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The SmartAG Partner

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Heightening public awareness of the nutritional benefits of pulses as part of sustainable food production aimed towards food security and nutrition.



Message From The Program Coordinator

Dear Readers,

We are pleased to share with you the first issue (in 2016) of the SmartAG Partner - a quarterly newsletter of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) East Africa (EA). We share the key highlights from CCAFS EA research and policy engagement initiatives from the last quarter of 2015.

Innovative climate change partnerships involving multiple sectors have the potential of ensuring millions of farming households have access to climate-smart agriculture (CSA) technologies and practices. Read about key lessons emerging from such partnerships as discussed with stakeholders working on climate change during the United Nations Climate Talks (COP21) in Paris, France. In addition, read how such partnerships have supported East African countries in creating an enabling environment for CSA adoption through preparation of framework programs.

Access to climate information services is vital in helping farmers adapt to climate change. Find out why key institutions working on climate services in Africa have embarked on a collective process towards strengthening and scaling up these services for the agriculture sector. We also explore how information and communication innovations can bridge gaps in accessing climate information services.

Researchers and development practitioners have developed a range of tools and options for effective climate adaptation and mitigation in agriculture. We introduce some of these tools applicable in Africa. From the field, a young farmer from Kenya shares his success story, following adoption of CSA, amidst the common tales of failing crops, erratic planting seasons and extreme weather events. Finally, find out what criteria farmers in Tanzania use to prioritize CSA.

Dr. Maren Radeny



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Innovative climate change partnerships bring hope for smallholder farmers in Africa

Report back from Farmers Day at the UN Climate Change Conference.

By Vivian Atakos, Vanessa Meadu and Catherine Mungai

If the music changes, you must change the dance steps. So goes a popular proverb from West Africa. This has been the realization of Kisilu Musya, a small scale farmer from the Eastern part of Kenya, a semi-arid region experiencing some of the worst impacts of climate change.

Kisilu remembers well his farming system 15 years ago. “The rains were plenty. I grew local maize varieties every season and received a bumper harvest each time,” he told the audience at a side event organized by the Africa Climate-Smart Agriculture Alliance on 2 December in Paris. However, with a changing climate, he noted that over a period of time local maize varieties no longer gave good yields. He was struggling to feed his family of nine children and wife Christina. Subsequently, he joined a farmer field school operating in his village where he amassed knowledge on new farming methods and accessed drought tolerant seed varieties. Now a research farmer, Kisilu tries out new crop varieties, determining which ones yield best before sharing lessons with his community. His main concern, however, is the need for long term solutions: where crops, trees and cattle work together to form a sustainable and long term circle of produce.

Kisilu’s experience set the scene for climate scientists, policy makers and development practitioners to explore innovative partnership approaches to achieve climate-smart agriculture (CSA) in Africa. The event, which was moderated by Lindiwe

Sibanda from the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), showcased multi sector collaborations in action highlighting progress to date and upcoming developments.

Multi sector collaboration: The Africa CSA Alliance

Set up to leverage policy, technical and financing support for grassroots, national and regional-level programmes and initiatives, “the Africa CSA Alliance aims to drive widespread adoption of CSA practices by local farmers like Kisilu throughout sub-Saharan Africa,” explained Chris Armitage from World Vision, one of the Alliance members. The aim is to reach at least six million farming households in Sub-Saharan Africa by 2021 thereby contributing to the African Union’s broader goal of supporting 25 million farming households by 2025.

Chikakula Miti from the Common Market for Eastern and Southern Africa (COMESA) highlighted the role of regional economic commissions (RECs), in promoting uptake of CSA in member countries. Starting 2014, COMESA, the East African Community (EAC) and the Southern African Confederation of Agricultural Unions (SACAU) have supported five countries to prepare country-specific climate-smart agriculture framework programs (CSA-FPs). The countries are Kenya, Uganda, Tanzania, Botswana and Namibia.



New white pea bean varieties that are drought tolerant and resistant to pests and diseases in Ethiopia. Partnerships are necessary to ensure research has an impact on farmers' fields.

Linking CSA science with policy: tools and practices

The Alliance also has CGIAR providing technical support by availing science-based approaches to aid CSA decision making.

“CSA is not just about technologies which CGIAR and its partners are trialing but about extension. It entails creation of an enabling environment through appropriate policy formulation as well as provision of timely climate services to the farmer. This should translate to multiple benefits including improved productivity and resilience”, said Todd Rosenstock from the World Agroforestry Center (ICRAF) during the meeting.

With the knowledge that CSA is context specific and subject to priorities of farmers, Rosenstock and colleagues from the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) are availing science-based information, approaches, and tools to governments and other

stakeholders to guide CSA programming including policy implementation. The engagement is demand-driven, ensuring that science is responding to policymakers' needs.

CSA and agricultural development

Although having good policy frameworks at the national level is crucial in promoting agriculture, this was not enough to support the smallholder farmer.

“If you want to impact farmers such as Kisilu, it must be on his farm” said Yemi Akinbamijo, Executive Director of the Forum for Agricultural Research in Africa (FARA) during the side event. As one of the technical members of the Africa CSA Alliance, FARA facilitates the dissemination and adoption of agricultural technologies and best practices as they emerge from the research system. FARA's current strategy includes the use of innovation platforms (IP) where a number of actors interact to jointly identify problems and investigate solutions leading to generation of innovations and



Panelists drawn from farmers, researchers, regional economic bodies and NGOs during the farmers day meeting.

accompanying socio-economic benefits with a number of institutions in Africa. An innovation platform is a forum comprising relevant actors selected along the value chain of a specific commodity or system of production. The actors include farmers such as Kisilu, researchers, extension agents, traders, processors, financial institutions, policy makers, regulators, output market operators, consumers and others. More than 300 of these innovation platforms are operating in several African countries reaching small holder farmers and equipping them with skills and knowledge to transform their agricultural enterprises.

Is their hope for farmers?

Despite the slow process of getting agriculture into a new climate agreement, stakeholders should remember that deal or no deal, a lot can be achieved through multi stakeholder collaboration. To the smallholder farmer, all is not lost as many countries continue to show commitment to harness the potential of agriculture in achieving a low carbon pathway.

“I have a lot to tell my community. Most important, they have not been forgotten as you are all here looking after their interest,” said Kisilu in his parting remarks to the discussions.

