



RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



The SmartAG Partner

CCAFS East Africa Quarterly Newsletter

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“What is a climate smart village? It’s about new technologies, it’s about climate information services, it’s about local knowledge and institutions and it is about village development plans.”
Bruce Campbell
CCAFS Program Director

Climate Smart Agriculture

Message From The Program Leader

Dear Friends,

I am pleased to share with you the fourth issue of the SmartAg Partner – CCAFS East Africa quarterly newsletter. We bring you news on policy, science and from the field (CCAFS Climate Smart Villages) on climate change and food security matters from East Africa.

In the run up the World Economic Forum, CNBC Africa sought our views regarding food security in Africa. Read more about what Africa needs to move forward in this area. Under the same section, find out how African countries are moving forward with regard to transforming agriculture in a changing climate despite slow progress at the UNFCCC driven talks.

Climate Analogues and Scenarios enable farmers and other stakeholders to have a glimpse of past, present and future climates. Under our science updates section, find out why this approach is useful for designing appropriate adaptation strategies in agriculture. We also introduce you to the CCAFS Big Facts site that has been re-launched. This is a useful resource for latest facts and data on Agriculture, Climate Change and Food Security. From a recent study, read how smallholder agricultural systems in Kenyan highlands might intensify and or diversify their production in the future under a range of different scenarios. Our researchers linked various socio – economic scenarios with regional and household models to identify these changes.

In the last section, field updates, read about climate information services for farmers in Nyando, Western Kenya and how this impacts decision making. Elsewhere, in Lushoto, Tanzania, find out how adoption of improved bean varieties and better agronomic practices, led to a threefold increase in bean yields compared to local varieties.

Dr. James Kinyangi



1

Investment essential to boost agriculture growth

In preparation for the World Economic Forum (WEF) annual meeting held from 22 – 25 January 2014 in Davos, Switzerland, CNBC Africa spoke to CCAFS Regional Programme Leader James Kinyangi on climate change and food security in Africa and what is needed to move forward.

By Nicole Cassandra Naidoo

Africa's agriculture sector needs significant investment in order to see beneficial growth and development.

James Kinyangi, the Climate Change, Agriculture and Food Security East Africa programme leader, insisted that African countries have to commit to investing in agriculture if they are to see it grow.

"The countries themselves put together a framework through the Maputo Declaration – the Comprehensive Africa Agriculture Development Programme – where it notes that African governments must rethink investment in agriculture. One of the resolutions agreed [to] at the declaration was that 10 per cent or more of the National Budget of these countries must be invested in agriculture to ensure the growth of the agriculture sector, in order to reduce food insecurity and poverty," he told CNBCafrica.com.

"We need to go back to those terms and make sure we scale up investment in agriculture on the basis of understanding that agriculture needs to be the main engine that drives growth. In addition to that, we need to make sure that as we invest, we are also providing for insurance and safety net mechanisms that protect agricultural innovations."

Addressing the issue of food security

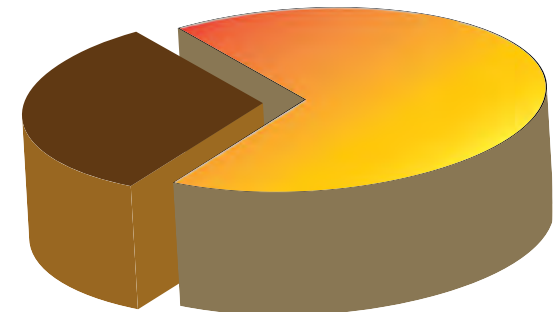
The World Economic Forum's (WEF) annual meeting was held in Davos, Switzerland from January 22 to January 25, 2014. A panel

discussion held on 23rd focused on climate change and its effect on food security on a global scale.

According to the World Bank, in Africa specifically, agriculture employs around 65 per cent of the continent's labor force and accounts for at least 32 per cent of Gross Domestic Product (GDP).

"Agriculture in East Africa accounts for almost half of the GDP of most countries, with the exception of Kenya where it accounts for a little less than 30 per cent. These countries are dominated by rain-fed and small-holder agriculture so the impacts of climate change have been negative on food production in general," said Kinyangi.

32%
of GDP in
Africa is from
Agriculture



“We had an agreement that enables countries to come up with, what they call, National Adaptation Plans as a means of identifying medium and long-term adaptation needs, and also developing and implementing strategies and programmes to address those needs.”

Investing in agriculture

It has also been said that development of agriculture is crucial to Africa’s growth and to reducing poverty.

“A number of countries in East Africa, Kenya specifically, have moved ahead to develop a plan. Currently a lot of these mechanisms for supporting the implementation of the agriculture components are taking place under, the National Climate Change Action Plan,” Kinyangi explained.

“This plan provides for specific investments in water, to make sure that small-holder farmers are cushioned against rainfall variability. They are able to harvest, store and use water for irrigation. There are also other investments in drought tolerant varieties of crops. There is the aspect of diversification. What is lacking now is for governments to step up and provide for the investments that are needed in order to implement their plans.”

African governments should

put **10%** or more of their National Budget into Agriculture

Africa’s population growth

Africa, whose population stood at 1.01 billion in 2009, is expected to grow to two billion by 2050 – another topic that was examined, at the WEF annual meeting.

“Generally, in terms of food security, there’s a very big challenge in sub-Saharan Africa. It’s because of rapid population growth, which is amongst the highest in the world. Poor governance in some of the countries, meaning that conditions for food availability, distribution and production continues to deteriorate. We now know that climate change and those impacts have hit Africa hardest,” Kinyangi indicated.

“We are also very vulnerable in Africa because the choice of our staples is narrow – mostly maize. We need to diversify into rice, potatoes, and fisheries. We need to make sure we’re able to diversify our production methods in terms of developing irrigation and increasing food production in order to cope with the demand for feeding a growing population.”



The continent’s reliance on agriculture

Kinyangi added that, in Africa, we are still very much reliant on small-holder farmers providing skills, in terms of production, processing and transport, and that is unlikely to change.

“Out of about 800 million hungry people in the world, 200 million are in sub-Saharan Africa. This means that sub-Saharan Africa contains the second highest number of undernourished people after Southern Asia,” he said.

“Africa is really unique because if you look at many other countries in the world, especially the developed countries, agriculture forms a very small fraction of their GDP and a small proportion of their population is engaged in agriculture. A lot of African labor force still engages in agriculture. We need to transition and move towards providing for a bigger role for the private sector to bring in investments, to make sure that they have a role in, not just food production but also, storage, distribution and other processing aspects of the value chain.”

Story reproduced with permission from CNBC Africa .

To read original story: <http://bit.ly/1kX51X7>

2

Building climate resilience in the African agriculture sector

A regional workshop held in Arusha Tanzania in February 2014 charted the way forward with regard to Africa's agriculture under a changing climate. Delegates discussed Africa's participation in the upcoming UN Secretary General's Climate Summit to be held in September 2014.

By Mary Nyasimi, Dennis Opiyo and Vivian Atakos

Delegates from 21 countries from Northern, Eastern and Southern Africa recently took part in a regional workshop on African Agriculture in a Changing Climate: Enhancing the up-take of Climate Smart Agriculture held in Arusha, Tanzania.

The aim was to provide an opportunity for consolidating and sharing of experiences that could inform emerging Climate Smart Agriculture (CSA) global efforts and the on-going United Nations Framework Convention on Climate Change (UNFCCC) negotiations.

Coorganised by the Common Market for Eastern and Southern Africa (COMESA), African Climate Policy Centre (ACPC), East African Community (EAC) and the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), the meeting took place from 12 to 14 February 2014 in Arusha, Tanzania.

Emerging global efforts on climate-smart agriculture

Although a well performing agricultural sector is fundamental for Africa's overall economic growth, as well as for addressing hunger, poverty and inequality, the changing climate poses a challenge.

Research is now pointing towards CSA as the solution to enhancing the capacities of agricultural and food systems to cope with current climate variability in order to improve productivity and resilience. CSA seeks to integrate climate change into the planning and implementation of sustainable agricultural strategies in Africa.

