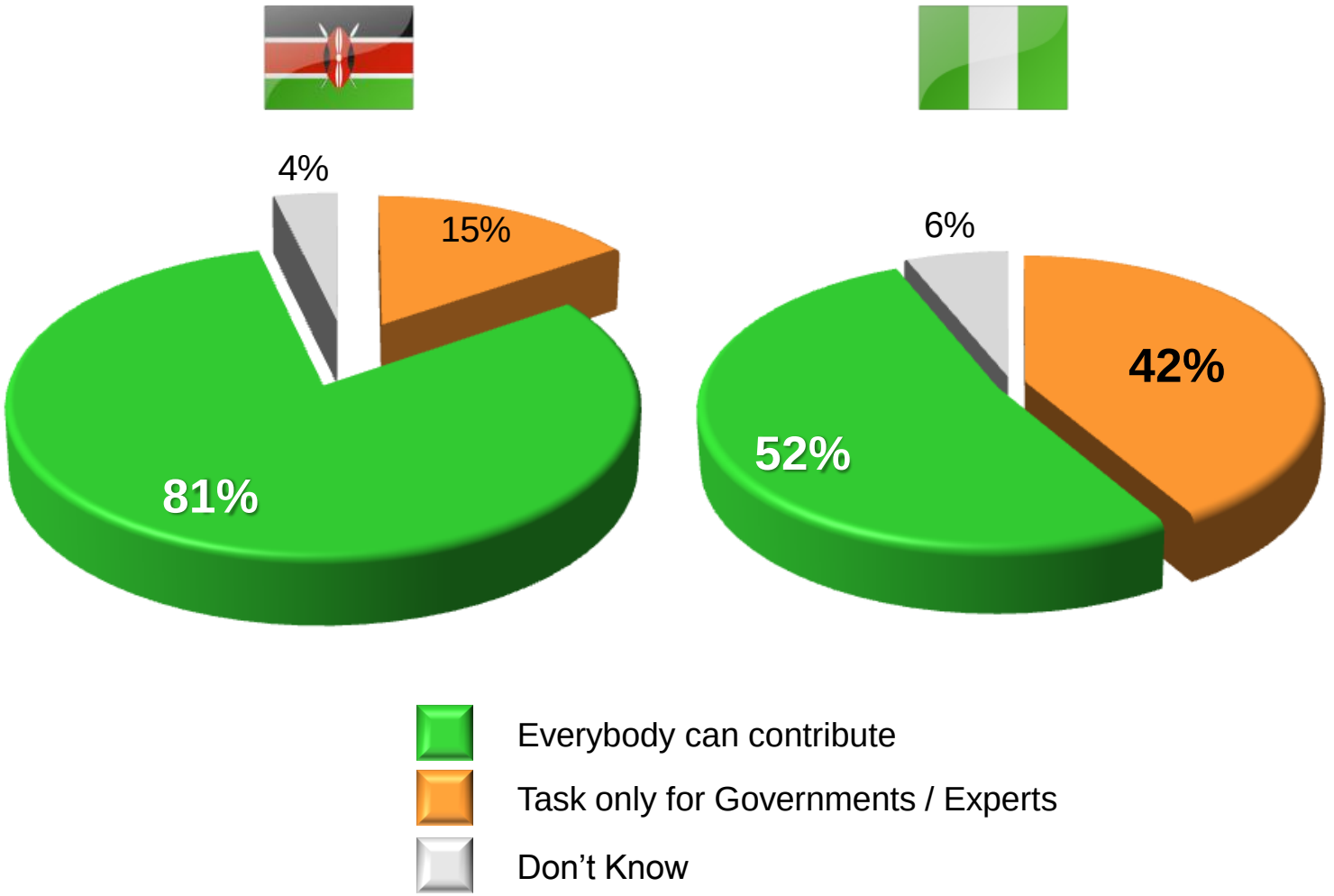
MEDIC

I think it is a wake-up call, it is basically the climate strike…But at the end of the day…in as much we are calling on to the leaders to do something, I also feel that the children coming out to strike and the adults supporting as well should also do something significant. I can imagine if every Friday…those children coming out to strike went out to plant trees…the world would be a better place by now. So I feel that if the children are striking, they should also, just imagine, I'm just thinking about it, in Lagos state for example…five hundred thousand children go to the House of Assembly to strike. And right after the strike on Friday, they go out and plant a tree…So I think it is a welcome idea but we should use that power to do greater things

EAST AFRICA WILDLIFE SOCIETY

Their role is good but as I said you know because climate change is happening so fast you get to organize and move as fast as possible using the most efficient and effective way. So until the time that you have movement lobbying to change some of the laws and policies then all the rest is just the normal stuff. Activism is a very short sighted objective

Who is to Mitigate Climate Change?



While majorities in both countries feel that mitigating climate change is a task everybody can contribute to, Kenyans opt for individual action to a much greater degree than Nigerians

42% of Nigerians feel that fighting climate change is a task best left to government and experts; a point of view taken by just 15% of Kenyans

Base: Total Samples

Who is to Mitigate Climate Change?

(by demographics)

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1070*	*387*	*683*	*529*	*541*	*616*	*348*	*106*	*125*	*789*	*156*	*376*	*461*	*233*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Task only for Governments / Experts	15	13	17	16	14	12	20	22	18	14	20	11	14	24
Everybody can contribute	81	84	79	81	81	84	77	75	81	82	75	86	82	70
Don't know	4	3	4	3	5	4	3	3	2	4	5	2	4	6

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1009*	*574*	*435*	*503*	*506*	*503*	*433*	*73*	*295*	*574*	*140*	*464*	*417*	*128*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Task only for Governments / Experts	41	41	42	40	43	38	44	53	40	43	39	43	38	46
Everybody can contribute	52	52	52	55	50	56	51	37	55	51	53	54	55	39
Don't know	6	7	5	5	7	6	6	10	5	6	9	3	7	15

In Kenya, advocates for individual action tend to be urban dwellers, younger people, and those with tertiary education

In Nigeria, albeit at a lower level, individual action is proposed more by men, young people, the affluent, and those with higher education

In both countries, the older generation and those with little or no formal education would leave it up to experts and the government

Stakeholders in Climate Change Mitigation

- The range of stakeholders is as varied as the problems posed by climate change and degradation of the environment:
- From politicians setting regulatory frameworks to industries becoming greener, from activist movements setting agendas to individuals adjusting consumption patterns – everyone is tasked with mitigating climate change
- As is taken as an obvious given that action plans will be based on science, scientists are not even identified as a separate group of stakeholders

SEACOLOGY FOUNDATION

Or controlling emission; first of all we need to recognize the government plays a key role. It provides the enabling policies and legislative environment. Then we have the major emitters according to the sectors. We are talking about energy, we are talking about transport, and we are talking about agriculture and waste management. And each of them you will find that they're specific stakeholders. We have got industries for example, in our country we have like the county government who play a major role in terms of waste management, agriculture we talk about various stakeholders; we have got farmers, and then we talk about other aspects like in management of actual ecosystems that act as carbon sieve. We are talking mangroves and forests. We have got a number of stakeholders who play a key role there. We have got private sector and the non stake actors. We have communities; so in my own opinion if we look at the main stakeholders I think all of us have a role to play.