His Royal Highness Prince Seeiso Bereng Seeiso of Lesotho closed the session with a passionate speech about the critical role that African farmers play in ensuring a food-secure future. He urged COP21 to take African farmers as serious partners.

The event was jointly organized by: International Livestock Research Institute (ILRI); Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN); Forum for Agricultural Research in Africa (FARA); Norwegian Forum for Environment and Development (ForUM); Southern African Confederation of Agricultural Unions (SACAU); University of Copenhagen; World Vision International (WVI).

Read more: [Enhancing readiness to address climate shocks in Africa.](http://bit.ly/1S8orsf) <http://bit.ly/1S8orsf>

New study exposes gap in global climate policy as countries commit to action on agriculture <http://bit.ly/1OVc9NJ>

Blog written by Vivian Atakos, Communications Specialist CCAFS East Africa. Contributions were received from Vanessa Meadu (CCAFS Communications Manager) and Catherine Mungai (Policy and Partnerships Specialist - CCAFS East Africa).

Coordinating climate services with key institutions in Africa

Strengthening climate services in Africa entails developing capacity of agencies to produce and communicate farmer-relevant climate information.

Key institutions working on climate services in Africa have embarked on a collective process towards strengthening and scaling up climate information and advisory services for agriculture in Africa. Researchers and technical experts from these institutions met during a pre-event to the fifth conference on Climate Change and Development in Africa (CCDA-V) in Victoria Falls, Zimbabwe held from 28 to 30 October 2015. CCDA is an annual forum, convened by the African Climate Policy Center (ACPC), designed to strengthen linkages between climate science and development policy by promoting transparent discussions between key stakeholders in the climate and development communities.

The pre-event, held on 27 October, brought together researchers from the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), representatives from national meteorological and hydrological services (NMHS), the IGAD Climate Predictions and Applications Centre (ICPAC), the ClimDev-Africa program, the Global Framework for Climate Services (GFCS) and the International Research Institute for Climate and Society (IRI). The discussions were an important step toward a collaborative effort to strengthen capacity, through African regional institutions, to support smallholder farmers with relevant climate services. Key messages from the discussion were presented to other participants during the closing plenary of the CCDA conference and will inform meeting outcomes.

By Vivian Atakos, Jim Hansen and Catherine Mungai

Gaps in design, delivery and effective use of climate services for smallholder farmers at scale

Participants highlighted two major gaps: limited capacity of meteorological organizations to provide farmer-relevant climate information and to communicate it in a manner that smallholder farmers can use effectively.

“The capacity of our meteorological services to handle processes such as monitoring, transmission, analysis and dissemination of climate information to the end users such as farmers needs strengthening,” noted Didace Musoni from the Rwanda Meteorological Agency (RMA) during the meeting. He emphasized the need for climate scientists to work in a more coordinated way with national institutions.

While agricultural extension services and some development organizations have more capacity to reach smallholder farmers, they generally lack the expertise to enable farmers understand and use complex climate-related information. Many countries also lack effective mechanisms to allow meteorological and agricultural agencies to work effectively in the design and delivery of effective climate services for farmers.

Lessons from collective experiences on how key gaps can be addressed

Workshop presentations described initiatives that have developed promising solutions to the key challenges faced by national institutions.

The Enhancing National Climate Services (ENACTS) initiative, for instance, focuses on the creation and communication of spatially complete, high-resolution climate information products that can be tailored to the needs of local decision-makers. “ENACTS strives to simultaneously improve availability, access and use of climate services,” said Tufa Dinku, from IRI who works on the project. Data availability is improved by blending national observations with satellite and other proxies. Access to information products is improved by providing online tools for data analysis, visualization and download. These online tools are integrated into the NMHS’ web pages.



A woman with her radio in Senegal. Gaps in capacity to produce farmer-relevant climate information are closely linked to gaps in capacity to work with farmers to communicate information effectively & support its use.

Participatory Integrated Climate Services for Agriculture (PICSA), undertaken by CCAFS and the University of Reading, is one of the initiatives that aim to strengthen capacity of agricultural extension services and other intermediaries to communicate climate services with smallholder farming communities. PICSA involves farmers in using historic weather data and forecasts for their planning. PICSA has been piloted in Tanzania, Malawi, Zimbabwe, Ghana and Kenya. A PICSA manual for intermediaries was launched on 28 October.

“The PICSA approach depends on products from analyzed historical climate information which is not routinely available. Its success, in whatever context, therefore depends on strengthening the capacity of the national meteorological services to produce and share relevant climate information products,” said John Gathenya who has worked with PICSA in Tanzania and Malawi.

CCAFS strategy for climate services in the region entails working with key regional and national institutions to address gaps in design, delivery and effective use of climate services for smallholder farmers at scale hence involvement in ENACTS and PICSA.

Lessons from collective experiences on how key gaps can be addressed

Participants highlighted the need to coordinate efforts to develop capacity to produce farmer-relevant climate information, and to develop capacity to communicate that information.

The challenge of coordinating development of capacity of NMHS to supply relevant climate information, and capacity of agricultural intermediary organizations to communicate climate services, raised the importance of coordinating financial investments in climate services. Coordination among funders is important, to ensure that support targets the critical gaps in a given context, and to avoid duplication of initiatives by different players.

To better target investments, an inventory of what has already been invested in a certain area of climate services — for instance tools or training in a particular approach— will need to be established. Additionally, governments need to elevate discussions on the role of climate services in agriculture in order to increase investment opportunities by funding agencies.

Read more about ENACTS: Involving users in the creation of climate information products. <http://bit.ly/1S8oVP6>
New manual helps expand reach of climate services together with farmers <http://bit.ly/1PyKBNU>

Blog written by Vivian Atakos (Communications Specialist for CCAFS East Africa) with contributions from Jim Hansen (Leader, CCAFS FP2) and Catherine Mungai (Partnerships and Policy Specialist, CCAFS East Africa).

Ready for take-off: East african countries develop climate-smart agriculture frameworks

Report back from African Pavilion side event on country CSA programs held during the UN Climate Change Conference (COP21).

By Catherine Mungai, Brian Otiende and Vivian Atakos

Countries in East Africa are ready to tackle the impacts of climate change in the agricultural sector by implementing climate-smart practices. With guidance from several key regional economic communities (RECs) and the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), Kenya, Uganda and Tanzania have set up enabling frameworks to address climate related risks that impact on food security. These countries (together with Botswana and Namibia in Southern Africa) have prepared country climate-smart agriculture framework programs (CSA-FPs) thereby planning responses and integrating climate resilience into their agricultural development plans.