To take forward work in CSA, a series of conferences on Agriculture, Food Security and Climate Change have been held to mobilize action on policies, practices and financing for food security, adaptation and mitigation.

In December 2013, the 3rd Global Conference on Agriculture, Food and Nutrition Security and Climate Change was held in Johannesburg - South Africa and included high level discussions on a Climate-Smart Agriculture Alliance. This will be launched in September 2014 at the UN Secretary-General's Climate Summit in New York, USA.

CSA is a relatively new concept. The integration of climate change into the work of agriculture ministries in Africa is very slow. Subsequently, policies and action plans do not sufficiently incorporate climate change. This inhibits the kind of action taking place on the ground as well as participation in climate change institutional mechanisms within countries. These countries therefore cannot access climate financing for CSA" said Wendy Mann, Policy Adviser at FAO who attended the workshop.

In Arusha, delegates acknowledged that with the approaching global CSA launch, Africa needs to prepare to argue for CSA practices not only as an adaptation, mitigation and risk management strategy, but also to discuss how various governments can tap into various climate funds. The agriculture sector in most African countries suffers from low budgetary allocations.

"If African governments are allocating less than 10% of their national budget to agriculture, we need to understand the logic in the low budgetary allocation as these are agriculture driven economies.

What Africa needs is bold, integrative and sound financial investments to be able to meet its food security, increased productivity and build resilience in a changing climate" said James Kinyangi, Program Leader CCAFS East Africa.

By catalyzing action on climate change prior to the UNFCCC Climate Change Conference in 2015, the UN Secretary-General intends to build a solid foundation on which to anchor successful negotiations and sustained progress on the road to reducing emissions and strengthening adaptation strategies.

Agriculture in the UNFCCC process

The Arusha meeting also aimed to consider COP19 outcomes and explore ways of consolidating the African common position on agriculture in the on-going UNFCCC, Subsidiary Body for Scientific and Technological Advice (SBSTA) and Ad hoc Working Group on the Durban Platform for Enhanced Action (ADP) negotiations and at the Green Climate Fund (GCF) Board.

"Africa has not been politically smart in the UNFCCC negotiations and has so far not succeeded in reaching an agreement on Agriculture" noted Richard Muyungi, a former SBSTA chair.

Currently, the African Group of Negotiators (AGN) efforts are hampered by lack of sufficient scientific data and specific case studies on best practices on African Agriculture. This is according to Chebet Maikut, a climate change advisor in Uganda and member of the AGN. CCAFS is therefore leading initiatives aimed at developing technical papers on Agriculture and Climate Change in Africa: Vulnerabilities, Impact and Adaptation.

These papers will greatly inform the African Group of Negotiators. Some of the issues in these papers include: Impact and adaptation strategies for a climate resilient agriculture, opportunities for mitigation in agriculture and synergies with adaptation and enabling framework to accelerate climate change adaptation. A separate chapter deals with potential successful adaptation case studies for a climate resilient agriculture.



The three day workshop came to an end with recommendations being made in three key areas. First is the political and enabling environment. Africa must ensure there is a 2015 agreement on Agriculture in the UNFCCC process.

Regional bodies such as AMCEN, AUC and AGN can help by strengthening their coordination, mobilization and harmonization role among the high level decision making institutions for a common position on Agriculture and Climate Change. Knowledge management is the second key area. It was agreed that a gender sensitive programme to enhance CSA knowledge management and sharing among different actors be developed.

Additionally, regional and national CSA centers of excellence need to be established. The third area was on up scaling CSA. This entails the development of capacity, evidence, policy alignment, incentives and robust investment proposals to support investment and implementation in a CAADP Climate Investment Framework. Also national and regional incentives and platforms for up-scaling private sector engagement and investment need to be developed.



Another important outcome of the workshop was the establishment of an “Interim Ad hoc Working Group” on CSA chaired by the United Republic of Tanzania to drive Africa’s engagement in up scaling CSA. Additionally, it will lead Africa’s contribution in the upcoming global CSA alliance.

The meeting today shows that climate change is real. We must fast track decisions in Africa on what are the options and to settle for some of them and get all stakeholders on board” noted Odd Erik Arnesen, Senior Policy Adviser with the Norwegian Agency for Development Cooperation (NORAD).

Watch Workshop interviews here: <http://bit.ly/P5sDdG>
<http://bit.ly/P5t33I>

Read various reports that appeared in the media:
<http://bit.ly/1dQf08o>, <http://bit.ly/1j8g1xL>

Mary Nyasimi is a gender and policy specialist while Vivian Atakos is a communications specialist. They both work for CCAFS. Dennis Opondo is a Lecturer in the Department of Sociology and Anthropology at Maseno University - Kenya.

3

Countries follow Kenya’s example: 2013 to 2017 Climate Change Action Plan

In Sub Saharan Africa, Kenya has made a lot of progress regarding its National Climate Change Action Plan launched in early 2013. The country received support from a number of partners, CCAFS included.

Read more about legislative activity on climate change as reported by the new edition of the GLOBE Climate Legislation: <http://on-msn.com/1fPRxJK>

NATIONAL NEWS AFRICA NEWS WORLD NEWS BIZARRE NEWS FEATURES

Countries follow Kenya's example: 2013 to 2017 Climate Change Action Plan



image by (AP Photo/Ebrahim Noroozi, File)

Read More about Kenya’s action plan

Kenya holds first national adaptation planning meeting for agriculture:
<http://bit.ly/1froxmT>

Climate action in Kenya: New national plan launched:
<http://bit.ly/1dTsb8s>

4

Climate scenarios and analogues: A glimpse into past, present and future climates

CCAFS East Africa held a successful workshop last year linked to the ongoing work on climate scenarios and analogues. This approach, comparing one area's climate with another area's projected climate scenario, can help design adaptation strategies in agriculture.

By Phillip Kimeli and Thomas Mawora

It all began with a brief round of introduction. In the room were a rich mix of participants, 23 in number, drawn from universities, research institutions, Non-Governmental Organizations (NGOs) and the Ministry of agriculture in Kenya. The trainers were Edward Jones and David Arango from the International Center for Tropical Agriculture (CIAT) Colombia.

Soon after, we got to the real business of the day - carrying out the workshop on climate scenarios and analogues for designing adaptation strategies in agriculture. This workshop was organized by the CGIAR Research Program on Climate Change, Agriculture and Food Security Program (CCAFS), East Africa in November of last year.

"The Climate Analogues approach identifies areas where the climate today is similar (analogous) to a future projected climate for a reference site. The analogue sites can be backward, forward or with no direction" said Edward Jones. One can answer the questions:

- Where can I find a site whose present climate is similar to the projected future climate of my reference site? (backward)
- Where can I find a site whose projected future climate will be similar to the present climate of my reference site? (forward)
- Where can I find a site whose present climate is similar to the present climate of my reference site? Or where can I find a site whose future climate may be similar to the future climate of my reference site? (no direction)

In this training, participants learnt how to find the climate analogue sites by using an online platform and also offline through the Analogues R package. To use the online tool, one does not require skills in the R package. However, the datasets can be downloaded and used offline. As opposed to the online platform, the R package provides an added advantage of doing a finer search by including soil information when selecting the analogue sites.

Already climate Analogues approach has been applied in the Farms of the Future project currently ongoing in Lushoto, Tanzania. The backward analogues site was found for Yamba. Farmers from Yamba were then taken on a "learning journey" to visit sites which are climate analogues of their home.

This enabled them to visualize adaptation strategies that may be useful to them in the future. This project also offers an opportunity on the feasibility of germplasm exchanges from analogue sites to the reference site as an approach for gradually adapting agricultural systems to climate change.

"I plan to share what I have learnt with my colleagues working on delivering climate information services to farmers" said Thomas Mawora, a researcher at Maseno University.

"We want our farmers to have a glimpse of sites that have the same climate as theirs and to learn from the ongoing adaptation and mitigation activities at the analogue site", continued Thomas.

Climate Analogues Tool

Future climate (average of GCMs)
Current climate
Past Climate

Multiple runs at increasingly refined scales:
Feasibility - preliminary - multi-variable



Variables of interest (temp, ppt)
Emissions scenarios
Thresholds
General Circulation Models (GCM's)
Analysis direction (future, current, past)
Reference site geo-coordinates

He further noted that the information generated through these tools can greatly inform decision makers in the newly devolved administrative units in Kenya on adaptation projects.