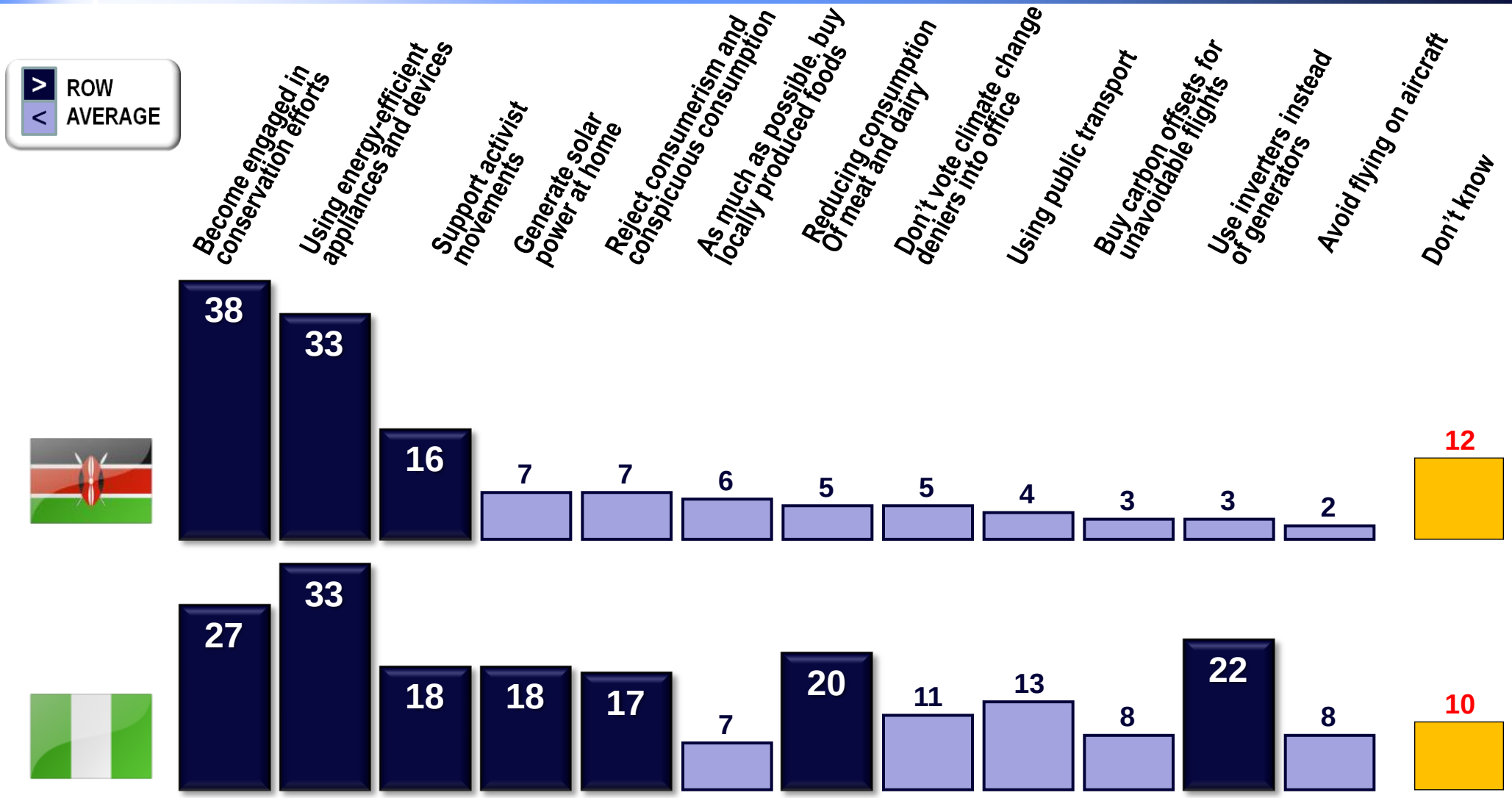
MEDIC

Charity starts from the home, starts from the school, starts from the churches, starts from the big organizations as they call them, start from areas where you can have full control. You reach out to residential estates, and assess their own commitment; because somebody can easily carpool as their own commitment while another person can say, you know what, I am not going to use air conditioning today or my family is not going to use, or my company is not going to use those particular things. Or to plant more trees instead of one thing or the other. Like I said before, when you have a lot of people doing different things, so we mobilise all these people and say what commitment can you do to reduce climate change to 1.5 degrees; what is your own input

UNEP

I think most of the stakeholders are…first it's the governments because of the policies that obviously they are condensing, you know they are driving within their jurisdiction for legislation. So that's very critical and then the private sector entities because you know private sector entities are very powerful. So they come in they make certain decisions and sometimes a lot of these private sector entities are not necessarily African private sectors institutes. They may have a foot in the continent but their decisions are being made in totally different continents. They also have to be part of the conversation around the table to discuss and be able to be held accountable

Individual Actions to Mitigate Climate Change



Base: Those proposing Individual Action; Kenya: 865; Nigeria: 528

Individual Actions to Mitigate Climate Change
(Summary)

- In both countries, one out of three respondents advocate energy efficient appliances; in Nigeria, given the notoriously erratic power supply, using inverters or generating solar power are also frequently mentioned
- Engaging in conservation efforts attracts higher rates of mention in Kenya (38%) than in Nigeria (27%)
- Fewer than 20% in either country would advocate supporting activist movements
- Attempting to limit one's consumption to locally produced goods is supported only by minorities in both countries
- Purchasing carbon off-sets or avoiding air travel altogether finds little support even among the upper socio-economic echelons – the ones most likely to travel by plane

Ways to Mitigate Climate Change

(Kenya – by demographics)

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base: Those proposing Individual Action	*865*	*325*	*540*	*427*	*438*	*517*	*268*	*80*	*101*	*647*	*117*	*324*	*377*	*164*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Become engaged in conservation efforts	38	34	41	39	37	34	43	53	44	39	32	37	39	40
Using energy-efficient appliances and devices	33	37	31	36	31	36	29	33	35	35	23	37	35	21
Support activist movements	16	17	16	16	16	16	17	16	24	15	19	20	15	13
Generate solar power at home	7	12	5	8	7	9	7	1	11	7	6	10	6	4
Reject consumerism and conspicuous consumption	7	10	5	7	6	6	8	4	9	7	5	11	4	4
As much as possible, buy locally produced foods	6	7	5	6	5	6	7	0	9	6	3	8	5	2
Reducing consumption of meat and dairy	5	6	4	5	4	5	5	4	8	4	8	7	3	4
Don't vote climate change deniers into office	5	7	3	5	4	4	5	3	5	5	3	6	4	1
Using public transport	4	6	3	5	3	4	4	0	6	4	4	6	3	2
Buy carbon offsets for unavoidable flights	3	5	2	4	3	3	3	4	9	3	3	3	3	4
Use inverters instead of generators	3	4	3	4	3	3	3	3	7	3	2	5	2	2
Avoid flying on aircraft	2	2	2	1	3	3	1	0	4	2	2	4	1	0
Don't know	12	12	11	8	15	13	11	8	9	11	20	7	13	17

Ways to Mitigate Climate Change

(Nigeria – by demographics)

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base: Those proposing Individual Action	*528*	*300*	*228*	*275*	*253*	*282*	*219*	*27*	*162*	*292*	*74*	*250*	*228*	*50*
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
Using energy-efficient appliances and devices	33	31	36	32	34	34	29	48	28	32	46	29	35	40
Become engaged in conservation efforts	27	24	32	32	23	23	35	11	31	26	27	30	24	28
Use inverters instead of generators	22	22	21	21	22	21	22	30	29	16	30	22	20	28
Reducing consumption of meat and dairy	20	18	23	18	23	20	21	19	14	25	15	20	20	24
Support activist movements	18	16	20	19	17	17	19	11	18	15	28	19	13	34
Generate solar power at home	18	18	18	17	19	17	18	19	15	19	16	19	18	8
Reject consumerism and conspicuous consumption	17	15	20	19	15	17	19	7	12	20	19	18	16	20
Using public transport	13	13	13	12	15	14	12	15	9	15	15	14	12	18
Don't vote climate change deniers into office	11	10	12	10	12	10	11	15	9	11	18	12	8	20
Avoid flying on aircraft	8	8	9	9	8	7	9	19	7	9	8	9	6	16
Buy carbon offsets for unavoidable flights	8	8	7	8	8	8	9	0	10	7	8	8	7	12
As much as possible, buy locally produced foods	7	5	10	9	6	7	7	11	6	7	12	7	7	12
Don't know	10	13	6	9	11	11	8	11	12	10	5	7	14	4

Mitigating Climate Change as Individuals

- Although experts concede that individual actions cannot compensate for the effects of emissions by industry, traffic and transportation, as well as energy generation, everybody is called upon to do his or her part
- Measures accessible to everyone include recycling, which could even be turned to generate additional income; to waste reduction and to car pooling
- Replacing vehicles with more efficient models will be out of the reach of most; and in any event, despite the congestion of cities such as Lagos and Nairobi, most already use public means of transportation
- Likewise, installing private solar systems is for the privileged few
- More important, however, are individuals becoming engaged and taking ownership of climate change mitigation, either through direct action within their community or through lobbying decision makers

LAGOS STATE GOVERNMENT

So what we've done is encourage people to separate their plastic waste, cartons, nylons and then put the food waste somewhere else where we can make it into manure, and we have identified off-takers like Alchem, they use it to make pillows and all these soft things that we sit on. They need the materials so it's like waste is becoming real wealth

MEDIC

And truth is, even if the government says let's do this, let's do that, it is still the people that would actually make it work. It is the people that would always make this work; and for example, in Lagos state, we just started the 'Blue Box' programme- that is the recycling programme in the state and we are starting with a few people. But it is still the people that have to do it. The government has put in the policy but it is the people that have to run it… in as much as you are doing something on one hand, like campaigning, having conversations, going on social media, you should also be actively doing something for the climate as well

EAST AFRICA WILDLIFE SOCIETY

If you believe in it, you need to start spreading the word but not get into the politics like in the discussion of was it there or was it not there...all this bla bla bla bla and now having small practical solutions. Whenever you get into groups that you can influence the decision makers and lobby groups because that's where decisions are made that are binding. I'll call them that because you can decide as a group in your own estate you are doing something

SEACOLOGY FOUNDATION

The other thing is also awareness; increasing awareness and exercising both at national and community as well as the international community about the effects of climate change. You know unless people are made aware of whatever is happening and its link to climate change, you will find that a lot of people may go through these effects and be unable to know how to respond

AHK

I think it's really an individual choice. Consumption is how you decide; as much as we get plastic water bottles much more easily…we use one water dispenser…and then you have your own small bottle of water in your bag and that is what most of us do

Renewable Energy Market

- Nigeria, a major oil producing country, is not faring well in renewables, except for some hydroelectric installations
- In contrast, in Kenya, renewable power generation through hydroelectric, geothermal and wind installations provides a large proportion of the country's energy needs; fossil fuels are deployed for peak period power generation
- Yet, there remain unexplored opportunities in the efficient usage and management of renewables, such as storage, carbon trading, and providing incentives for private households to invest in sustainable power generation – corporate investors reach the breakeven point 2-3 years earlier than private households
- Alternatives to the national grid (mini grids, photovoltaic solutions for the least affluent, etc.) are not yet competitive in terms of cost per kWh

ILLUMINA AFRICA LTD.

…definitely we come from an age where oil has been heavily subsidized. So when renewable energy has a subsidy like a hidden tariff people complain but there are a lot of hidden subsidies of oil. They should be attached on carbon producing assets or there should be a better incentive if you are sieving carbon. For example if you put solar system in your house or if you had a factory, there should be a better carbon credit market That's something that you should be able to trade your carbon credits, sell them to maybe someone in China who has a coal plant; they can buy the carbon credits. So they are kind of investing in something to offset the carbon we are producing. But I think more needs to be looked into the carbon credit markets in Kenya

ILLUMINA AFRICA LTD.

So energy storage is the next important thing on a grid level to reduce peak uploads because you can basically replace peak generators with battery storage that can react very quickly, we can have a lower level and cost on generators. These peak plants are one of the reasons the grid rates still remain quite high despite this huge penetration of hydrothermal.