East African policy makers, researchers and development practitioners shared their experiences on preparation of CSA-FPs at a side event held on 4th December at the African Pavilion during the United Nations climate talks (COP21) held in Paris from 30th November to 11th December 2015. The event was hosted by CCAFS and the East African Community (EAC).

Regional Economic Communities Play Essential Roles

In her keynote remarks, Hon. Jesca Eriyo, Deputy Secretary

General, EAC, emphasized that one of the key roles of RECs such as the EAC is to support the implementation of the Comprehensive Africa Agriculture Development Programme (CAADP) framework at national levels.

“The EAC will support the establishment of national CSA task forces to provide technical oversight in the implementation of pilot projects and promotion of national CSA policy and practices. Additionally, the task forces will oversee the development of CSA investment frameworks to mobilize additional resources for up-scaling CSA activities in partner states,” Hon Eriyo said.

The Science-Policy Interface

The role of science in informing policy design and implementation cannot be overlooked. Evan Girvetz, a CCAFS scientist based at the International Center for Tropical Agriculture (CIAT) demonstrated this through his presentation on mainstreaming CSA in national programs and policies. He pointed out that the focus of the program is to use science to support CSA integration across scales in Africa from continental, regional, national to local level actions. This is achieved through a ‘CSA plan’ which comprises key steps: situation analysis, targeting and prioritizing, programing design and monitoring and evaluation across scales and systems all undertaken through engagement and capacity building.



Climbing beans in Rwanda. Country CSA programs aim to deliver on multiple benefits, including food productivity, nutritional security, and incomes especially to women and other vulnerable groups.



The panelists during the COP21 Africa pavilion side event on taking forward implementation of national climate-smart agriculture plans

Gideon Galu from the Famine Early Warning Systems Network (FEWSNET) made a presentation on climate-smart tools for East Africa. He highlighted climate datasets and tools such as Climate Hazards InfraRed Precipitation (CHIRP 2.0), GeoClim and Community Based Adaptation (CBA) which can be used to identify risks and vulnerabilities across scales and systems and also subsequent adaptation strategies. He emphasized that post COP21; partners need to enhance quality, quantity and applications of climate services in-line with the Global Framework of Climate Services (GFCS).

Zeroing in to National and Local Scales

National CSA-FPs were presented from three countries; Tanzania, Uganda and Kenya by the following:

- Ms Shakwaanande Natai, Head, Environment Management Unit Ministry of Agriculture Food Security and Cooperatives, United Republic of Tanzania
- Stephen Muwaya, Sustainable Land Management Program Coordinator/CSA Focal Point Ministry of Agriculture, Animal Industry and Fisheries, Republic of Uganda
- Vincent Ogwang, Ministry of Agriculture, Livestock and Fisheries, Republic of Kenya

The CSA-FPs aim to deliver on multiple benefits, including: food productivity and nutritional security, and incomes especially to women and other vulnerable groups; building resilience in the agriculture sector and the adaptive capacity of the farmers; and contributing to reducing or removal of greenhouse gas emissions from the agriculture and land use sectors thus contributing to the global public good. While Kenya integrated adaptation and mitigation components from the CSA-FP into their Intended Nationally Determined Contribution (INDC), Tanzania, on the other hand, is using the plan developed as a foundational document to support a proposal to transform agriculture in the country to the Green Climate Fund (GCF).

In Tanzania, a program by the Alliance for a Green Revolution in Africa (AGRA) and Yara International intends to support CSA piloting in three districts of Mbeya region with target crops: cereals, legumes and oilseeds in the Southern Agricultural Growth Corridor of Tanzania (SAGCOT) region. This will enable smallholder farmers transit towards more productive and commercial agriculture so as to improve their own livelihoods and the efficiency and sustainability of the sector. Uganda, on the other hand, has put in place institutional frameworks such as a multi stakeholder CSA taskforce (Community of Practice) and CSA Networks for CSOs, private sector and faith based organizations to support the implementation of CSA in the country.

Successful adoption and upscaling of CSA technologies and practices requires the participation and engagement of multiple stakeholders. Representing civil society organizations, Samson Ogallah, Programme Manager, Pan African Climate Justice Alliance (PACJA) emphasized that CSA policy and actions should achieve the following: protect livelihoods, tackle root causes, promote inclusive values and processes, promote sustainable partnerships, promote gender equality, build on previous success and finally, explore and expand new areas.

This side event provided an opportunity to dialogue on the appropriate policy and financing mechanism to scale-up the adoption of CSA practices in defined farming systems in East Africa. It is anticipated that the CSA-FPs will catalyze increased public-private sector investments to reach more than 100,000 agricultural service providers benefitting 10 million smallholder farmers (including women and youth) and small-scale food producers by 2025.

The national CSA-FPs can be accessed here: <http://bit.ly/23qhpm7>
Read more: Climate-smart agriculture plan: a guide to scaling CSA. <http://bit.ly/1QyqT9K>

Catherine Mungai is a Policy and Partnerships specialist while Vivian Atakos is a Communication Specialist. They both work for CCAFS East Africa. Brian Otiende works for the East African Community and is based at the Headquarters in Arusha, Tanzania.

The Africa CSA Alliance: path to implementation

One year since its launch, the Alliance makes progress towards improving the lives of six million farming households under climate change.

By Evan Girvetz and Chris Armitage

This time last year, the Africa Climate-Smart Agriculture (CSA) Alliance was launched at a side event during UN Climate Week 2014. Since then, the Alliance transitioned from developing and refining its continental structure, systems and frameworks, to facilitating multi-sectoral in-country engagement and collaboration, and supporting the development of national CSA plans and scaling up proposals. The resulting country-level partnerships that have formed for CSA implementation reflect the core purpose of the Alliance and the significant progress being made towards its overarching goal of 6 million smallholder farm households practicing CSA by 2021.

In-country partnerships across Africa

The Alliance has so far mobilized in-country partnerships in 8 countries: Ethiopia, Kenya, Madagascar, Malawi, Niger, Tanzania, Uganda, and Zambia. In each of these countries, the Alliance is working collaboratively to support the respective Governments to develop and implement CSA programs within their National Agriculture Investment Plans (NAIPs). To develop these in-country partnerships, regional bodies such as the New Partnership for Africa's Development (NEPAD) and the Common Market for Eastern and Southern Africa (COMESA) have facilitated meetings between country focal points from each of the Alliance steering committee organisations and the respective National Governments. Discussions are underway with the Governments in additional countries, and

the Alliance plans to expand its activities over the coming months.