"Since I have learnt that my tomorrow's climate exist somewhere in the world today. Searching where it exists and studying the various anthropogenic activities there can enable us to come up with ideas and pathways to future adaptation", said Michael Okumu from the Ministry of Agriculture.

This workshop was a follow-up to the regional training workshop held in August, 2012 in Nairobi where country teams developed action plans over the next one year. For Kenya, training of selected professionals from agricultural research organizations, line ministries and policy institutions on the applications of the climate scenarios and analogue tool were identified as priority necessitating this workshop.

Way forward

As a way forward, the participants agreed to conduct famer exchange visits for selected study sites to enhance knowledge exchange and adaptation learning among farming communities in Kenya. This will come in handy as the partners are equipped with the necessary knowledge in identifying the analogue sites.



Learn More: East Africa moves towards implementation plans with the Climate Analogues tool: <http://bit.ly/1gSfHUr>

Learn more: One farmer's future is another farmer's present: Farms of the Future hits Tanzania <http://bit.ly/1hwLUvu>

Phillip Kimeli is a Research Assistant with CCAFS East Africa. Thomas Mawora is a Tutorial Fellow at Maseno University, Kenya.

5

Big Facts: bringing together science, art and pie charts

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) has re-launched its Big Facts site. Now you can get the latest facts and data on climate change, agriculture and food security issues, download infographs and compare regional impacts.

By Lucy Holt and Simon Bager

The communication of science is wrought with challenges.

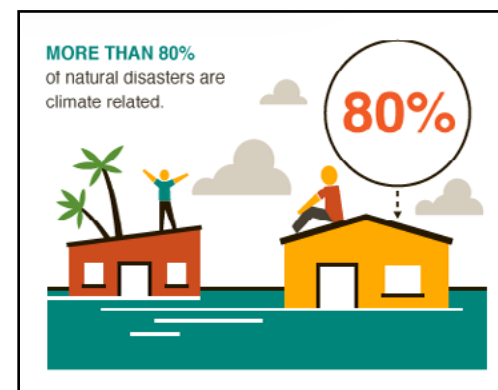
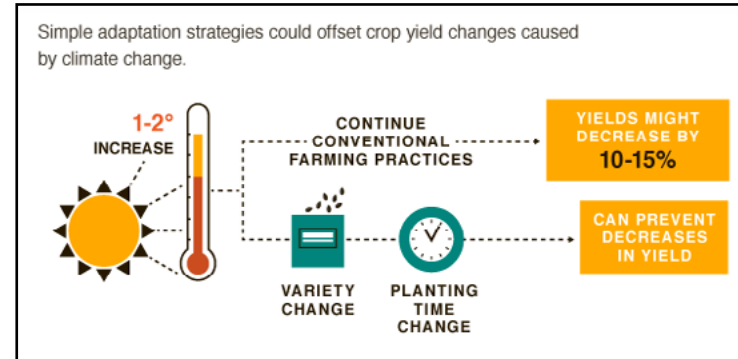
How do you simplify complex science so that it is understandable by many, rather than a few, without reducing it to meaningless nothings? How do you communicate uncertainty within science without undermining the impact of that science? How do you communicate consistently when science is constantly progressing and open to re-evaluation?

When bringing three areas of science together, as is the case for the nexus of science where climate change, agriculture, and food security meet, such issues only amplify.

Meanwhile, at the other receiving end of our communications, people are struggling to sort between conflicting claims from unknown

‘Feedback from our partners showed that there was a gap - people were looking for a site that brought together agriculture and climate, adaptation and mitigation, biophysical and socioeconomic data. As a science organization, our goal was to provide rigorous and impartial information that users can trust’ said Sonja Vermeulen, Head of Research at CCAFS, who led the project with research assistance from us, Simon Bager and Lucy Holt at the University of Copenhagen.

sources, and to locate the most up-to-date and reliable resources in the sea of journal papers, reports, advocacy materials and other sources that are available.



Filling the knowledge gap

Big Facts is a project, led by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) that aims to put some of these issues to bed, at least for the time being.

‘We put a lot of emphasis on fact checking and ensuring that we were not misrepresenting the science or over-claiming the certainty in the statements given. In some cases this reduced us to quite a generic statement on a topic but that is a fair picture of the current science in some complex areas’ said Vermeulen.

‘Feedback from our partners showed that there was a gap - people were looking for a site that brought together agriculture and climate, adaptation and mitigation, biophysical and socioeconomic data. As a science organization, our goal was to provide rigorous and impartial information that users can trust’ said Sonja Vermeulen, Head of Research at CCAFS, who led the project with research assistance from us, Simon Bager and Lucy Holt at the University of Copenhagen.

For a topic this important, there is obviously a lot of information available in reports, journals, and data sets. During the course of the project the researchers plowed through as much of the research available as possible to find the most scientifically accurate, up-to-date and useful pieces of information on how climate change will impact on agriculture and food security and vice versa. Naturally, it is impossible to capture every detail, and to deliver a useful and user-friendly product, some findings had to be cut. However, we have strived to capture the essence of the issues and challenges in all of the areas; from food security to adaptation to policy finance.

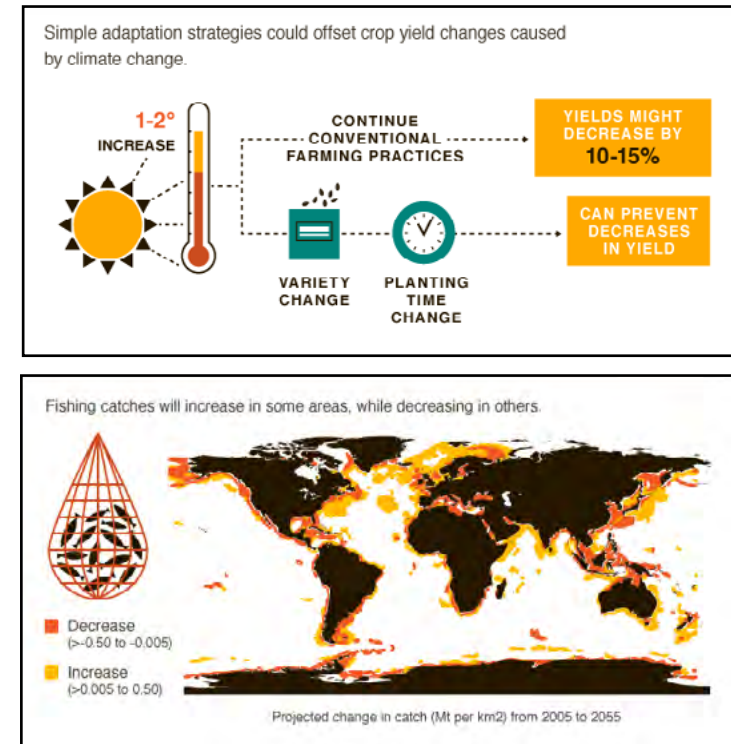
While the website inevitably simplifies facts to make them more digestible for a broader audience while retaining their scientific validity, it also provides links to more detailed information and the original scientific sources. The aim is to encourage readers to dig deeper and explore the science for themselves, while also sharing the science through simplified infographics and facts sheets.

Big Fact 2014: bigger and better

The Big Facts project was first launched in 2012, but is being re-launched today after a nine-month period of research and development. The new site covers a much wider range of topics, and provides region-specific as well as global level information. Dynamic charts allow users to compare indicators such as population growth, emissions, undernourishment, or food waste, either by region or over time.

Art meets science

The new Big Facts website has been developed in partnership with Column Five, a leading infographic development agency based in California. By working with artists outside of the scientific sphere, we hoped to communicate these important facts in different and engaging ways - while still remaining true to the science.



The new Big Facts website offers access to 114 infographics which we encourage scientists, program and policy makers, journalists, students - anyone and everyone - to download and insert into their presentations and reports or share through their social media networks. It also offers 33 fact sheets, summarizing the Big Facts related to some of the most pertinent issues, which are available to download.