AHK

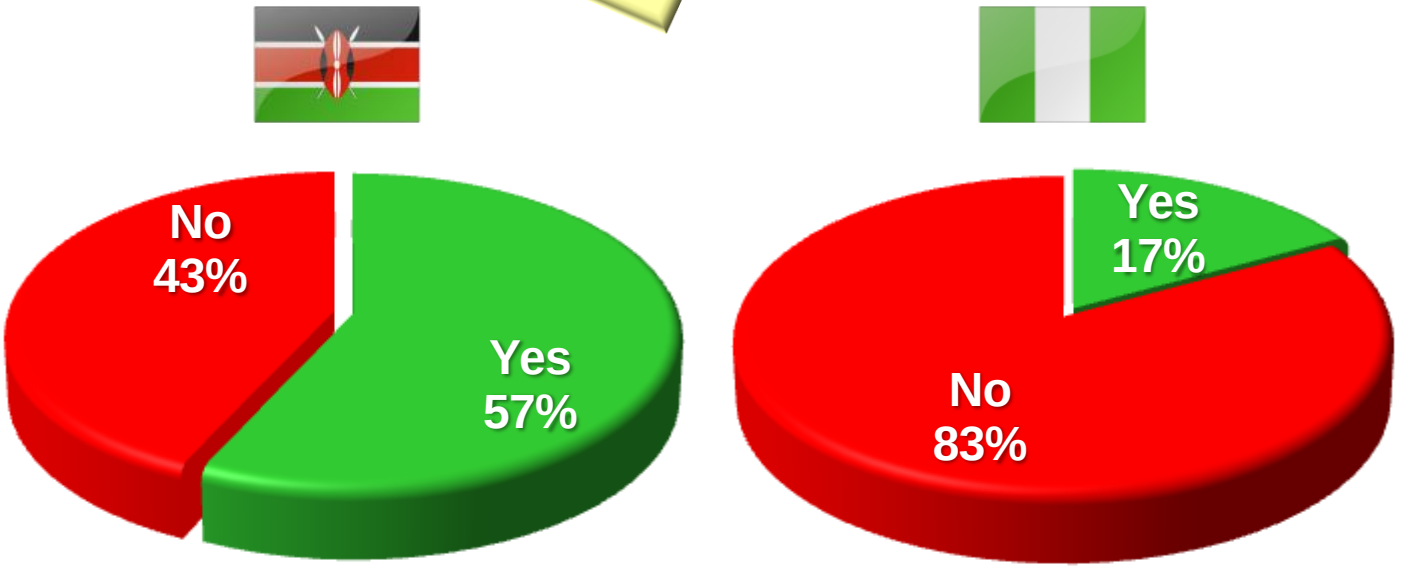
Nigeria's capacity would never be comparable to what Kenya has found and would ever find. We do not have as much definitely…you think you have found something that would boost the economy but it's besides Norway it's very difficult to find a country that has really found crude oil and has developed the country quite extensively and certainly it's not going to be the case for Kenya…also to finish on that one we think yeah we have enough renewable energy sources in Kenya. So oil is not the thing that would make us proud specifically. It would politics and policy makers maybe because it's a topic that seems interesting but for Kenya and for the Kenyan environment it's not the best discovery.

AHK

…we do already have companies like M-kopa, Mobisol and D.Light, a few solar companies who are targeting specific households…So I think that is maybe an approach by some companies to develop technologies that could be used or to share technologies in a way that they can also be used by different types of households because you have everything from a big company or an institution or an organization who can use larger scale renewable energy technologies but also for like larger demand for the small households here in Kenya

Tree Planting – Past 3 Years

Have you planted a tree in the past 3 years?



- Kenyans seem to have taken Wangari Maathai's message to heart (despite deforestation, e.g. in the Mau Forest, continuing unabated): almost 6 out of 10 have planted a tree in the past three years; in contrast, barely 2 out of 10 Nigerians have done likewise
- In Nigeria, on average, 4.6 trees were planted per person planting; in Kenya, the number comes in at 18

Base: Total Samples

The late Wangari Maathai (1940 – 2011) was a pioneer in fighting climate change and desertification. Her activism spread beyond her native Kenya to Africa and the rest of the world..

She founded the *Green Belt Movement* in 1977.

She was appointed Assistant Minister of the Environment and Natural Resources, a post she held between 2003 and 2005.

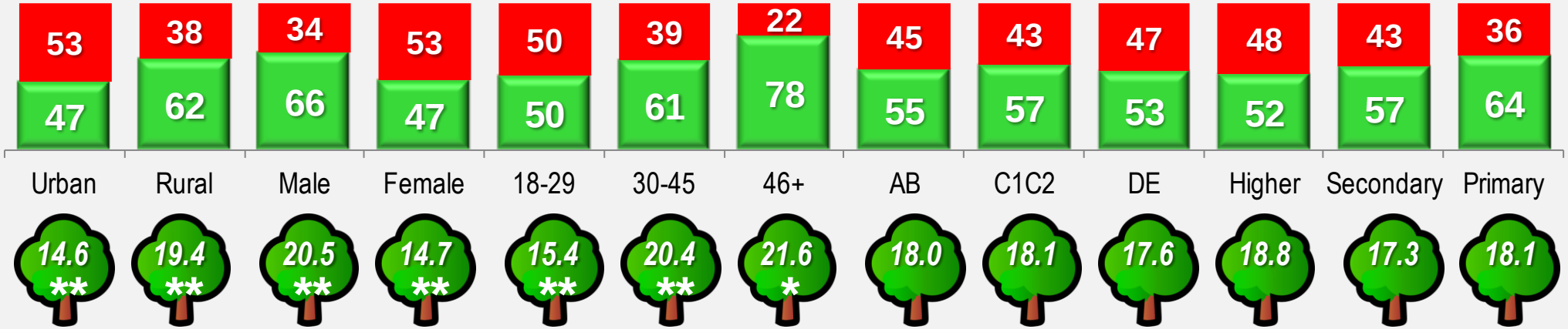
In 2004, she was awarded the Nobel Peace Prize.

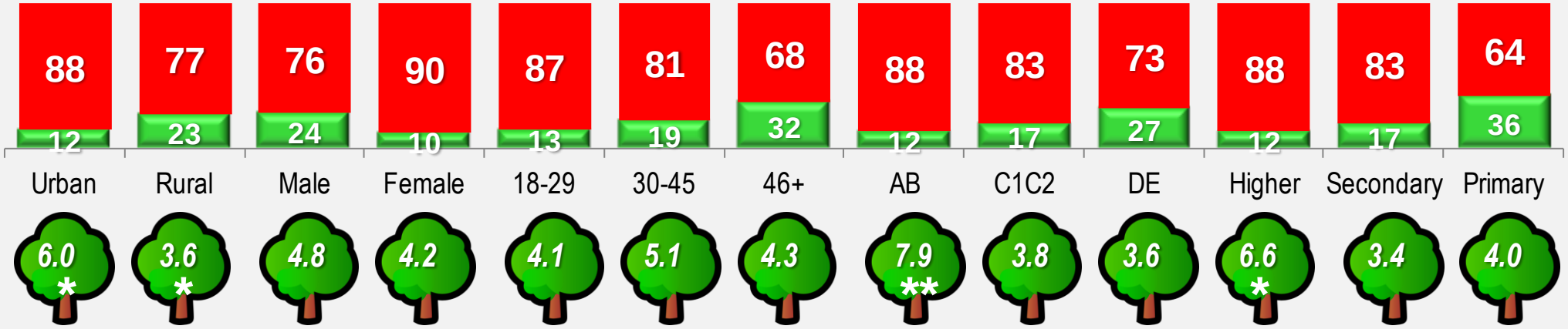
https://en.wikipedia.org/wiki/Wangari_Maathai
https://greenbeltmovement.org/wangari-maathai

Tree Planting – Past 3 Years

(% & *mean scores*; by demographics)

Significant: at: 99% = *** / at 95% = ** / at 90% = *





Tree Planting – Past 3 Years
(Summary)

- Not only did a higher proportion of Kenyans plant trees, but, if they planted trees, they planted more of them than Nigerians
- In Kenya, rural people planted significantly more trees than urban dwellers (95%); males more than females; and older respondents more than the youngest age group
- In Nigeria, only members of the upper class planted significantly more trees than the average Nigerian; rural respondents planted fewer trees than those living in cities (significant at 90%)
- In both countries, attitudes towards the causes of climate change (human activities vs. natural cycles) cannot be shown to significantly influence the number of trees planted

	Total	Rising levels of greenhouse gases through human activities	Natural cycles and processes
Base:	538	308	230
Number of Trees Planted (Mean score)	18.14	18.65	17.45

Base:	155	65	90
Number of Trees Planted (Mean score)	4.82	5.60	4.26

Image Source: United Bank of Carbon

Forest Conservation & Management

- Across the board, protecting, planting, and restoring forests is considered to be of the utmost importance
- Forests serve as carbon sinks, water catchment areas, and contribute to the overall quality of life even in urban areas; the livelihood of whole communities depends on them
- Frequently overlooked, however, is the importance of coastal ecosystems: sea grass beds and mangroves; not only in terms of being efficient carbon sinks and safeguards against loss of biodiversity, but also as effective protection of coastal zones against flash flooding and tidal erosion
- Furthermore, conservation of forests will need to become part of a global "Commons"; Gabon is the first African country to benefit from such an initiative:
  https://edition.cnn.com/2019/09/23/africa/gabon-paid-to-fight-deforestation-intl/

AFRICAN FOREST FORUM

So there is a real threat there on how to balance between development need of the African countries and these mitigation opportunities given by forests... So really climate change is actually affecting people needs for livelihood. Because if they are depending on forests for their development, for their agriculture, for their products and services and these forests have to also be kept and protected… …the emphasis is not more on planting trees it's about growing trees. It means you plant (and) take care of the trees until to the point where they can serve

LAGOS STATE GOVERNMENT

So we've seen a measurement that the ozone hole is closing up but we have not gotten there yet. There is still global warming and the gases that we let off which is carbon-dioxide and what the Paris Agreement has said is we plant a lot of trees and we should create a carbon sink that will eat up all the carbon dioxide in the atmosphere…So most of the issues are anthropogenic activities …Everybody should have trees in their house. What do they do, it sinks in the water, the rainwater. We are also advocating rainwater harvesting. I harvest water when it rains, so that I don't just have a quick flood, I have it stored up