At the continental level, the Alliance has facilitated pan-African action towards CSA in a number of ways. For example, in February this year, the Zambian Ministry of Agriculture and the Alliance jointly held a 5-day national inception workshop, which was attended by representatives and focal points from the government, regional political institutions, multilateral and UN agencies, international and local NGOs, technical and research organisations, farmers and farmers' organisations, and the private sector. The workshop allowed a broad collaborative approach to mapping and prioritisation, the formation of a National CSA Steering Committee, and the development of an activity plan. In the ensuing months, the foundation of a country-level CSA scaling-up proposal has been developed.

In April, the Malawian Ministry of Agriculture and the Alliance jointly held a 2-day National Inception Workshop – which coincided with the Beating Famine Conference, a joint initiative between the World Agroforestry Centre (ICRAF), World Vision and the Alliance which had over 600 participants exploring sustainable food security through land regeneration in a changing climate. The Inception Workshop involved key members of a National Steering Committee, including the Ministry of Agriculture as Chair and World Vision Malawi as Facilitator. Participants also developed broad recommendations for the steering committee regarding institutional participation, focus and prioritisation, and critical processes and activities.



A farmer in Kenya records indigenous tree species. The Alliance was established to help smallholder farmers reduce the risks they face due to climate change.

Aligning with complementary efforts Across Africa

The Africa CSA Alliance grows out of, and is thus intended to contribute to, the commitment of African governments made at the 23rd African Union Summit (Malabo) to have at least 25 million households utilizing CSA practices by 2025 (Vision 25x25). In this effort, the Africa CSA Alliance is not alone. There are a number of complementary CSA efforts developing throughout Africa which offer opportunities and platforms for collaboration and sharing information, learnings and approaches to meet this objective.

The African Union-NEPAD held the first Pan-Africa CSA Alliance forum in May 2015 in Addis Ababa, Ethiopia, where it launched a high-level Africa CSA Alliance. This continental-level platform to support achieving Vision 25x25,

is fully aligned with the Comprehensive Africa Agriculture Development Programme (CAADP) framework and in-country processes to scale CSA on-the-ground.

In West Africa, the Economic Community of West African States (ECOWAS) launched two important initiatives at the High Level Forum of Climate Smart Agriculture Stakeholders in West Africa in June 2015. First, an Intervention Framework for the Development of Climate-Smart Agriculture under the West Africa Regional Agricultural Policy (ECOWAP/CAADP) implementation process. Second, is the launch of the West Africa CSA Alliance (WACSAA) with the intention to implement this Intervention Framework through convergent and coordinated initiatives. This initiative provides strong regional coordination for developing in-country implementation partnerships and on-the-ground scaling up of CSA.



Farmer Kuria Samuel practices drip irrigation in the Tana River Basin, Kenya.

In eastern and southern Africa, the COMESA Climate-Smart Agriculture Partnership has been actively working with governments in Botswana, Kenya, Namibia, Tanzania, and Uganda to develop Country CSA Programs in each country. The Programs were co-designed by two ministries from Environment and Agriculture in each country as frameworks for scaling-up climate smart agriculture. They were developed to synergize national agriculture investment plans (NAIPs) and agricultural sector programs with the national climate change strategies and action plans, as well as to explore policy options, innovative approaches and opportunities to enhance integration of CSA in national development plans, agricultural policies and NAIPs. Key stakeholders from COMESA-led CSA initiatives have agreed to work with the Alliance to develop an integrated approach to grassroots program design and implementation.

Financing CSA in Africa

Financing is an important area of development. There is now a need to operationalize CSA financing mechanisms that promote the mainstreaming of CSA in agricultural policy and practice. As lead sponsor for the Alliance, NEPAD is proposing a financing mechanism with consultations from PricewaterhouseCoopers around:

1. Design of investment frameworks for climate-smart agriculture in Africa, based on existing planning and policy processes.
2. Design of a funding mechanism for the NEPAD-International Non-Governmental Organisation's Alliance on CSA (NEPAD-iNGO Alliance): summary of the business case for the NEPAD-iNGO Alliance; and proposed design of a results-based funding mechanism for iNGOs and civil society along with the monitoring system for this mechanism.
3. Development of a private sector engagement and financing strategy incorporating a review of the current landscape of initiatives and programmes within Africa. This strategy engages the private sector in climate-smart agriculture technology and provides a proposal for how the financing mechanism should be designed to attract private finance.

Next steps

The progress achieved since the public launch, including the partnerships developed with 8 African countries, demonstrates the strong interest among stakeholders to make a uniquely African approach to Climate Smart Agriculture a reality for millions of small-holder farmers. The Alliance is building partnerships and programs for implementation within national-level planning processes in which African governments are key partners. Concept notes are being developed for Alliance activities in support of the national processes. Financing opportunities will be developed to fit national processes and priorities. Linking together the financial opportunities with on-the-ground programming is a major focus moving forward. And then transparently monitor and evaluate program progress and effectiveness. Ultimately, this work will succeed if the needs and priorities of small-holder farmers are realized and food security and income are improved.

Read more: Climate-smart farming gets a boost at the UN Climate Summit - September 2014: <http://bit.ly/1RKGf2t>

Evan Girvetz is a Senior Scientist with the International Center for Tropical Agriculture and an affiliate Assistant Professor at the University of Washington.

Chris Armitage is a business development advisor for Food Security & Climate Change at World Vision Australia.

How Significant is COP21 for Africa's Women and other Vulnerable Groups?

“Climate change affects us all, but it does not affect us all equally.” UN Secretary General Ban Ki Moon

By Mary Nyasimi

Women in Africa who derive their livelihoods majorly from natural resources are eagerly awaiting for the Paris COP21 decision. Their leaders who are in Paris till December 11, 2015 are negotiating for a climate agreement that is favorable to the continent, more specially to women. Will the present and future women benefit from these ongoing negotiations?

From northern Africa, where the accelerating Sahara desert is diminishing livelihoods options, to Central where forests resources are declining, to eastern and Southern Africa, where crops and livestock are dying out, women are hopeful that universal and binding COP21 agreement will open up new avenues for them to tap into as they deal with the rapidly changing climate.