A work in progress

Like the science that underpins it, the Big Facts website is a work-in-progress. It will undergo a review after the release of the next IPCC reports later this year, and will be updated as new reports are released. We also invite all users to send us their feedback, to let us know what you think and how Big Facts could be more useful for you.

This allows audiences of different knowledge levels to engage - whether you are a businessman doing market research, a high school student doing a class project, or a scientist doing an academic review - the Big Facts website aims to deliver the level of detail you are seeking, in a format that is relevant to you.

Access the #Big Facts here: <http://bit.ly/1gYWjWt>

Lucy Holt and Simon Bager both work as Assistants at the CCAFS Coordinating Unit

6

What livestock eat determines how productive, and efficient, they are - PNAS study

A new study published in the journal Proceedings of the National Academy of Sciences finds that even within existing livestock production systems, autonomous transitions from extensive to more productive systems would decrease GHG emissions and improve food availability.

From ILRI Clippings

A recent International Livestock Research Institute (ILRI) study titled **Biomass Use, Production, Feed efficiencies and Greenhouse Gas Emissions from Global Livestock Systems** established that the high emissions from livestock were linked to poor livestock management on the continent.

'An Notenbaert, one of the study's authors, notes that the factors contributing to this level of emissions are the same ones impeding livestock production and slowing down development in Africa.

"Such studies provide opportunities for countries to identify gaps in their livestock production systems and address those challenges to foster economic growth," states Dr Notenbaert [a livestock expert who did this work at ILRI and has since moved to the International Center for Tropical Agriculture].

'The study shows that most livestock in the developed world consume feeds of higher quality in form of concentrates and grains, compared to developing nations where livestock rely mainly on low quality natural pastures and crop residues.

As such, a cow in North America or Europe likely consumes about 75 to 300 kilogrammes of dry feed to produce a kilogramme of meat protein. But in sub-Saharan Africa, a cow might require between 500 and 2,000 kilogrammes of feed to produce the same amount of meat protein.

'Dr Notenbaert notes that the quality of feeds consumed by animals determine to a large extent their productivity and amount of GHG emissions they will release into the atmosphere.

'Thus cattle grazing on low quality pastures in arid lands of sub-Saharan Africa can release the equivalent of 1,000 kilogrammes of carbon dioxide for every kilogramme of protein that they produce whereas the emission intensity in Europe and the US is around 10 kilogrammes of carbon dioxide for every kilogramme of protein produced.

"This, therefore, shows that low quality feeds are also inefficient in production. So farmers will spend so much money on food and still get losses as the cow will be eating more but producing less meat or milk," says Dr Josephine Kirui, a feeds expert at the International World Agroforestry Centre.

Animals take much longer to digest low quality feeds and as a result release more methane and carbon dioxide gas that cause global warming.

'In Kenya, livestock contributes 10 per cent of the total gross domestic product.

Contribution of livestock, Kenya

10%
of the Gross Domestic Product (GDP)

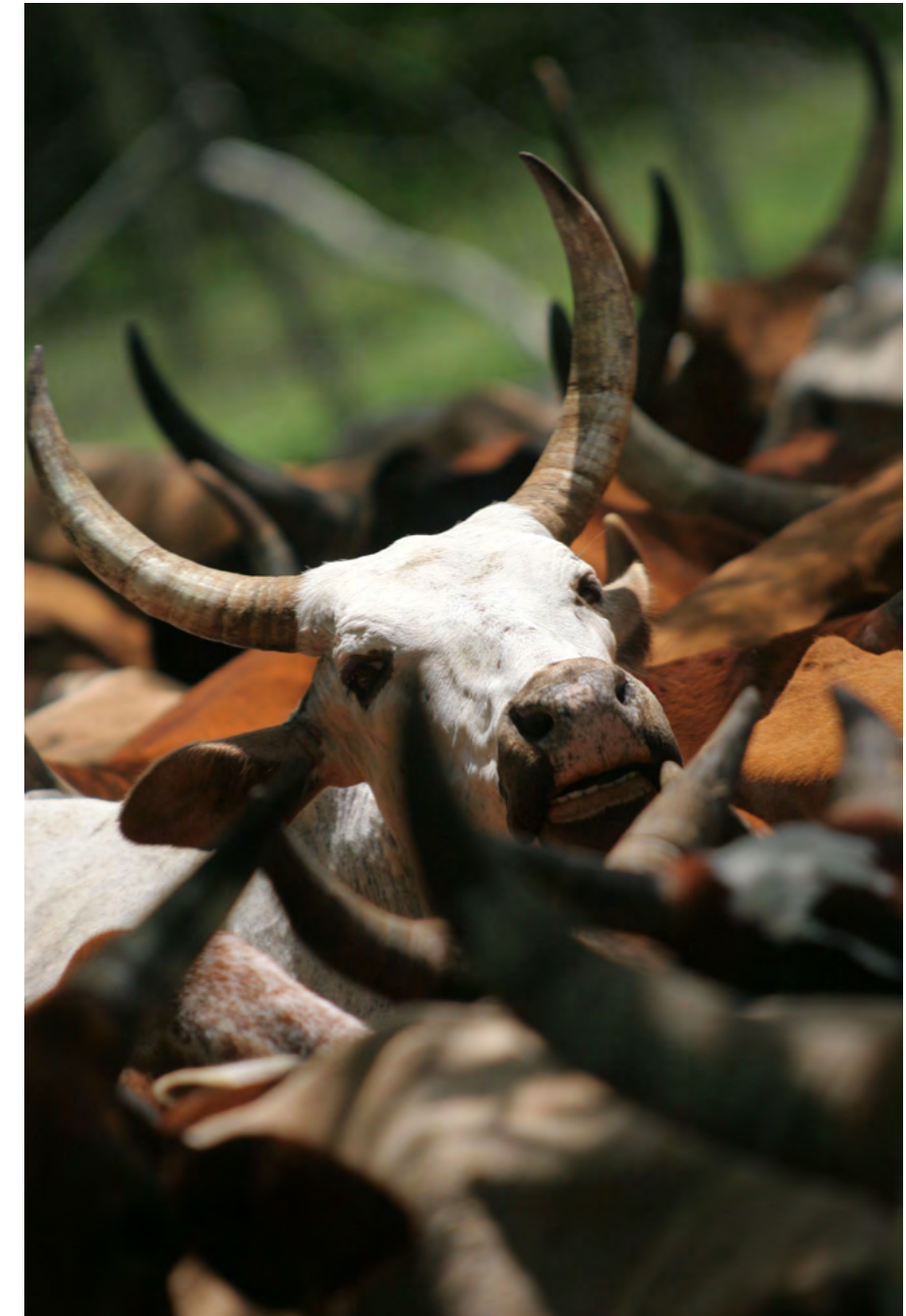
'Moreover, in the arid and semi-arid lands occupying more than 70 per cent of the country, the livestock sector accounts for about 90 per cent of family incomes, according to the Food and Agriculture Organisation.

But Kenya's population is still growing and if livestock yields remain low, it will compromise government's ability to adequately feed citizens and guarantee food security in the country, says Dr Notenbaert.

Read the whole article by Sarah Ooko in Business Daily (Kenya): <http://bit.ly/1pbiglH>

Access the paper: *Climate change mitigation through livestock system transitions*
<http://bit.ly/1hwNyOi>

Read the ILRI News Blog story on this study:
<http://bit.ly/1I71Add>





Celebrating Women Farmers



Responsibilities charged to women

Women often have responsibilities, such as fetching water, collecting fuelwood, and looking after children that make them more vulnerable than men to the impacts of climate change (Wright and Chandani 2014).

Women input in agriculture

More and more agricultural work is being done by women as men move to non-farm jobs. In all parts of the world except Europe, the proportion of women in the total agricultural work force has risen over the past four decades (Doss 2011 p. 6).



Food Security

If women had the same access to productive resources as men, they could increase yields on their farms by 20–30%. This could raise total agricultural output in developing countries by 2.5–4%, which could in turn reduce the number of hungry people in the world by 12–17% (FAO 2011 p. 5).