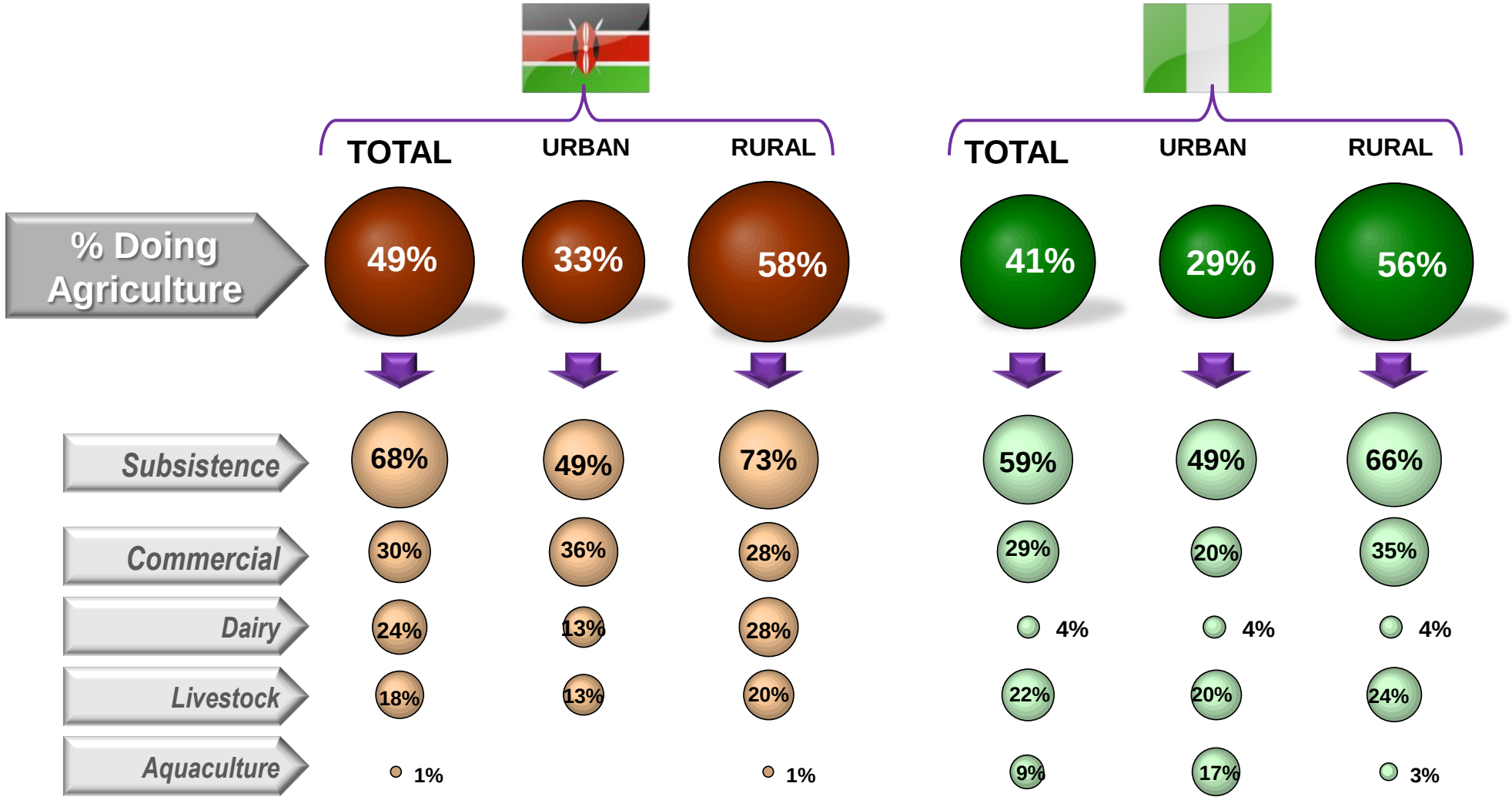
SEACOLOGY FOUNDATION

…a unique project (was launched), called the "Vanga Blue Carbon, Blue Forest project", which is essentially a payment of the consistent services from these communities based in Vanga who are now undertaking efforts to conserve, protect and re-grow the Vanga mangrove forest

UNEP

Look at the story of Karura Forest, for me it's like the story of success. It just took this one woman who just fought and fought and fought and risked her life to make sure that this inner city forest is saved. And now everyone across Nairobi and even across Kenya, they are so happy and they are like "oh my god! All these extreme weather events". It just has to take you moving from Gigiri to Kileleshwa for you to understand how the city can heat up

Agricultural Activities



Base: Total Samples / Those involved in agricultural activities

Agricultural Activities
(Summary)

- Agricultural activities, either on the side or as main source of income, remain important:
  - Kenya:
    - 49% of respondents engage in agricultural activities (33% in urban, 59% in rural areas)
    - 68% consists of subsistence farming
  - Nigeria:
    - 41% are doing agriculture (29% in urban, 56% in rural areas)
    - 59% consists of subsistence farming
- Although not part of the study, we know from previous studies that sustainable agricultural methods (organic, permaculture, etc.) are very much the exception
- And agrochemicals are targeted not just at commercial farmers, but smallholders, as well; in a 2015 study among Kenyan maize growers, all farmers used either pesticides, herbicides or fungicides – or a combination thereof

Unsustainable Agricultural Practices

- Changing public discourse

Toxic chemicals in farms that will take you to an early grave

Report paints grim picture of chemical use on farms, pushes for organic farming

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The continuous use of toxic chemicals to grow food has been found to reduce the nutrients found in crops by killing or disrupting soil microorganisms that allow plants to absorb nutrients.

As a result, the public is continuously exposed to risks of diseases like cancer from herbicides, insecticides, fungicides, synthetic fertilisers and other chemicals, experts have warned. Not only are plants getting more toxic, they are also less nutritious, compelling an individual today to consume three times as much fruit and four to five times as many vegetables to obtain the same amount of minerals and trace elements available in those same foods in 1940, according to data from the US Department of Agriculture for 1975 to 2010.

The Route to Food Initiative has published a report documenting the extent of the problem in the country's food production chain, revealing that many farmers are using harmful pesticides to grow crops. The NGO is pushing for the elimination of pesticides and transitioning to organic farming, claiming that the latter can get the country back on track to nutritious food, and protect people's health.

"The same food crops rejected by the European Union because they contain these toxic pesticides are being sold in our local markets to unknowing buyers," says Route to Food youth ambassador Emmanuel Atamba.

"It is remarkable that the volume of imported insecticides, herbicides and fungicides has more than doubled within four years from 6,400 tonnes (6.4 million kg) in 2015 to 15,600 tonnes (15.6 million kg) in 2018, a growth rate of 144 per cent. Of the total pesticide imports, insecticides, fungicides, and herbicides account for about 87 per cent in volume and 88 per cent of the total cost of pesticide imports," the Route to Food report states.

Already, some of these chemicals, such as the glyphosate-based weed killer known as "Roundup", are being phased out in Europe.

Last month, Germany said it will phase out the controversial weed-killer because it wipes out insect populations crucial for ecosystems and pollination of food crops.

The chemical, also suspected by some experts to cause cancer in humans, is to be banned by the end of 2023 when the EU's approval period for it expires, ministers said. In Kenya, some agricultural companies like TINGA East Africa have appealed to the government to follow suit.

According to the report, because the country lacks data on the use of pesticides or the concentrations of pesticides in water, soil and food and the related impacts, it will be challenging to ensure those necessary safeguards to control how these chemicals are applied.

Agriculture Principal Secretary Hamadi Boga, however, dismissed the report as scaremongering initiated by individuals who are drumming up support for organic farming while demonising the use of chemicals and foods from genetically modified organisms.

Unhealthy plant foods

An individual today consumes three times as much fruit and four to five times as many vegetables to obtain the same amount of minerals and trace elements available in those same foods in 1940, according to data from the US Department of Agriculture for 1975 to 2010.

Alarmist?

"ARVs are potentially carcinogenic, but they save lives. Salt could kill you, but your food without it is unpalatable. Chloroquine is a killer, yet we use it to manage malaria. It's all a question of proper use in the right quantities,"- Agriculture PS Hamadi Boga.

Source: Daily Nation (Print), 10/9/2019

Not just the traditional purveyors of agro-chemicals have been ensconced in sub-Saharan markets; they are now joined by an ever-increasing number of hitherto unknown players from China; chemicals, which are being phased out in much of the world (e.g. neonicotinoids, glyphosate, etc.), are still very much in use

Almost 60 years after the publication of Rachel Carson's *Silent Spring*, in a 2015 project, we even found DDT being sprayed by Tanzanian maize farmers

But as the scanned article demonstrates, public discourse is changing; even among some farmers, reliance on agro-chemicals is being questioned

Soil degradation and erosion due to reliance on agrochemicals, is among the main concerns of Kenyans and Nigerians (see Page 52)

Sustainable Agriculture

- Mechanised agriculture with extensive use of agrochemicals is viewed with suspicion by experts
- Although traditional African farming systems were not always "eco-friendly", often requiring growing areas to be relocated (slash & burn) when soils were depleted, the adoption of industrial farming and mono-cultures is not seen as a remedy for food insecurity in times of climate change
- Rather than endorsing large-scale commercial farming, experts argue empowering smallholders through:
  - Education and technical support (e.g. drip-irrigation vis-à-vis rainfall or flood irrigation)
  - Reliance on traditional drought-resistant crops
  - And regenerative soil management

AFRICAN FOREST FORUM

…that is where we have the challenge because they are going for the more intensive agriculture, more industrial plantations and this is where we can be expecting more problems. But for the small scale agriculture, which is over 80% of the African land, we don't have challenges there

UNEP

…first of all we have used land very badly. Every time it just kind of gets degraded we just move on and try the next and clear another patch and try and grow something and then clear another patch and then of course … Then we suddenly realize that there is limitation of land, and then we are like "okay what are we going to do with this?" let's just add more fertilizers, let's use chemical and then try this route and that route and then eventually we just begin to realize the problems that we create for ourselves…what's interesting is that there is a massive conversation now about how we are reaching food security… traditional food systems and why they are relevant and important. Because there is a way in which we've grown food historically and it's not necessarily…monocultures…how do we manage these food systems to be able to feed ourselves and rethink about, are monocultures really working for us?