In a side event organized by the African Union Commission (AUC), the African Development Bank (AfDB), the United Nations Economic Commission for Africa (UNECA) and the New Partnership for Africa's Development (NEPAD) Planning and Coordinating Agency, panelists and delegates deliberated on the topic 'Gender, Climate Change and Sustainable Development in Africa: Challenges and Opportunities post 2015 agreements'.

The event moderator Sam Ogallah, Programme Manager at the Pan African Climate Justice Alliance (PACJA), a civil society organization, reported that climate change affects everyone in Africa's societies including women, men, people with disabilities and the idea of treating gender as a footnote on the text should be stopped. Instead, gender should be central in the COP21 agreement and later operationalized into a set of appropriate policies by African countries. This was strengthened by Winfred Lichuma, Chairperson, National Gender and Equality Commission, Kenya, who noted that drafting of the COP21 agreement must be written through a gender lens and gender desegregation is a missing link in the current draft agreement.

Linking COP21 decision to the Sustainable Development Goals (SDG) was emphasized by Maria Phiri, Gender and Climate Change Expert, Common Market for Eastern and Southern Africa (COMESA). Ms. Phiri stressed that climate change in Africa is about human development and therefore COP21 agreement must provide a gender responsive development platform that targets all stakeholders, particularly women and the youth for sustainable economic growth. To demonstrate how gender affects different groups of people at national levels, Ms. Judith Kamoto, Head of Forestry Department, Lilongwe University of Agriculture and Natural Resources (LUANAR), described Malawi's experience on mainstreaming



L-R: Judith Kamoto, Head, Forestry Department, Lilongwe University of Agriculture and Natural Resources; Emma Bowa, Kenya Programme and Advocacy Manager, CARE International; Sam Ogallah, Programme Manager, Pan African Climate Justice Alliance; Winfred Lichuma, Chairperson, National Gender and Equality Commission (NGEC), Kenya; Maria Phiri, Gender and Climate Change Expert, Common Market for Eastern and Southern Africa (COMESA).

gender in climate actions in the forestry sector. Ms. Kamoto reported various constraints women face in Malawi, including lack of access to land and other livelihood resources, lack of decision-making and participation in community governance on forests.

In conclusion, Emma Bowa, Programme and Advocacy Manager, CARE International, stressed on critical elements that Africa would like the Paris agreement to include and these are:

- Research – explore, analyse and identify who is vulnerable to climate change and how they experience its impacts, adaptation and mitigation strategies that they integrate into their livelihood strategies

- Recognise vulnerable people as non-homogeneous that have a wealth of knowledge and are active agents of change and adaptation
- Strengthen capacity/technology and empowerment for men, women and the youth to adapt in different and complementary sustainable ways
- Resources to support gendered adaptation to the impacts of climate change at all levels

Additional reading:

Where women decide: faster adaptation, more resilience:

<http://bit.ly/20lrU63>

Tackle gender gaps to improve food security, say researchers:

<http://bit.ly/1SFpIY7>

Mary Nyasimi is a policy and gender policy specialist with CCAFS East Africa

Climate proofing Uganda's agriculture sector

A look at scenario guided review of Uganda's Agriculture Sector Strategic Plan.

By John Francis Okiror

Although agriculture is the mainstay of Uganda's economy, the sector has been facing many challenges. Drought and pest epidemics are among the top climate related risks facing the sector. Other challenges include poor farming practices, low value addition to agricultural produce, limited market access and weak implementation of agricultural laws and policies.

In order to enhance readiness to address risks and challenges to the sector, the Uganda government through the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) is working with a number of partners— among them CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) researchers— to mainstream climate change into national agriculture plans and agriculture into climate change policy. The Agriculture Sector Strategic Plan (ASSP) is a five-year strategy which defines the priorities and interventions to be implemented for the period 2015/16 to 2019/20.

Research and development partners together with MAAIF met on 3rd and 4th November 2015 in Kampala to review, with a climate lens, the draft ASSP. The two day workshop raised awareness on the ASSP, and provided a platform for non-state actors to contribute and undertake a scenario-guided review of the ASSP. Researchers from the CCAFS project on Policy Action for Climate Change Adaptation (PACCA) which is led by the International Institute for Tropical Agriculture (IITA) participated in the meeting. Other players included Uganda National Farmers Federation (UNFFE), Agri-Pro Focus,

Participatory Ecological Land Use Management (PELUM), Oxford University and Environment Management for Livelihood Improvement (EMLI).

Scenario guided policy review

The PACCA team with support from Lucas Rutting, a scenario and policy researcher at Oxford University, facilitated the meeting. While introducing Uganda scenarios to participants, Rutting said scenarios are not strategies but a tool for testing strategies.

“Scenarios can be used to explore different directions of change in climate, markets, governance and other key factors,” Rutting said.

Through scenario testing, it is envisioned that the ASSP will be more robust in the face of future uncertainty, taking into account both climate change and socio-economic developments.

The ASSP review workshop process

Participants were divided into four groups based on Uganda scenarios, which had been down-scaled to the local level during a previous workshop in February 2015.

On day one, participants were required to extend Uganda scenarios with climate information. The Intergovernmental Panel on Climate Change (IPCC) climate projections for East



The agriculture sector, dominated by smallholder farmers, contributes up to 40% of Uganda's total GDP.

Africa and the climate proofing questionnaire derived from a CARE International toolkit were provided. With the help of a group facilitator, participants went through the checklist to ensure that every aspect was addressed in the scenario narrative.

On day two, participants analyzed and reviewed the ASSP using the Uganda scenarios extended with climate information. The document was first subjected to a broad review; participants scrutinized the overall targets and objectives to ascertain whether they were likely to be achieved in their particular scenario.

Looking at the different socio-economic scenarios described, participants were tasked to match the proposed interventions in the ASSP and propose recommendations to avert the negative consequences associated with the projected scenario. Then, participants scrutinized the entire document to ascertain what had to be improved, changed or added to make it work in their particular scenario. Recommendations were recorded and presented in plenary. Moving forward, they will be incorporated into the revised ASSP projected to be more

robust in the face of future socio-economic development, climate change and the complex interactions between them.