Vulnerability to Climate Change

Women tend to be more at risk from climate change than are men because they represent the majority of the world's poor. This means they often lack the means to cope with the harmful effects of climate change. Women also tend to be more dependent on livelihoods and natural resources that are more sensitive to climatic changes than are men (UNDP, GGCA 2012 pp. 2–3).

Get these and more facts on women and agriculture at the CCAFS Big Facts website: <http://bit.ly/1gYWjWt>
For full citations visit: <http://bit.ly/Mbi9rw>



Women farmers key to food security in Africa

On March 8, 2014 was the International Women's Day. Dr. Mary Nyasimi, a Gender and Policy Specialist, shares some insights on progress made and the way forward.

By Mary Nyasimi

The theme for 2014 International Women's Day (IWD) was **Inspiring Change**. Since its inception in 1910, the event has recognized the economic, political and social achievements of women. These achievements are however quite limited, especially in the agriculture sector, due to a rapidly changing climate. The most affected is the rural woman who provides the largest labor force in agriculture, the greatest Gross Domestic Product (GDP) contributor, for most African countries.

Women make up a large number of the rural poor in East Africa and are exclusively dependent on local natural resources for their livelihood. They are therefore extremely vulnerable to and negatively affected by climate related risks such as droughts, unpredicted rainfall and floods.

Gender mainstreaming by African governments

East Africa governments are already mainstreaming gender into their climate change efforts at the national level. These countries have developed and are in the process of implementing National Adaptation Plans of Actions (NAPAs) in various sectors, including agriculture. Established in the Cancun Adaptation Framework by the United Nations Framework Convention on Climate Change (UNFCCC), the National Adaptation Planning (NAP) process is supposed to help facilitate effective medium and long-term adaptation planning and implementation in developing countries, and in particular Least Developed Countries (LDCs).

The East Africa countries (Uganda, Tanzania and Ethiopia) have developed their NAPAs and submitted to UNFCCC. The three countries have identified adaptation priority actions that can be funded from the Least Developed Country Fund. Kenya is not listed as an LDC and is therefore not required to submit a NAPA. Therefore, Kenya has incorporated climate change adaptation strategies in its National Climate Change Response Strategy (NCCRS) with an accompanying National Climate Change Action Plan.

However, having the NAPs/NAPAs in place is not enough for East Africa governments. What is required is bold gender sensitive policies and targeted Climate-Smart Agriculture (CSA) investments to enable women transform their agriculture from subsistence to market oriented, while actively involved in the whole value chain. If women had access to resources such as land, new agricultural knowledge, inputs and ability to make decisions on what to grow, when and how, on-farm yields could increase by 20-30 %. This extra output could reduce the number of hungry people in the world by 12-17 %.

With a changing climate and an increasingly vulnerable agriculture, equality among women and men particularly in access to resources (physical, human, financial) is vital. This will enable them not only improve their lives and that of their families, but also to undertake long-term adaptation to climate change.



Push for gender sensitive Climate Smart Agriculture Practices

The resilience of women to climate change should not only be measured by the current adaptive strategies they are using but the extent to which their actions will impact on future generations to come. The impacts of climate change are being felt by women and children the most. In drought prone countries, children under five are up to 50 % more likely to be malnourished if born during a drought.

What sort of impetus do East Africa governments need to transform agricultural production? The answer lies with our policy makers who should remove constrictive legislative and social-cultural factors that prevent women from accessing climate smart practices, technologies and innovations, climate information and services and micro-finance. In addition, the NAPs should integrate gender considerations in risks to climate change at the local and national

levels. Furthermore, women should be involved in climate change monitoring, adaptation and decision-making processes. By so doing, governments can have a food secure society that is climate smart, inclusive and resilient.

Mary Nyasimi is a gender and policy specialist at CCAFS. Views represented in this article are those of the author and do not necessarily reflect those of CCAFS.

This story is part of a blog-series aimed to highlight International Women's Day on 8 March and this year's theme #Inspiring Change. Help us celebrate IWD by following us online on Twitter, Facebook and Storify using #IWD2014 for more updates. Read additional gender-related stories on our blog: <http://bit.ly/1fcJs0a>

7

ImpactLite survey tool improves understanding of on-farm reality

Explore a new tool and data sets related to on-farm resources, farm management strategies, farm productivity and household economics at the household farm level.

By Dorine Odongo

Agricultural research is many times about the analysis of data, hence the data collection process is a major factor in the success of a study. Comprehensive data sets can really help support what we aim to achieve in the end: improved livelihoods for farmers.

An Integrated Modelling Platform for Mixed Animal Crop systems (IMPACT) was developed to encourage data sharing by using standard protocols, and allowing tools to be linked to facilitate evaluations of various farming systems. There was however a need to further improve the tool, to make it easier and more effective to use, as it took considerable time to complete an interview.

Improving the modelling platform

With this in mind, our Data and Tools team commissioned the International Livestock Research Institute (ILRI) the task to design IMPACTlite tool for household characterization.

Led by scientists from ILRI and CCAFS, IMPACTlite was designed and implemented on field. The survey was carried out across 15 of our benchmark sites in twelve countries across East Africa, West Africa and South Asia.

This tool helps capture the diversity of farming activities and characterize the main agricultural production systems. It is really useful to anyone with the ambition to better understand farmers' production systems and their dynamics. In addition to that the IMPACTlite tool provides a unifying framework for collecting data.

The datasets that can be downloaded include detailed information and data about household composition, agriculture production systems and activities. They also include information about land and labour allocation within households, farmers' income from on-farm and off-farm activities as well as household consumption on food and assets, to mention some

A gender-lens on control over resources, land ownership and allocation of activities has also been added to the datasets. Researchers can easily download the data and figures that have been prepared. It is also possible to replicate the survey in other sites, which can then be used to compare with existing data.

Researchers could develop other surveys building on the existing IMPACTlite existing tool and data.

Silvia Silvestri, scientist in Environment and Livelihoods and one of the team members involved in IMPACTlite, asserts that the dataset from IMPACTlite represents an important source of information for the scientific community:

"The IMPACT-Lite will allow us to capture within-site variability on key performance and livelihood indicators that could be used for a wide range of analysis" she says. "It represents a great example of cross- sites and cross-teams collaboration, together with an excellent learning opportunity about data analysis and household modelling."



All about team work

The IMPACTlite team from ILRI gathered secondary information for each of the research sites with the assistance and support from local site coordinators. Well-organized partnerships and collaborations were really the key to IMPACTlite's success.

Visit the platform to start downloading data and supporting materials. <http://bit.ly/1low3WM>

Dorine Odongo works with communications at the International Livestock Research Institute (ILRI). Story received support from Silvia Silvestri, scientist in Environment and Livelihoods at ILRI.

8

Zooming in, zooming out: exploring Kenya's agricultural futures from farm to regional level

A new ambitious study has combined household and regional models with future socio-economic scenarios, to find how Kenya's highland farmers will adjust their cropping patterns due to climate change and other factors.

By Jost Vervoort

The role that smallholder farmers are likely to play in global food production and food security in the coming decades is highly uncertain. The uncertainties stems from the ongoing agriculture industrialization and climate change - both factors with major impacts.

At the same time, smallholder production is critical to national food security, particularly in Sub-Saharan Africa. Therefore, understanding how smallholder systems may evolve in the future is critical - if poverty alleviation and food security goals are to be achieved.

This writes a group of authors in a recently released article published in *Global Environmental Change*. The piece explores future changes in smallholder farming systems with a focus on the Kenyan highlands.

The team, made up of scientists from the International Livestock Research Institute (ILRI), AgriFood Research and Technology Centre of Aragon, Kenyan Agricultural Research Institute (KARI) and the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), myself included, set out to study change in agricultural systems and how farmers may be influenced by such changes.

In this particular piece we investigate how smallholder agricultural systems in the Kenyan highlands might intensify and/or diversify their production in the future under a range of different scenarios. We did this by linking various socio-economic scenarios with regional and household models.