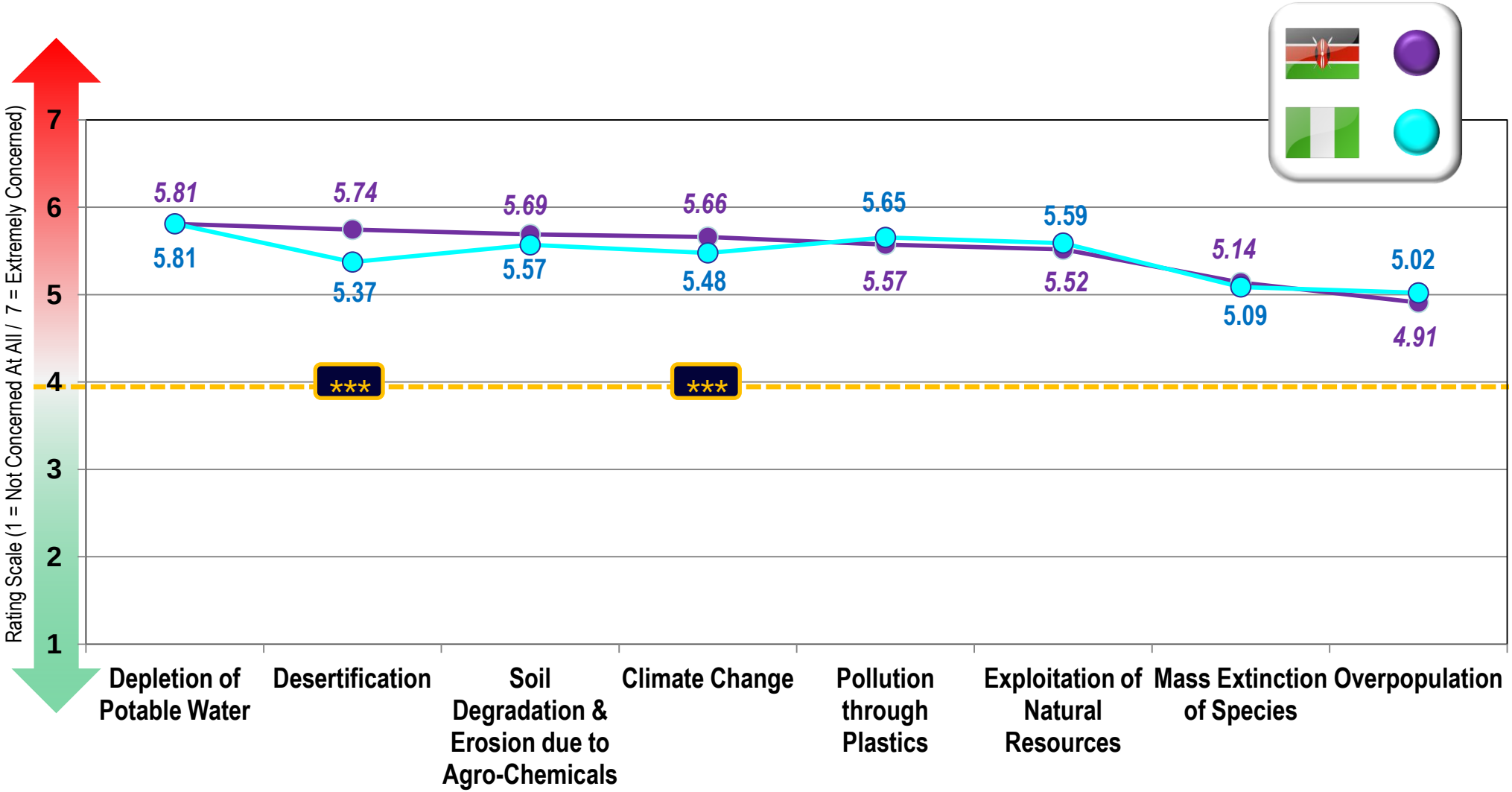
EAST AFRICA WILDLIFE SOCIETY

And that one really matters in terms of which food practices do you use, you need an overhaul in terms of when you look at agriculture. You use whatever resources that you have been using on whatever is being eaten up by climate change issue then you are not being effective. The productivity will go down. On the other side you have increase in demand and you are putting more pressure on the same resources being affected by climate change. So in terms of agriculture it's just an overhaul in terms of the practices being used, the practices that you should use vis-à-vis now the conditions that you have. If it is the rain, if the soil is depleted and everything then what can we do?

ILLUMINA AFRICA LTD.

Government pursues a policy of chemical fertilizers, pesticides, whatever, personally I am more than pessimistic…But then also in Kenya there is a lot going on in the agriculture side. One Acre Fund, for example, they fund in agro-tech. so there is a lot of agro-tech coming up that could be very useful… I think we have to start with the basics first like drip irrigation. I mean it is happening increasingly but you can't rely on rainfall as much

Levels of Concern About Environmental Issues



Significant: at: 99% = *** / at 95% = ** / at 90% = *

Mean Scores; Base: Total Samples

Levels of Concern About Environmental Issues
(Summary)

- Access to potable water is raising the most concerns among Kenyans and Nigerians alike (mean scores of 5.81 on a seven-point scale in both countries)
- Desertification is an issue that Kenyans are more sensitive to than Nigerians, even though it is the main cause of conflicts between herders and farmers in both countries; statistically, the difference in rating is significant at 99% confidence
- There also is a statistically significant (99%) difference in the concern about climate change; Kenyans rate the issue as more significant than Nigerians; in both countries, those with tertiary education are significantly (95%) more concerned than their compatriots
- The least concern, albeit at high levels, is triggered by the issues of mass extinction of species and overpopulation; there are no statistically significant differences in the ratings


Image Source: Nigeriareporter.com

Levels of Concern About Environmental Issues

(*mean scores* by demographics)

		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1070*	*387*	*683*	*529*	*541*	*616*	*348*	*106*	*125*	*789*	*156*	*376*	*461*	*233*
	mean	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*
Climate Change	*5.66*	*5.81* *	*5.58* *	*5.65*	*5.67*	*5.60*	*5.76*	*5.66*	*5.93*	*5.65*	*5.50*	*5.94* **	*5.58*	*5.36* **
Pollution through plastics	*5.57*	*5.72* *	*5.49* *	*5.48*	*5.66*	*5.47* *	*5.71*	*5.73*	*5.86* *	*5.56*	*5.40*	*5.80* **	*5.55*	*5.26* **
Mass extinction of species	*5.14*	*5.14*	*5.14*	*5.16*	*5.12*	*5.02* *	*5.23*	*5.49* *	*5.63* **	*5.07* *	*5.08*	*5.37* **	*5.04*	*4.96*
Soil degradation and erosion due to reliance on agrochemicals	*5.69*	*5.74*	*5.66*	*5.73*	*5.65*	*5.65*	*5.73*	*5.80*	*5.93*	*5.68*	*5.56*	*5.87* **	*5.67*	*5.44* **
Exploitation of natural resources	*5.52*	*5.59*	*5.47*	*5.57*	*5.46*	*5.47*	*5.59*	*5.56*	*5.94* **	*5.53*	*5.12* **	*5.71* **	*5.52*	*5.19* **
Overpopulation	*4.91*	*5.04*	*4.83*	*4.86*	*4.96*	*4.94*	*4.92*	*4.73*	*5.05*	*4.92*	*4.72*	*5.22* **	*4.90*	*4.43* **
Desertification	*5.74*	*5.80*	*5.71*	*5.76*	*5.73*	*5.73*	*5.76*	*5.80*	*5.98*	*5.72*	*5.68*	*5.82*	*5.73*	*5.67*
Depletion of sources of potable water	*5.81*	*5.89*	*5.76*	*5.74*	*5.88*	*5.76*	*5.87*	*5.92*	*5.79*	*5.83*	*5.74*	*5.72*	*5.85*	*5.88*