About PACCA

The PACCA project seeks to inform and link policies and institutions from national to local level for the development and adoption of climate-resilient food systems in Uganda and Tanzania. The group is collaborating with relevant ministries and departments, national research institutions and other non-state agencies involved in climate change work in Uganda and Tanzania.

Learn more about PACCA's scenarios work:

Project takes action for climate responsive policies in East Africa:
<http://bit.ly/1Saib3e>

Scenario guided policy planning makes headway in Tanzania:
<http://bit.ly/1SaieMt>

John Francis Okiror is a Communications Intern with the International Institute for Tropical Agriculture. He supports communications for the IITA led PACCA project.

Blog edited by Vivian Atakos, Communications Specialist - CCAFS East Africa.

Steps towards Nationally Appropriate Mitigation Actions for Kenya's dairy sector

Stakeholders in the Kenyan dairy sector are in the process of formulating Nationally Appropriate Mitigation Actions (NAMA) to reduce greenhouse gas emissions.

By Susan Onyango

Dairy is a major activity in Kenya's agricultural sector and a source of livelihood to some 500,000 people engaged through the value chain. The industry engages one million smallholder farmers who account for 80% of milk produced in Kenya, with large-scale farming accounting for the remaining 20%.

Worldwide the livestock sector is responsible for 14% of all human induced greenhouse gas emission. As part of an agreement under the United Nations Framework Convention on Climate Change, developing countries may undertake Nationally Appropriate Mitigation Actions (NAMAs) to reduce greenhouse gas emissions. These NAMAs are prepared under the umbrella of a national governmental initiative, in the context of sustainable development.

Reducing greenhouse gas emissions through NAMAs

Within the framework of the National Climate Change Action Plan, the Government of Kenya is developing NAMAs in the agricultural sector to support climate-smart agriculture, i.e. low-emission, climate resilient and productivity-increasing agricultural investments. The intention is to submit the proposed NAMAs for support by international climate finance..

A Nationally Appropriate Mitigation Action in Kenya's dairy sector is necessary for the development of approaches to improve productivity and contribute to green economic growth through reduced greenhouse gas emissions and climate resilience benefits.

The Ministry of Agriculture, Livestock and Fisheries, in coordination with the Ministry of Environment, Water and Natural Resources, is currently developing the NAMA with participation of numerous players in the dairy industry.

Stakeholders meet

The Kenya Dairy Board, together with the Kenyan Ministry of Agriculture, Livestock and Fisheries, World Agroforestry Centre, the CGIAR Research Program on Climate Change and Food Security (CCAFS), FAO and UNIQUE forestry and land use, recently convened stakeholders at a workshop to initiate the development of a NAMA for the country's dairy sector.

The workshop was intended to identify existing value chain actors and supporting institutions key in the development of a NAMA for Kenya's dairy sector, to sensitize stakeholders and create awareness on a dairy NAMAs, and to outline steps towards the development of a NAMA for Kenya's dairy sector.



Rose Koech, milking a cow at her farm in Kembu, Bomet County in Kenya. She grows fodder trees, shrubs and grass for dairy cattle.

In a speech read on his behalf, the Principal Secretary in the State Department of Livestock, Prof. Fred Segor, outlined challenges affecting the dairy sector. These include low quality animal genetics, insufficient extension services, inadequate and poor quality feeds, high cost of inputs, lack of certified inputs, land tenure, inadequate investments, effects of climate change, among others.

He added that to address these challenges, the government has put in place policies and strategies to develop both legal and institutional frameworks. These include the dairy policy and bill, the Dairy Master Plan and Implementation Strategy, the Agricultural Policy 2015, the revised Livestock Policy and the Veterinary policy.

All these efforts are geared towards increased productivity from the dairy sector, and one of the greatest challenges that will hinder the achievement of this will be climate change effects. This therefore calls for the design and implementation of climate-smart policies and strategies.

Next steps

During the workshop, participants identified interventions along the value chain that can bring transformational change covering input suppliers, farmers, processors and producer organizations. Following the consultations, further investigations will be made to confirm interventions to include in the dairy NAMA.

A structured engagement between the national and country government, the private sector, dairy cooperatives and processors, development partners, research institutions, training institutions and farmers will be critical in ensuring there is increased productivity and profitability from the dairy sector through a low carbon and climate resilient pathway.

Kenya's Intended Nationally Determined Contribution (INDC):
<http://bit.ly/1MrclGR>

Susan Onyango is the communications specialist for climate change for the World Agroforestry Centre and is based at the headquarters in Nairobi, Kenya.

Enhancing readiness to address climate shocks in Africa

Five African governments develop climate-smart agriculture country programs guided by a number of experts including CCAFS researchers.

By Tabitha Muchaba and Todd Rosenstock

Africa is the continent which is least responsible for the global accumulation of greenhouse gases (GHG). But much of the continent, however, is already suffering from the negative impacts of climate change. Reports by the Intergovernmental Panel on Climate Change (IPCC), have highlighted that climate change may reduce crop yields in most parts of Africa by 10-20 percent. By 2050, not only will climate change define the possible farming systems in Sub-Saharan Africa, international policies and institutional changes will determine the socioeconomic factors affecting it.

Supporting African countries in planning responses and integrating climate resilience into their agricultural development plans will help enhance readiness to address climate related shocks. Subsequently, starting November 2014 a global research alliance supported five countries in Eastern and Southern Africa in preparing country-specific climate-smart agriculture frameworks programs (CSA-FPs). The alliance includes the CGIAR Research Program on Climate Change, Agriculture and Food Security (CAAFS) East Africa program, the Common Market for Eastern and Southern Africa (COMESA), the East African community (EAC), the Southern African Development Community (SADC) and the New Partnership for Africa's Development (NEPAD Climate Change Fund).

The purpose of this partnership was to enable the five countries Kenya, Uganda, Tanzania, Botswana and Namibia to adopt a holistic approach to agricultural sector transformation, aiming for multiple benefits in a changing climate. This process brought together a team of experts including

scientists from the International Livestock Research Institute (ILRI), the Center for International Forestry Research (CIFOR) and the World Agroforestry Centre (ICRAF) to provide technical input to the country CSA-FPs. Participants included representatives from relevant government ministries and departments, civil society organizations (CSOs), private sector and academia.

CSA Country Programs

These programs synergize National Agriculture Investment Plans (NAIPs) and agricultural sector programs with their respective National Climate Change Strategies and Action Plans to deliver on multiple benefits: food productivity and incomes; building resilience in the agriculture sector and the adaptive capacity of the farmers; and contributing to reducing or removal of greenhouse gas emissions from the agriculture and land use sector thus contributing to the global public good.