We ended up using data from almost 3,000 households to characterize different farming systems. We developed future scenarios for Kenya and impacts on the agricultural sector together with a number of different stakeholders. In addition, land-use models were used to study how different farming systems might expand or contract under these scenarios. We also simulated household decision-making based on field data to explore what strategies farmers could go for in different futures.

The results of the research provide concrete insights into adaptation strategies: for instance, we found that diversification with cash crops was a key intensification strategy when farm sizes decrease and labour costs increase.

We also found that dairy expansion is mostly viable when land availability is not an issue, mainly because fodder needs to be planted at the expense of cropland.



These types of results show the need for more integration of research on farmers' uncertain futures at different geographic levels, because there is little information at the moment that connects what happens at the farm level to the larger-scale forces that are shaping agriculture nationally and regionally.

Decision-makers need to know what kinds of robust strategies may be suitable for different types of farming systems under a range of alternative plausible futures, and what the impacts of these strategies may be on farmers who are trying to adapt to the push-and-pull of diverse drivers of change.

We are currently building on the lessons from the study presented here to link regional and household-level models with multi-stakeholder scenarios at regional and local levels through our future scenarios activities.

Get the study: Exploring future changes in smallholder farming systems by linking socio-economic scenarios with regional and household models 2014. <http://bit.ly/NX7gL3>

Learn more about future scenarios work: <http://bit.ly/1kAqJzb> <http://bit.ly/1fJIGKL>

Based at the University of Oxford, Environmental Change Institute (ECI) Jost Vervoort is leading the work on Future Scenarios for CCAFS. Story edited by Cecilia Schubert, CCAFS Communications Specialist.

9

How can we help farmers better understand climate information?

At the Nyando Climate - Smart Villages, Western Kenya, pilot farmers are now receiving climate information on a timely basis to support their decision making. This is complemented by face to face meetings with local agriculture extension agents who discuss implications of the forecasts with the farmers.

By John Gathenya and James Musyoka

Can we provide more reliable climate information to help farmers make better decisions and reduce their climate related risks?

A new research initiative “Enhancing climate smart agriculture in Nyando through innovative partnerships, decision support tools and climate information services” aims to enhance provision and use of climate information and develop new tools and products to support decision making by smallholder farmers. Through this project, the capacity of providers of climate information services as well as that of the intermediaries and users is being strengthened.

The project is led by Maseno University in Kenya, in partnership with the University of Reading, United Kingdom. Other partners include the Kenya Meteorological Service, Kenya Agricultural Research Institute, Ministry of Agriculture, Livestock and Fisheries (MoALF) and local input suppliers (Magos Farm Enterprises). Three community based organizations (CBOs) whose membership is about 1500 smallholder farmers from Nyando are part of this project, which is facilitated by CCAFS.

Timeliness of climate information

During a training held in mid February 2014, farmers expressed the need for detailed climate information ahead of the planting season to enable them better plan their seasonal farm activities.

A pilot short messaging service (SMS) platform involving 40 farmers was developed by Magos Farm Enterprises. Pilot farmers have since received the first seasonal forecast released by the Kenya Meteorological Service at the start of March 2014.

This service will be complemented by face to face meetings, where local agriculture extension agents will discuss the implications of the forecasts with the farmers. Discussions will revolve around the questions of when and what crop varieties to plant this season as well as proper farm management.

Despite the convenience of the SMS platform, for some farmers, seasonal forecasts come too late, when they have already planted their crops. Historical information therefore becomes important since it can be available to help plan for the start of the season.

This project acknowledges the value of earlier forecasting methods and builds on them. It, however, makes use of products coming from a rigorous analysis of historical climate information. These products are presented in a way that farmers and other stakeholders can understand.

For instance in the Kisumu airport region, daily rainfall records starting from 1960 have been used to better estimate the start and end of rains, the length of the season, longest dry spells and the rainfall amounts per season. Subsequently, scientists are now able



to tell how often in the past 50 years, the season started on or later than 15th February, 1st of March or 15th of March.

The use of historical rainfall information

But can we also learn about climate change using rainfall historical information? For example, has the season been shifting, are the seasonal totals reducing and are the dry spells becoming more frequent or longer? Current analysis shows there are no indications of statistically significant changes in these parameters.

That is not to dispel the climate change effects - temperatures have been on a gradual rise - but looking at historical rainfall, changes in the rainfall signal are not evident yet. Therefore, we can still continue to learn from the existing history of rainfall records.

Lessons from analysis of 50 year time series (Kisumu airport rainfall data)

Using the 50 year time series rainfall data for Kisumu airport, valuable lessons are already being inferred. For instance, if a farmer decides to plant crops on the 15 February, when they receive a total of at least 20 mm in one, two or three consecutive days, the risks of encountering a dry spell and therefore replanting is about 20%.

If a farmer plants on the 1 March, the risk of replanting drops to about 10%, and if the planting date is 15 March the risk drops

further to 4%. In the three instances, the length of the growing season was approximately 110, 100 and 90 days respectively for those who plant from 15 February, 1 March and 15 March.

Therefore, there is a tradeoff: reducing the risks of replanting means having a shorter season. The rainfall for Kisumu airport will be different from that received in the Nyando climate - smart villages. To get better rainfall information, the team of researchers working on this project is installing affordable rain gauges in the villages. These gauges will be maintained by the farmers who stand to benefit from improved climate information services.

In the long term, the project will shift to the use of Tropical Applications of Meteorology using SATellite data and ground-based observations (TAMSAM) technology. This entails use of satellite imagery for estimating rainfall and other surface water budget components. This will translate to more timely up to the minute information on the state of the seasons.

Read through the presentation on Climate Information Services in Nyando: <http://slidesha.re/1iDzUM5>
Learn more: On strengthening availability and use of climate services in Africa <http://bit.ly/1hZBsYi>

John Gathenya is a Climate Change Research Fellow at the Walker Institute for Climate System Research, University of Reading in the United Kingdom. James Musyoka is a Statistics Lecturer at Maseno University in Kisumu, Kenya.

10

Better bean varieties for Usambara's rural poor

Farmers in Lushoto, Tanzania are now able to access improved bean varieties better suited for the area. Combined with good agronomic practices, they reported a threefold increase in bean yield compared to local varieties.

By Philip Kimeli, Charles Lyamchai and George Sayula

An ongoing project in Lushoto district, Tanzania aims to enhance food crop productivity through promoting the use of drought tolerant maize and bean varieties and supporting farmers with improved agronomic practices.

The project is supported by the CGIAR research program on Climate Change, Agriculture and Food Security (CCAFS), Selian Agricultural Research Institute (SARI), farmers in Lushoto, Ministry of Agriculture among other stakeholders. By undertaking participatory action research, current efforts are directed towards making available seeds of improved varieties of beans and maize to the farmers in this densely populated northeastern region of Tanzania's Usambara highlands thereby establishing a sustainable seed delivery system.

Studies project vast areas of sub Saharan Africa, especially Eastern Africa, will experience a loss in suitability for bean production. This is significant as a large proportion of Africans diet comprises cereals, roots and tubers. Appropriate adaptation measures are therefore needed to ensure food security is achieved in Sub Saharan Africa in the coming years

CCAFS Climate Smart Villages

Lushoto is one of CCAFS Climate Smart Villages, sites where researchers, development partners, and farmers are testing climate-smart agricultural interventions. The aim is to boost farmers' ability to adapt to climate change, manage risks and build resilience. At the same time, the hope is also to improve livelihoods and incomes and, where possible, reduce greenhouse gas emissions to ensure solutions are sustainable.

According to a baseline survey conducted at the site, only 4% of the farmers are food secure all year long. Farmers in Lushoto, Tanzania have been growing mainly local varieties of crops whose productivity is low compared to the improved varieties. This was attributed to lack of adequate access to seeds of improved varieties and inadequate knowledge on good agronomic practices.

Bean yield following growing seasons

During the first season 1,000 kilograms of improved bean seed (Lyamungo 90) were distributed to 100 baseline farmers in the zone. Farmers reported that the crop had good vigor and was relatively resistant to pest and diseases when compared to local varieties that were previously grown. This translated to a threefold increase in bean yield compared to local varieties. An estimate of 5600kgs of beans was harvested by the 100 farmers.