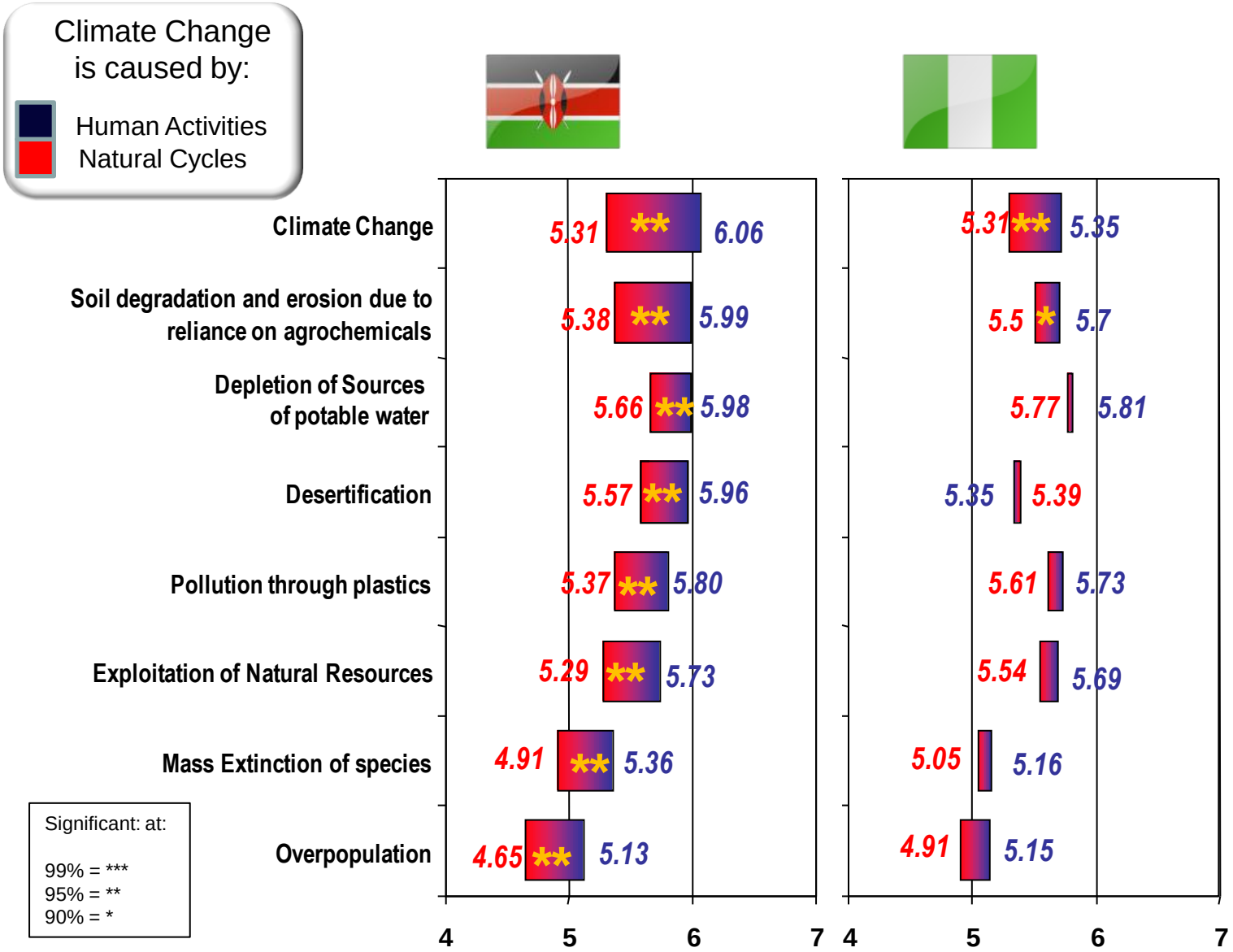
		URBANISATION		GENDER		AGE			SOCIO-ECONOMIC CLASS			EDUCATION		
	Total	Urban	Rural	Male	Female	18-29	30-45	46+	AB	C1C2	DE	Higher	Secondary	None/ Primary
Base	*1009*	*574*	*435*	*503*	*506*	*503*	*433*	*73*	*295*	*574*	*140*	*464*	*417*	*128*
	mean	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*	*mean*
Climate Change	*5.48*	*5.40*	*5.58*	*5.49*	*5.46*	*5.26* **	*5.69* **	*5.69*	*5.35*	*5.55*	*5.43*	*5.66* **	*5.32* **	*5.34*
Pollution through plastics	*5.65*	*5.66*	*5.65*	*5.66*	*5.65*	*5.59*	*5.71*	*5.74*	*5.87* **	*5.58*	*5.49*	*5.87* **	*5.44* **	*5.60*
Mass extinction of species	*5.09*	*5.22* **	*4.91* **	*4.99*	*5.19*	*4.96* *	*5.22* *	*5.17*	*5.21*	*5.05*	*4.97*	*5.36* **	*4.84* **	*4.93*
Soil degradation and erosion due to reliance on agrochemicals	*5.57*	*5.45* **	*5.71* **	*5.54*	*5.60*	*5.46* *	*5.70* *	*5.51*	*5.55*	*5.57*	*5.60*	*5.72* **	*5.40* **	*5.59*
Exploitation of natural resources	*5.59*	*5.44* **	*5.78* **	*5.54*	*5.63*	*5.49* *	*5.69*	*5.71*	*5.62*	*5.54*	*5.71*	*5.75* **	*5.38* **	*5.71*
Overpopulation	*5.02*	*5.22* **	*4.77* **	*4.99*	*5.05*	*4.98*	*5.14*	*4.57* *	*5.37* **	*4.99*	*4.46* **	*5.54* **	*4.63* **	*4.49* **
Desertification	*5.37*	*5.22* **	*5.56* **	*5.26* *	*5.49* *	*5.17* **	*5.56* **	*5.63*	*5.34*	*5.35*	*5.52*	*5.52* **	*5.22* **	*5.36*
Depletion of sources of potable water	*5.81*	*5.66* **	*5.99* **	*5.76*	*5.85*	*5.69* *	*5.93* *	*5.86*	*5.73*	*5.76*	*6.13* **	*5.89*	*5.63* **	*6.11* *

Significant: at:

99% = ***
95% = **
90% = *

Levels of Concern About Environmental Issues

(Climate Change is Man-Made vs. Natural Cycles; *mean scores*)



Kenyans, once they are convinced that climate change is caused by human activities, will not only feel more concerned about climate change, but also about other environmental issues (significant at 95% across the board)

This is not the case among Nigerians: a significant difference (at 95%) emerges only for climate change itself; at 90%, for soil erosion; there are no significant differences across other issues; in one instance, desertification, the mean scores are reversed (albeit not statistically significant)

Summary / Conclusions

Conclusions

"Food comes first, then morality"

- Bert Brecht

- Unemployment, poverty, corruption, and hunger are the most important problems to Kenyans and Nigerians alike
- On the Human Development Index (overleaf; South Africa and USA are included as benchmarks), Kenya and Nigeria rank 142nd and 157th, respectively; income inequality is high; in terms of Sustainable Development Goals, they occupy ranks 119 and 150
- In the face of existential problems, it is surprising that roughly 1 in 10 respondents spontaneously identify climate change as a global, national, and local problem; when prompted, three quarters are concerned about climate change
- Although there is uncertainty on whether climate change is anthropogenic or the result of natural cycles, few would deem it a "hoax"; the effects of climate change are already too tangible: unpredictable rainy seasons and erratic weather patterns, droughts and flash floods, heat waves and failed crops
- In contrast to Kenyans, Nigerians are more likely to prioritise the experience of environmental problems without debating the causes of climate change

Conclusions: Country Statistics

	 KENYA	 NIGERIA	 SOUTH AFRICA	 USA	Sources:
Population	38,610,097 2009 Census	140,431,790 2006 Census	51,770,560 2011 Census	308,745,538 2010 Census	
GDP (US$million)	**74,938**	**375,771**	368,135	20,494,050	https://en.wikipedia.org/wiki/List_of_countries_by_GDP_%28nominal%29
Per capita GDP (US$)	**1,710.5**	**2,028.2**	6,339.6	62,641.00	https://data.worldbank.org/indicator/NY.GDP.PCAP.CD
GINI (Income Inequality)	**0.41**	**0.43**	0.63	41.5	https://data.worldbank.org/indicator/SI.POV.GINI
Human Development Index	**0.59** Rank: 142	**0.532** Rank: 157	0.699 Rank: 113	0.924 Rank: 13	http://hdr.undp.org/en/countries
Sustainable Development Goals Index	56.8 Rank: 119	47.5 Rank: 150	60.8 Rank: 107	73.0 Rank: 35	https://www.sdgindex.org/reports/sdg-index-and-dashboards-2018/
UN World Happiness Scores (2018)	**4.41** Rank: 124	**5.16** Rank: 91	4.72 Rank: 105	6.89 Rank: 18	https://en.wikipedia.org/wiki/World_Happiness_Report
Quality of Life Index	**73.14**	**n/a**	135.75	176.77	https://www.numbeo.com/quality-of-life/rankings_by_country.jsp
Pollution Index	**74.1**	**n/a**	56.2	35.74	https://www.numbeo.com/quality-of-life/rankings_by_country.jsp
CO2 Emissions (metric tonnes per capita)	**0.3**	**0.5**	9.0	16.5	https://en.wikipedia.org/wiki/List_of_countries_by_carbon_dioxide_emissions_per_capita#

Conclusions

"I don't want you to be hopeful, I want you to panic"

- Greta Thunberg

- Respondents and experts agree that climate change is a fact; while Kenyans and Nigerians are worried about immediate issues, such as running out of potable water, soil degradation due to overuse of agrochemicals, and plastics pollution, at times to a greater extent than climate change itself, experts emphasise that climate change cannot be viewed, much less dealt with, in isolation: it is part of a complex cluster of issues (carbon emissions, loss of carbon sinks, insufficient waste management, etc.), which all combine to result in the degradation and destruction of global and local ecosystems
- Although the carbon footprints of the average Kenyan (0.3 tonnes) and Nigerian (0,5 tonnes) are low, these levels are owed to large rural populations who scrape by at the subsistence level; African economic elites, with their fleets of SUVs, diesel generators, subscriptions to frequent flyer programmes (and some with private jets), will not be as inconspicuous
- And Africans do contribute to environmental degradation and climate change through pollution (e.g. Niger Delta, Nairobi and Athi rivers), traffic and transportation, deforestation (e.g. Mau Forest, Congo Basin) and non-regenerative agriculture and livestock management

Conclusions

"We are a plague on Earth"
- David Attenborough

- As the proverbial "cradle of mankind", Africa is the one continent, where humans are not an invasive species; hence, the impact of humans in Africa has not been as severe as in the rest of the world; co-evolution has been cited as the reason why elephants and rhinos hang on in Africa, albeit by a thread, while their woolly cousins have gone extinct in the northern hemisphere
- While the general publics in Kenya and Nigeria are rather forgiving about industrialised nations having unleashed climate change, experts are divided on the issue; while some argue for confidence in technology as problem solvers, others are concerned that traditional systems of land management and food production, which were of adaptive value in Africa, are being purposely ignored and subverted by foreign industrial processes and non-regenerative agricultural practices
- There is a consensus, however, that a selective approach to the adoption of technologies will have to be pursued: learning from the mistakes of others, avoiding the dark side of globalisation, and a reorientation toward African expertise may reconcile the demands of development and climate change mitigation