In each of the five countries the CSA-FPs was developed through a consultative four step procedure. Technical working sessions enabled stocktaking of the sector's programs, strategies and performance from a historical perspective as well as an analysis of options for agricultural sector growth in a changing climate. Thereafter, consultative sessions were carried out with interested groups followed by national stakeholder validation workshops where comments from stakeholders were discussed and incorporated. The final stage entailed identification of resource mobilization opportunities to support implementation of the programs.



Supporting African countries to plan responses and integrate climate change resilience into their agricultural development plans will help enhance readiness to address the climate related shocks.

Of the five countries, Kenya and Tanzania have gone further. Kenya integrated adaptation and mitigation components borrowed from its CSA-FP into a policy document—Intended Nationally Determined Contributions—submitted to the United Nations Framework Convention on Climate Change (UNFCCC) in June 2015. Tanzania, on the other hand, is using the plan developed as a foundational document to support a proposal to transform agriculture in the country to the Green Climate Fund (GCF).

Although CSA-FPs are vital for scaling out CSA and show government commitment towards it, innovative partnerships are equally important.

Partnerships for scaling out CSA

An ongoing project by the World Agroforestry Center (ICRAF) and the International Center for Tropical Agriculture (CIAT) is formalizing new partnerships with key African institutions aimed at supporting the scaling up - and out - of a CSA approach for programs ranging from sub-national to continental levels. Such institutions include: African Union New Partnership for Africa's Development (AU-NEPAD), Alliance for CSA in Africa (ACSAA), Regional Economic Communities, Food and Agriculture Organisation of the United Nations (FAO) and national governments. This initiative helps partners to use science-based approaches for targeting, prioritizing and scaling CSA through an integrated approach from situation analysis through monitoring and evaluation called 'CSA Plan'. The data, tools, and lessons earned will be built into an open source platform that stands to become the clearing house

for CSA decision support. The ultimate aim is to increase CSA adoption by farmers and return on CSA investments by donors.

The way forward

Transformation to CSA requires a systematic approach, addressing the full scale of the climate challenge and agricultural development. CSA is founded on the principles of integrated landscape management and is driven by the ultimate goal of ensuring resilience as an integrated aspect of inclusive green growth, productivity and sustainability in the face of a changing climate. The new agricultural production systems should not only be more productive and efficient, but also more stable and resilient to short, medium and long-term shocks and risks associated with climate change and climate variability. Such a transformation would entail significant changes in the manner in which soil nutrients, water, land and genetic resources for both crops and livestock are managed and utilized. The CSA Programs are a step in that direction and are aligned with the AU/NEPAD Comprehensive Agriculture Development Programme (CAADP).

Read more: Kenya integrates CSA into its Intended Nationally Determined Contribution: <http://bit.ly/23qkgeL>

Tabitha Muchaba is a Research Assistant at the CCAFS East Africa regional program, based at the International Livestock Research Institute (ILRI). Todd Rosenstock is an Environmental Scientist with the World Agroforestry Centre (ICRAF).

Story edited by Vivian Atakos, Communication Specialist - CCAFS East Africa.

Introducing climate-smart agriculture tools for Africa

Read about the range of tools available to support a transition to CSA in Africa.

By Solomon Kilungu, Vivian Atakos and Catherine Mungai

There is a global push towards climate-smart agriculture (CSA) because it offers answers to issues of food security, poverty alleviation and climate change mitigation and adaptation. To support a transition to CSA in Africa, researchers and development practitioners have developed a range of tools and options for effective climate adaptation and mitigation in agriculture in different environments and at diverse scales.

On 13th October 2015, the Climate and Agriculture Network for Africa (CANA) brought together 146 stakeholders among them policy makers, development practitioners and researchers in an interactive forum to share innovative tools for CSA. During the one and half hour long online event, four CSA tools were discussed based on the innovative work of several CGIAR centers whose researchers are working under the Climate Change, Agriculture and Food Security (CCAFS) Program. A fifth tool was included based on work by the Adaptation Learning Program (ALP) of CARE International. These organizations, among many others, are prioritizing, implementing and testing CSA technologies and practices in Africa and beyond.

This highly interactive webinar saw panelists give a 10 minute presentation of their tools followed by a question and answer session. This allowed participants to seek further clarification based on the presentations.

The CSA Compendium

This is a quantitative and systematic approach developed by researchers from the World Agroforestry Centre (ICRAF) to understand what agricultural practice works where and for what. It tries to help stakeholders address the fundamental question of what is and what is not CSA in an objective and rigorous way. The CSA Compendium tool helps implementers in identifying practices that will achieve maximum impact in a specific region.

“CSA is context specific and subject to the priorities of farmers, communities and governments where it is being implemented. Therefore, we need to understand its utility for development,” said Todd Rossenstock, an Environmental Scientist at ICRAF.

CSA Prioritization Framework

This tool was designed by researchers based at the International Center for Tropical Agriculture (CIAT) to help direct investments towards CSA. The tool targets national and sub national decision makers and incorporates a set of filters to help them evaluate CSA options. Key characteristics of this tool include: flexibility in addressing needs of different users; stakeholder driven by embedding filters within a participatory process; simplicity in that it requires very little time to use and is affordable; and finally is linkable to other existing tools.

“Prioritization does not imply one output but different portfolios based on intended application. Beneficiaries are a key output from this process,” said Caitlin Corner-Dolloff a Climate Change Adaptation Specialist at CIAT.

Climate Smart Agriculture Rapid Appraisal (CSA-RA)

The CSA-RA tool was developed by researchers at CIAT to inform CSA outscaling and implementation. The tool combines socio-economic and biophysical realities across scales in order to prioritize, implement and out-scale CSA. Further to this, it integrates gender principles to ensure equitable uptake of CSA technologies and practices.

“If you are to prioritize CSA, you need to identify the key indicators that farmers consider when adopting a practice. Subsequently, you ask the farmers to rank those indicators and you weigh them,” said Caroline Mwongera, a Farming Systems & Climate Change Post-Doctoral Scientist at CIAT working under a CCAFS project.