An estimated 800 kg of improved bean was further distributed informally to farmers with a further 500 kgs contributed to seed banks in the villages for redistribution to other farmers thus increasing adoption rates.

In the second season, another improved bean variety (Selian 97) was introduced alongside the Lyumingo 90. Monitoring results showed that over 70% of the farmers used improved varieties with a further increase in yields. An estimate of 20,000kgs of improved bean varieties was harvested by 220 farmers surveyed from the five participating villages. There was however no significant yield difference between Selian 97 and Lyumingo 90. Irrespective of this, farmers preferred Selian 97 for a number of reasons among them taste and color.



Community Based Organizations established at the study site provided a platform for distribution of the improved seeds through village banking. An estimated 300 kgs of improved bean variety was contributed to the seed bank per village for redistribution.

Improved agronomic practices taken up by farmers also led to higher bean yield. This entailed row planting as opposed to broadcasting, correct spacing, and disease and pest control. Improved income levels as a result of higher yields led to improved housing for the farmers. Over 80% got enough money to pay school fees to their children in secondary and tertiary institutions. Finally, access to improved seed meant farmers were able to increase and diversify the scale of crop production leading to improved household food security.

Project sustainability strategies

Income generated from the sale of the multiplied quality seeds was re invested in the production cycle. Further to this, privately registered seed companies/farmer groups/Community Based Organizations were encouraged to continue scaling up production and supply of quality seeds. Through SARI, follow up and monitoring, institutional building, technical support and guidance will be continued and scaled up to ensure farmers are able to attain food security and improved incomes.

As demand for quality seeds in the region increases, scale out of this intervention to the entire district and beyond are a key consideration. Farmer field days will be organized to spread the innovation and promote learning among neighboring communities. This will lead to greater adoption rates in newer areas as well as engagement with agro-input dealers in the zone to market the yield produced.

Additional reading: Breeding climate-proof beans to protect the "Poor Man's Protein" <http://bit.ly/1fsxVXo>

Learn more: Case studies: Crop adaptation to climate change – Beans: <http://bit.ly/O5bvnw>

About a similar project: Searching for better bean varieties in Uganda : <http://bit.ly/1rKKfe1>

Phillip Kimeli is a Research Assistant with CCAFS. Charles Lyamchai is a Project Coordinator while George Sayula is the Lushoto site Team Leader, both work for Selian Agricultural Research Institute (SARI)
Editing by Vivian Atakos.

11

Communicating behavior change: how a Kenyan TV show is changing rural agriculture

Farmers need innovative ways to get information about agriculture, and the TV-show Shamba Shape-Up is doing just that. Using information from partners, CCAFS included, the show presents the information to farmers through fun, interactive and engaging ways. But is the show really making a difference?

By Nafisa Ferdous and Manon Verchot

How can we best assist farmers adapting to climate change? One of our ongoing strategies to achieve success has been to work in partnerships. By collaborating with partners the likelihood of us learning new approaches to disseminate climate information or discover innovative and climate-friendly agriculture practices is much greater. This is one of the reasons why we are working with Shamba Shape-Up in East Africa.

Shamba Shape-Up is a farm make-over program - but with a twist! In each episode, the team visits smallholder farms and addresses the biggest challenges faced by farmers. Using information from its partners, such as the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), the show presents the knowledge to farmers through broadcasted shows.

Climate change is proven to be a major issue among farmers

Therefore, the aim of the show is to give farmers the help and knowledge they need to improve their farming methods, despite climate change, increase their income and turn-around their farms into good business for the future.

“Farmers don’t know much about climate change, they don’t know when to plant, or what is happening to their crops,” says Tonny Njuguna, presenter on the Shamba Shape-Up series. “All the farmers we visited have commented on the unreliability of the weather - usually the pattern of the seasons changing and there being too much rain in too short a time, at the wrong time.”

The Shamba Shape-Up show is now starting its fourth season:

The program is revolutionising the way its 11 million viewers are getting their agricultural information. Rather than addressing future climate problems through overly technical language, the program addresses the issues that farmers face day-to-day and promote adaptations that have both short-term and long-term benefits.

For example, in a visit to Rongai, Kenya, the SSU team teach farmers John and Miriam about the value of harvesting rainwater by making use of gutters and water tanks. In areas where rainfall is erratic and unpredictable, water harvesting is particularly important for farmers who are forced to walk miles to get sufficient water. As weather patterns are expected to become even more unpredictable, water harvesting is a good short and long-term adaptation option.



A changed behaviour could mean a change in income

A recent 2013 study, commissioned by the Africa Enterprise Challenge Fund (AECF), explores whether the program contributed to actual behavior changes.

The study, which used questionnaires and follow up face-to-face surveys of smallholder farmers, found that 98% of viewers reported having learned something new, such as new techniques in cattle and dairy cows rearing to practices that improve soil quality.

Results like this highlight the power that education-cum-entertainment programming can have in promoting technical adaptation and on-farm innovations.

But what does learning mean in terms of changing behavior? The same study found that nearly 87% of the viewers also incorporated the new practices they learned onto their farms.

When considering a growing secondary audience of farmers who learn about SSU through word of mouth (perhaps from family, neighbors or friends), the link between information and spreading of innovation can be quite dramatic.

In addition to adaptation of new technologies, one of the most interesting results of the AECF study was on the program’s impact on farm incomes and benefits. The survey reported that 53% of participating maize farmers made changes to their soil fertility. The soil management practices cost around 58.8 USD per household but resulted in a median seasonal increase of 82.4 USD.

Similarly, 54% of participating cattle farmers reported that after watching SSU, their median investment in dairy production practices was 117.6 USD and resulted in an increase of 58.8 USD per month in income.

12

Climate-smart Brachiaria Grasses: livestock feed, household cash

A recently established program targets to improve feed availability in selected East African countries through the climate - smart Brachiaria grasses.

By Ethel Makila



Social Learning: key to success

Social learning approaches to sharing and receiving knowledge are likely a major factor in the credibility and success of the program. For example, each episode features hosts that interview real farmers on their agricultural problems to generate feedback on farming experiences and on using improved technologies.

Scientists from the Kenya Agricultural Research Institute or from international research agencies like ICRISAT are often guests on the show who visit farms and discuss practical constraints of farmers and explain options for improve agricultural practices. Whether discussing how to practice better agronomy, diversify crops or how to improve storage after harvest, a combination of farmer testimonials and expert input lend credibility to the new ideas on the show.

Change however is driven from the grassroots level and Shamba Shape-Up knows this. Most of the proposed farm improvements are economically feasible for extremely poor farmers.

Where possible, the show recommends that farmers use resources that they have on their farms, such as manure and food waste. Putting scientific information into relevant and practical, but also entertaining, terms for farmers is much more effective at getting farmers to try innovations.

A growing audience

Every year, more and more farmers are getting access to televisions. From 1998 to 2004, television use in rural areas grew from 36 per cent to 64 per cent. Where television isn't accessible, Shamba Shape-Up has SMS service and paper pamphlets for farmers. By providing readily accessible information from different platforms, Shamba Shape-Up tries to reach as many farmers as possible.

There is a lot more that can be learned, both for farmers and for us. Already we know that soil fertility adaptations and livestock rearing adaptations are the most popular among farmers. Further surveys will teach us more about which adaptations work and why. Answers to these questions can be used to direct research in the future.

Learn more about this partnership:
Farmers get latest solutions for climate 'shape-up':
<http://bit.ly/1frJqhH>

Kenyan farmers use climate 'entertainment' for empowerment:
<http://bit.ly/1pBduw0>
Interview: Successful 'fast-food' agricultural knowledge in the making: <http://bit.ly/1pBdyMe>

Nafisa Ferdous works as a Gender and Social Learning Consultant for CCAFS Linking Knowledge with Action theme. Manon Verchot joined the team as an intern last year.



A Swedish funded research program led by the BeCA-ILRI Hub is improving the adaptation of Brachiaria grasses, an indigenous East African forage crop, to drought and creating forage seed production enterprises to benefit resource poor smallholder farmers in the region.