Conclusions

"Change takes courage"
- Alexandria Ocasio-Cortez

- That a finite world does not provide for infinite resources and economic growth has become a truism; while alternatives to current economic and social systems are being debated (notably Naomi Klein), staunch apologists of neo-liberal capitalism (Steven Pinker) defend unsustainable practices from fracking to non-regenerative agriculture in the name of the Enlightenment, confounding humanism with anthropocentrism
- African experts interviewed in this study position themselves at neither end of the debate; capitalism, in the sense of well regulated private enterprise with focus on sustainability rather than boundless profiteering, will incentivise innovation and foster development
- The example of the African telecoms industry is cited: Africa has skipped several steps in the adoption of technology and has emerged as the global leader in innovative services such as mobile banking, which have remedied financial exclusion
- African nations are being sidelined in the discourse on climate change; they need to be taken seriously as active stakeholders rather than being considered predestined victims

Conclusions

"We are redecorating the deckchairs on the Titanic"

- Richard David Precht

- To Kenyan and Nigerian respondents, the mass extinction of species and overpopulation raise the least concern (but not indifference); topics that directly affect livelihoods are most salient: water scarcity, desertification, soil erosion, and pollution
- Although the view that African populations mainly consist of the urban poor and rural subsistence farmers is blatantly wrong, agricultural activities remain an important strategy for assuring food security
- Capacity building and training of smallholders in regenerative agricultural techniques, permaculture or holistic land management and refocusing on traditional drought-resistant crops to counteract soil erosion and depletion as well as wide-spread contamination with pesticide residues, which are the deleterious effects of industrialised agriculture on a grand scale
- Current government policies still favour commercial farming and monocultures; agro-chemicals, banned in other parts of the world, are actively marketed with impunity in African markets, where regulatory frameworks are slow to emerge
- But public discourse is evolving, consumer awareness rising

Conclusions

"If we don't work together, we will die together"

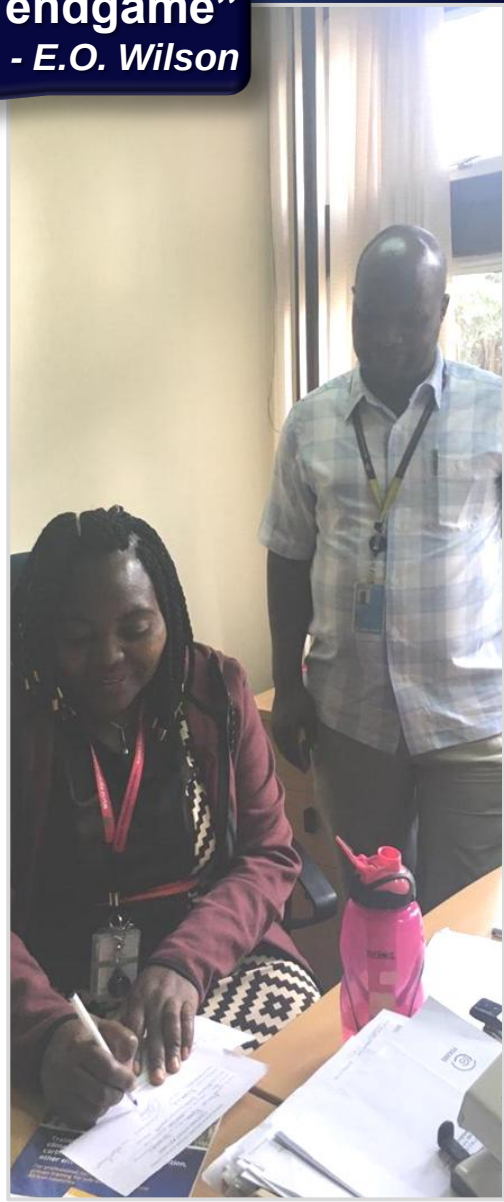
- Roger Hallam

- Renewable energies are seen as an opportunity both for mitigating climate change and development
- Plagued by notoriously erratic grid electricity, Nigerians are more likely to replace generators with inverter/battery or photovoltaic systems than are Kenyans; both Kenyans and Nigerians, however, call for the adoption of energy-efficient appliances as an individual's contribution toward mitigating climate change
- Kenya, however, already generates much of domestic power supply through renewables: hydro, geothermal and wind energy; however, traffic still depends almost exclusively on fossil fuels
- In much the same way that recycling can be turned to profit, trade in carbon credits has the potential to incentivise adoption of renewables through income generation
- Solar solutions for off-grid, poor consumers are placing undue financial burdens on their users; according to the expert, the cost per kWh is 4 to 5 times as high as grid electricity; adapting foreign expertise to meet local needs, therefore, provides opportunities for African engineers

Conclusions

"We are playing a global endgame"
- E.O. Wilson

- Deforestation and desertification proceed at alarming rates; the potential for social conflicts is great: in Kenya and Nigeria, desertification already results in clashes between herders and farmers; and illegal settlement and land clearing in Kenya's Mau Forest, a major water catchment area, is an ongoing issue
- With Wangari Maathai, Kenya had an early advocate for reforestation; not only do forests serve as carbon sinks, they also are crucial in water management, providing renewable resources to rural populations, and safeguard biodiversity
- While forestry experts maintain that the issue is not just planting trees, but growing and maintaining them, they are less concerned with keeping forest systems pristine with local species only, as long as the properties of each species planted are well understood
- Not to be overlooked, however, is the need to concentrate not just on terrestrial reforestation, but also on conserving and restoring coastal mangrove and sea grass ecosystems; not only are they hotspots of biodiversity and carbon sequestration, they mitigate against coastal erosion and floods that increase in frequency as climate change progresses



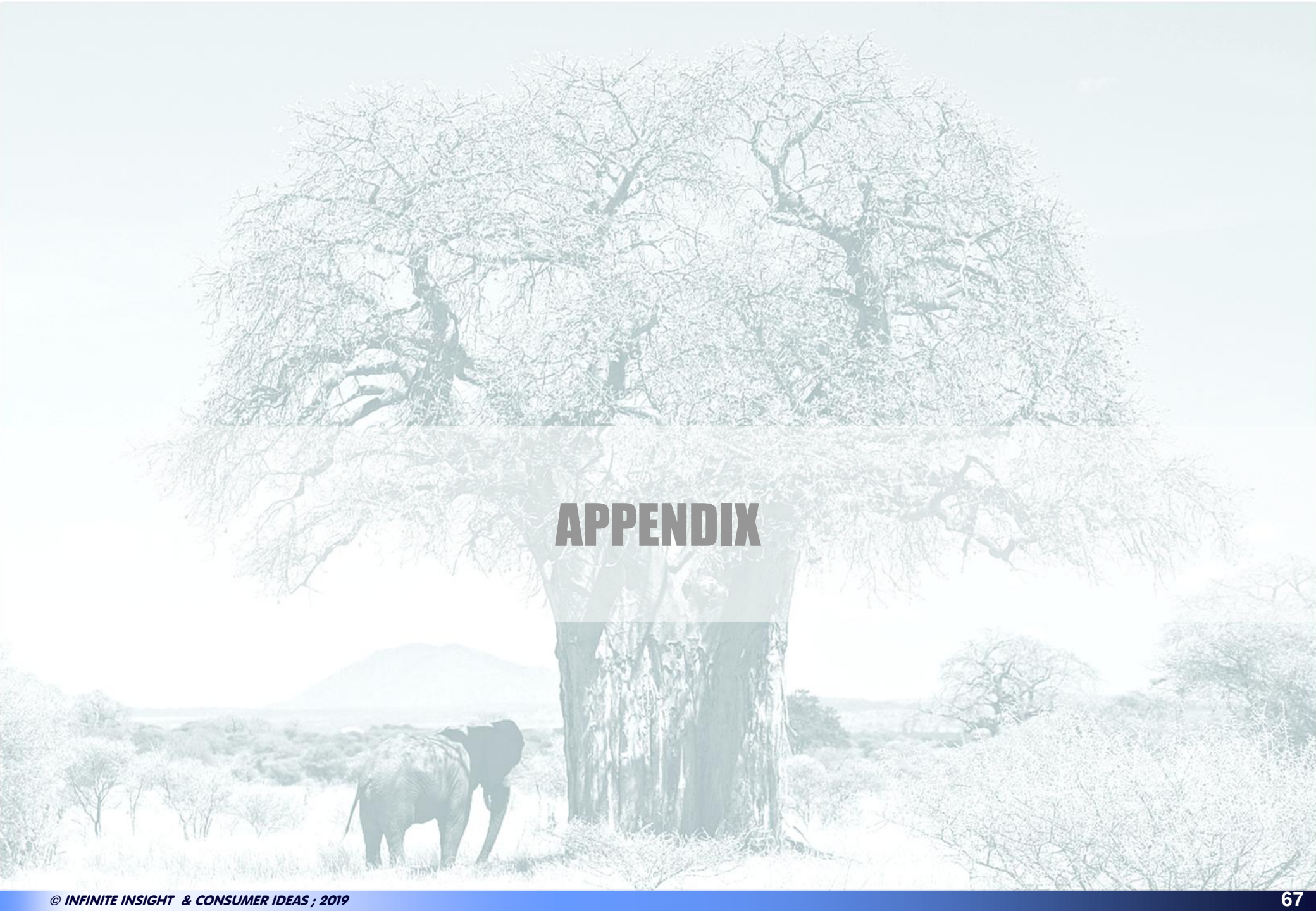
Conclusions

"We have stolen our children's future"
- Jane Goodall

- On September 20th, 2019, climate protests were held in Kenya and Nigeria alongside those held in New York or Stockholm; they did not, however, receive the same coverage as those across industrialised nations
- Although protesters in Nairobi and Lagos held up placards with slogans by *Fridays for Future* and *Extinction Rebellion*, general publics in both countries remain unaware of these grassroots movements (12% of Nigerians and 3% of Kenyans are aware of *Fridays for Future;* however, once known, majorities approve of the school strikes)
- Grassroots movements and activism meet with full support by the experts; but they tend to prefer local activism at the community level to the global media blitz generated by *Fridays for Future*; which African school girl, sitting in front of State House with a banner, would receive the same exposure?
- And global fascination with movements that generate high media ratings diverts attention away from the many community-based activist efforts that have existed all along

"What if it's all a hoax and we've created a better world for nothing?"
- Naomi Klein

- If climate change is anthropogenic, it's mitigation will be anthropocentric
- "Man is the measure of all things" (Protagoras, 490-420 BCE) – in this deeply ingrained spirit, conservation, mitigation, and restoration ultimately aim at serving human needs
- A forest is a carbon sink – yet, it is so much more…
- While the debate about CO_2 emissions, carbon sequestration, ocean acidification and rising sea levels, is of existential importance and may well be decisive for the survival of the human species, the intrinsic value of nature remains secondary
- In 2016, the renowned biologist E.O. Wilson published his "Half Earth" proposal: human activities are to be restricted and confined to half the Earth's surface area; while the remaining half will be off limits for nature to recover and to thrive and for evolution to take it's natural course



APPENDIX

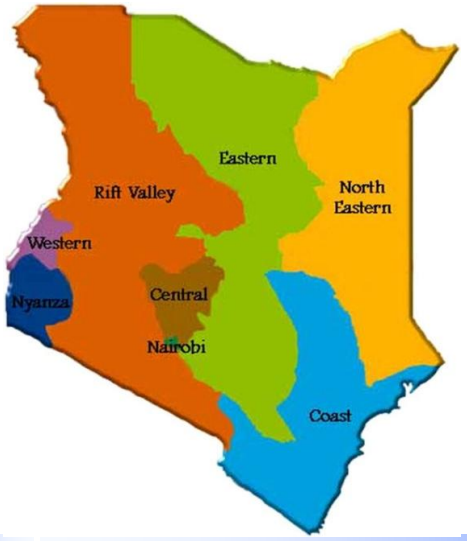
Methodology

- Face-to-Face CAPI Interviews
- The questionnaire was scripted in KoBo, an open source data collection platform
- Multi-stage Random Sampling was implemented:
  - Random selection of Sampling Points; Achievement was limited to 10 interviews in urban points; 20 in rural points)
  - Random selection of *Starting Point* from a central landmark in each Sampling Point, using the *Day's Code*
  - The *Left-Hand Rule* was applied
  - *Sampling Gaps:* 1 in 3 in high density Sampling Points; 1 in 5 in low density Sampling Points
  - Respondents were selected by *Kish Grid*
  - No substitutions were allowed; in case of an ineffective call, interviewers proceeded to the next household
- Quality Control:
  - 15% accompaniment by supervisors
  - 10% back-checks by supervisors
  - Plausibility checks during data processing

Kenya Sample Distribution
(based on 2009 Census)

REGION	Population (Percent)	Relative %	% Urban	% Rural
Nairobi	8.1	8.6	100	0
Central	11.4	12.1	34.8	65.2
Coast	8.6	9.2	44	56
Eastern	14.7	15.6	21.6	78.4
Nyanza	14.1	15.0	25.5	74.5
Rift Valley	25.9	27.6	24.7	75.3
Western	11.2	11.9	19.6	80.4
North Eastern	6			
KENYA	**100**	**100**	**22**	**78**

Total Sample	Urban Sample	Rural Sample
86	86	0
121	42	79
92	40	51
156	34	122
150	38	112
276	68	208
119	23	96
1,000	**323**	**677**



- For security reasons, fieldwork did not cover North Eastern province
- Achieved Sample: 1,070 Kenyans, aged 18 and above
- Fieldwork Period: 17 - 23 August, 2019

Nigeria Sample Distribution
(based on 2006 Census)

Geo-political Zone	% population
South-West	*19.7*
South-South	*15.01*
South-East	*11.7*
North-West	*25.56*
North-Central	*14.43*
North-East	*13.55*
NIGERIA	***100***

Total Sample	Urban Sample	Rural Sample	Selected State
197	185	12	Lagos
150	72	78	Rivers
117	95	22	Enugu
256	95	161	Kano
144	97	48	FCT Abuja
136	22	114	Bauchi
1000	**565**	**435**	

- As the project was entirely self-financed, the cost of covering all 36 States + FCT was prohibitive; hence, the sample was drawn representatively by geo-political zones
- Achieved Sample: 1,009 Nigerians, aged 18 and above
- Fieldwork Period: 26 – 31 August 2019

Response Rates

Unknown household eligibility		
No answer at household	370	392
No adult (18+) at household	198	137
Non-residential(business)/empty home	59	65
Non-contacts		
Unable to access building or household	89	110
Selected respondent not available for interview	47	15
Respondent long-term absence for the fieldwork period	14	18
Not Eligible (does not meet screening criteria)	51	7
Refusals		
Outright refusal at door	198	133
Non feeling informed to answer the questions	41	10
Respondent got angry because of the questions and aborted the interview	21	4
Prefer head of household to be interviewed	33	15
In a hurry/no time	155	39
Other		
Respondent unable to complete interview language available	28	64
Respondents physically /mentally unable to complete the interview	17	3
TOTAL CONTACTS	**2,391**	**2,012**
INTERVIEW SUCCESSFULLY CONDUCTED	**1,070**	**1,009**
RESPONSE RATE	***44.75%***	***50.15%***

Project Management

Margit Cleveland,
Managing Director
Infinite Insight (Kenya)

For more than 30 years, Margit has worked in markets as diverse as Germany, USA and Sub-Saharan Africa. Her prior work experience includes Infratest-Burke (now TNS), Germany; Mar's Surveys, USA; Institut für Jugendforschung, Germany; and RMS International, Nigeria (now TNSrms). From 2006 to 2010, Margit ran a research consultancy, African Research Service Bureau.

Over the years, Margit has worked for blue chip clients in the FMCG and telecoms industries (BAT, Coca Cola, Diageo, Heineken, Unilever, Cadbury, MTN, Orange, etc.), international and local media (BBC, VOA, CFI, DW, etc.) as well as government agencies and NGOs (US State Department, USAID, UNICEF, AED, PSI, etc.).

In 2003, Margit won the "Best Conference Paper" Award at the Gallup International Conference, Estoril; and she contributed to the GIA "Voice of the People" book, 2006).

Margit is a member of ESOMAR, MSRA, PAMRO (founder member) and WAPOR. From January 2013 to December 2016, Margit was the ESOMAR representative for Kenya.

Althea McCourt
Director
Infinite Insight (Kenya)

Prior to joining Infinite Insight, Althea was the Operations Director at Research Solutions. She has over 20 years experience in management consultancy, specialising in strategic development and implementation, HR, debt management, operations and systems & process guidance. Her work experience has been within a range of service industries, with the last 10 years being in the market research sector

Prior to consultancy, she worked in Kenya's capital markets for over 10 years, having worked in various senior capacities in Dyer and Blair Limited (now Dyer and Blair Investment Bank). She was a resource person for the World Bank during the development of the regional stock markets. First employed as the company's Securities Analyst, Althea was finally the Company's General Manager/ Executive Director.

Althea holds an MBA – IT (University of Leicester), and a BA (Hons) in Business Studies (University of North London). She is a Member of Marketing and Social Research Association (MSRA), SAMRA, ESOMAR, and Kenya Institute of Management (KIM).

In 2017, Althea was the chair person of MSRA.

Yemi Oniyitan
Managing Director
Consumer Ideas (Nigeria)

Yemi is a seasoned qualitative researcher with more than 20 years of experience in the industry, straddling both agency and client side as well as local and international markets. He has vast experience in FMCG, services, social and media studies. A graduate of political science (BSc.), Yemi is well tuned-in to the socio-cultural and political interplay in consumer behaviour.

He previously held senior positions at RMS Nigeria, where he lead a team of qualitative researchers on a range of multinational accounts, and as Research Manager- Marketing & Development at Cache UK, he helped to drive both qualitative and quantitative based projects in developing both content and business strategy. Most recently, Yemi was a consultant at Euromonitor International.

Project Team

Naftali Waburi
Research Director

Naftali' started in market research in 2002..

To date Naftali is an experienced all round research professional covering both qualitative and quantitative Specifically Naftali has handled FMCG, Financial (both banking as well as Insurance), Manufacturing, Service and telecommunication. Geographically, Naftali has handled projects in almost all the markets within the Eastern Africa Region, from Egypt to Botswana, Angola to Madagascar, Eritrea to Somaliland.

Naftali holds a MBA Strategic Management and an BBA in Marketing

Margaret Juma,
DP Manager

Margaret has been in charge of Infinite Insight's data processing department since 2012. During this time, she has excelled in handling projects across Africa; including very large sample surveys (up to n=20,000)

Titus Kiprono
Data Analyst

Titus joined Infinite Insight in April, 2019. He holds a Bachelor Degree in Science (Economics & Statistics) from Egerton University. Titus is in charge of monitoring field progress, quality control and statistical analysis.

Toheeb Adekunle,
Data Processing Executive

Toheeb holds a B.Sc (First Class Hons) in Statistics from the University of Ilorin, Nigeria.

He has 2 years of experience in data processing. Toheeb is currently engaged in data. He is also in charge of data entry supervision, manual questionnaires' checks to ensure internal data consistency, monitoring the inflow of data from the field team and updating them on progress and any guidance with regard to data under collection.

Chuka Enendu
Research Executive

Chuka is an ambitious individual with focus and dedication, which has seen him work successfully in the financial sector with Eczellon Capital as a Researcher prior to joining us. Chuka holds a B.Sc (Hons) in Economics & Statistics from the University of Benin.

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