During the 22nd International Grasslands Congress held in Sydney, Australia in the last quarter of 2013, Sita Ghimire, a plant pathologist and senior scientist with the "Climate-smart Brachiaria grasses for improving livestock production in East Africa" program presented a poster about the possibilities that these highly nutritious grasses present.

By using the genetic diversity of Brachiaria grasses and endophytes found within the host (beneficial microorganisms growing within the plants) the research aims to enhance the drought resilience of the grasses; reduce the conversion of soil nitrogen to greenhouse gas, nitrous oxide; and possibly develop microbe based pesticides and fertilizers with wider applications.

Read more about the project here:
View the poster here: <http://slidesha.re/1hZpF2R>

Read about what drew Sita out of USA and into Africa to work on this project: <http://slidesha.re/1hZpF2R>

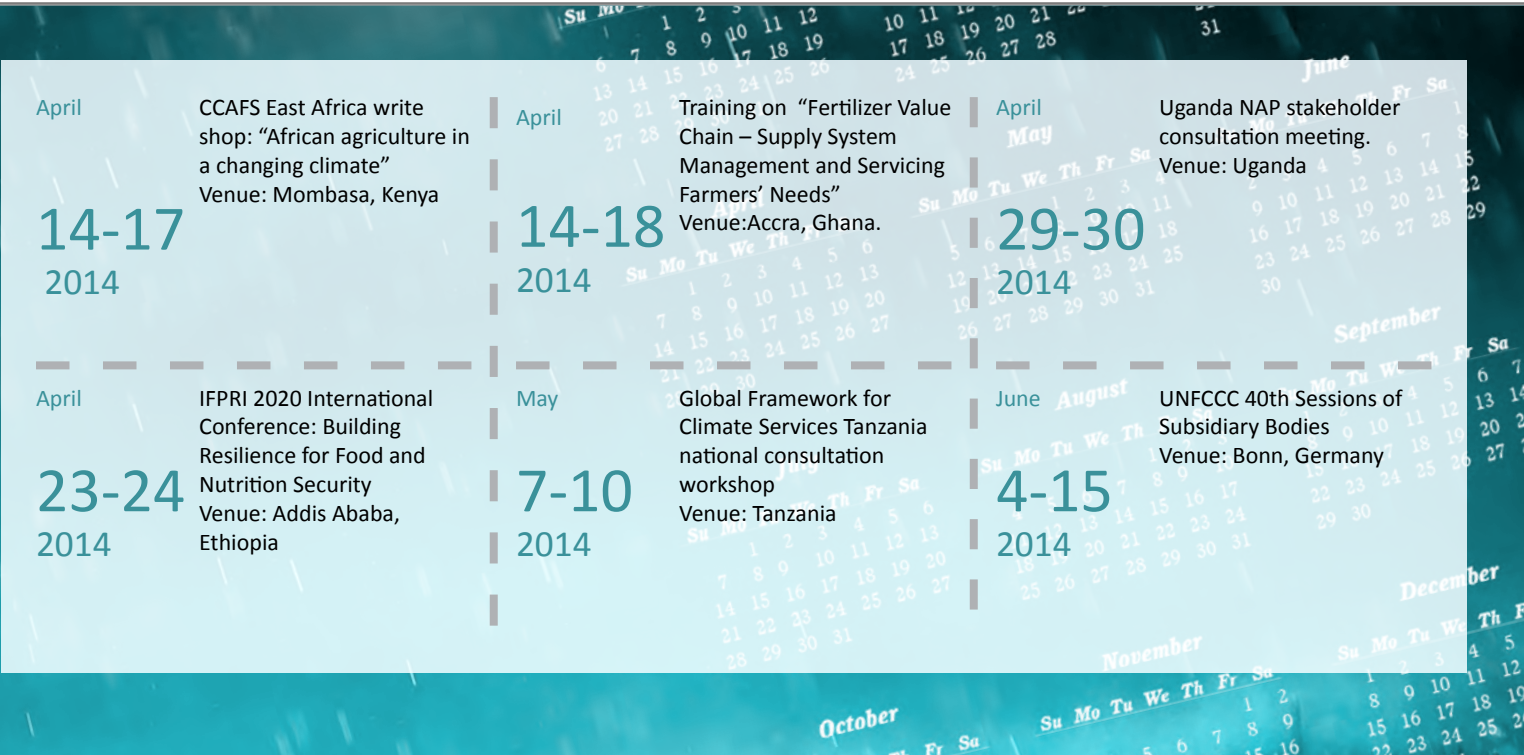
Coming to Africa: <http://bit.ly/1dUeWEE>

Out & About



1. James Kinyangi with Suresh Patel from Kenya Private Sector Alliance (KEPSA), after a courtesy call to CCAFS EA. 2. Brian Otiende from the East Africa Community (EAC) addressing delegates during the Regional Workshop on African Agriculture in a Changing Climate in Arusha, Tanzania. 3. Timm Tennigkeit from Unique forestry and land use, talking about agricultural Nationally Appropriate Mitigation Actions (NAMAs) development in Kenya. 4. Eike Leudling from ICRAF with Catherine Mungai from CCAFS EA during one of the NAP meetings. 5. World Bank crew filming John Obuom’s Climate Smart Farm

In our diary



CCAFS EA in the Media



Africa needs multi-sectoral approaches to address impacts of climate change: official - (Coast Week) <http://bit.ly/1j8g1xL>

Arusha hosts regional workshop on African Agriculture/climate change - (IPP Media) <http://bit.ly/1dQf08o>

Investment essential to boost agriculture growth - (CNBC AFRICA) <http://bit.ly/1kX51X7>

Further Reading

CCAFS Latest Publications

Climate change vulnerability and risk assessment of agriculture and food security in Ethiopia: which way forward? bit.ly/1lau71A

Climate change adaptation and mitigation initiatives for agriculture in East Africa. bit.ly/1pBzJlF

Climate-Smart Villages: a community approach to sustainable agricultural development. bit.ly/O5Evvu

Climate-smart agriculture success stories from farming communities around the world. bit.ly/P92o6c

CCAFS Gender Impact Pathway for East Africa. slidesha.re/1jDu7d3

Resources and Tools

CCAFS website and blog updated daily with news on policy and practice, research, events and downloadable publications from the CGIAR and partners.

Website: bit.ly/1gX2uKi Blog: bit.ly/Blogs_EastAfrica

Adaptation and Mitigation Knowledge Network (AMKN) is a map-based platform for sharing data and knowledge on agricultural adaptation and mitigation. bit.ly/AMKN_Maps

AgTrials Large public repository of agricultural trial data sets, with different crops, technologies and climates. bit.ly/AgTrials

Food Security CASE maps Map-based projections of crop area and yields, average calorie availability, and international trade flows across the world. bit.ly/Casemaps

MarkSim II Generator of future location-specific rainfall series, based on a choice of General Circulation Models. bit.ly/Mark-SimGCM

GCM data portal Set of downscaled climate data sets. bit.ly/Climate_Data

Dataverse Public portal for full CCAFS data sets such as the baseline surveys from CCAFS East Africa sites that include information on farmers’ current adaptive practices. bit.ly/Baseline-Surveys

Big Facts website Get all the links on climate change, agriculture and food security. bit.ly/1gYWjWt

Atlas of CCAFS sites Browse colourful maps of CCAFS research sites in three regions: East Africa, West Africa and South Asia. bit.ly/1iSfwHd

Core Sites in the CCAFS regions This portfolio includes brief descriptions of CCAFS core sites in East Africa, West Africa and South Asia, including coordinates of the sampling frames of the baseline surveys. bit.ly/1dKwrfG

Adaptation and Mitigation Knowledge Network is a map-based platform for sharing data and knowledge on agricultural adaptation and mitigation. bit.ly/1kiEnng

Climate Analogues This is a tool that uses spatial and temporal variability in climate projections to identify and map sites with statistically similar climates across space and time. bit.ly/1pzmVhl




CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), East Africa.

P.O. Box 30709 - 00100 Nairobi, Kenya

Phone: +254 20 422 3000 Fax: +254 20 422 3001

Email: ccafseas@cgiar.org

Website: ccafs.cgiar.org/where-we-work/east-africa

 @cgiarclimate_EA

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