Participatory scenario planning (PSP)

This is a tool was developed by the Adaptation Learning Program of CARE International, for collective sharing and interpretation of climate forecasts. PSP is conducted as soon as a seasonal climate forecast is available from the meteorological services, meaning it occurs as many times in the year as there are rainy seasons in that particular area.

“You cannot talk about climate resilience and climate-smart if you are not factoring climate information into your decision making and planning process, and this is especially because of new risks and challenges that communities are facing,” said Maureen Ambani, a Climate Communications Advisor for the ALP, during the webinar.

Target CSA

This is a decision support tool developed by scientists at the Center for International Forestry Research (CIFOR) to target CSA practices. It is used on a national and regional scale to identify regions that show high vulnerability to climate change and simultaneously show characteristics that make it feasible to implement CSA activities.

“Target CSA combines two concepts, multidimensional vulnerability and climate-smart agriculture concepts. It works with vulnerability indicators on the one hand and with proxy data that refers to certain climate-smart practices that are included in the targeting process,” said Patric Brandt, a PhD student based at CIFOR.



Farmers in Africa need to make the bold move to climate-smart in order for them to feed the increasing population under a changing climate.

Summary

Generally, there was a huge interest in the topic CSA tools for Africa. A total of 470 people signed up for the webinar with slightly over one third attending the event. The PSP tool has similarities in approach with the CSA-RA because both tools emphasize participatory approaches at community and district levels. The TargetCSA , CSA-PF and CSA Compendium tools target policy makers at national and regional levels with regards to prioritization. All tools present opportunities for collaborations in the out scaling of CSA in Africa and the world at large.

Access the webinar recording here: <http://bit.ly/1ZPPRCe>

Solomon Kilungu, Vivian Atakos and Catherine Mungai all work for CCAFS East Africa.

Prioritizing climate-smart agriculture: what criteria do farmers use?

Participatory research bridging the gap between farmer knowledge of climate-smart agriculture and implementation on the ground.

By Kelvin Shikuku, Caroline Mwongera and Leigh Winowiecki

The International Center for Tropical Agriculture (CIAT), under a project funded by the International Fund for Agricultural Development (IFAD) titled, ‘Increasing food security and farming systems resilience to climate change through wide scale adoption of CSA practices’, has recently applied a participatory research approach to understand the indicators farmers use to prioritize CSA practices on their farms.

Focusing on northern Uganda and the Southern Agricultural Growth Corridor of Tanzania (SAGCOT), there is data showing a gap between farmers’ knowledge of climate-smart agriculture and implementation on the ground.

The participatory research approach provided a characterization, by farmers, of the different agro-ecological zones in their districts. This characterization then helped to identify the practices perceived to be most relevant in the different zones, which ones the farmers find relatively easy to implement, and which ones will require policy efforts to address barriers to uptake. Furthermore, incorporating a gender lens, whereby separate groups of men and women discuss their zones, helped to understand differences and similarities in prioritization and perceived constraints.

The awareness-use gap can be interpreted in two important ways. The first is, there is a difference between awareness exposure – e.g., a farmer having heard about a practice – and knowledge exposure – e.g., farmers having the technical knowhow.

In making a decision about whether or not to undertake a specific CSA practice, farmers reported that they consider their knowledge of and skills in actual implementation of the practice. Therefore, moving beyond just making farmers aware of CSA to actually training them on how to use the practices might increase uptake. Second, besides knowledge, yield, income, costs, availability of labour, availability of equipment, size of the farm, time, and availability of inputs are equally important indicators that farmers use to prioritize CSA.

The project aims to relate biophysical realities from land health assessments with farmers’ perceptions in order to develop participatory prioritization of CSA practices. For example, in the SAGCOT, farmers who live in erosion-prone areas identify construction of bunds and ridges as a relevant practice for their zone. However, due to the limited size of land, they also report that construction of bunds reduce the amount of land available for cultivation.

So what is the way forward to unlocking the potential of CSA? Creating a conducive environment for CSA is imperative and will largely depend on how well farmers and the specific contexts in which they work are understood.

Addressing the constraints identified by farmers is key and successful adoption will further require quantifying the potential and actual impacts of CSA on the indicators identified by farmers such as yields, income, labour, and cost of production.



A farmer shows kernels from her corn harvest near Dodoma, Tanzania, where farmers are experiencing the harsh effects of climate change.

As the next steps, therefore, CIAT in collaboration with the International Institute of Tropical Agriculture (IITA), is using the findings of the participatory research to

- **design demonstration plots for the most relevant practices identified by men and women farmers from diverse agro-ecologies,**
- **design household surveys to collect quantitative data to assess the impacts of CSA on the important indicators identified by farmers as well as conduct rigorous analysis of the determinants of uptake of CSA practices and**
- **design randomized control trials (RCTs) to examine the role of social learning and incentive schemes to increase knowledge spillover on CSA while quantifying the trade-offs involved in adoption.**

Together, this information will improve farmers' knowledge on CSA and provide insights on overcoming barriers to implementation of CSA practices.

Read: Policy action for climate change adaptation in East Africa: <http://bit.ly/1KBTIM9>,

Kelvin Shikuku is a PhD Student in Development Economics at Wageningen and CIAT. Caroline Mwongera is a Postdoctoral Scientist in Agricultural and Climate Change at CIAT. Leigh Winowiecki is a Soil Scientist at CIAT.

This blog was edited by Marie Quinney, a visiting research at CIAT.

Information and communication innovations in East Africa

Information and communication technologies offer an opportunity to bridge gaps in the reach of climate information services.

By Mea Halperin

In recent years, Tanzania and Malawi have seen changes to their agricultural potential. Tanzania, previously considered the breadbasket of Rhodesia, has experienced reductions in coffee and maize as a result of droughts, flooding, and overall erratic rainfall. Malawi also saw decreases in crop yields due to changes in rainfall patterns and a lack of access to critical inputs like fertilizer. As climate projections suggest that this trend toward extreme events will likely continue, people at the local, national, and international levels are looking for effective ways to improve the region's food security. The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), along with the Global Framework for Climate Services (GFCS) Adaptation Programme in Africa, is working with local agencies to find ways to reach farmers and pastoralists with the climate services they need.

Among the communication channels that individuals and organizations are employing to provide services that help farmers adapt to climate variability, information and communications technologies (ICTs) are emerging as among the most effective – particularly for weather forecasts and monitoring information within the growing season. Surveys show that, depending on the region, between 50% and 95% of people in Tanzania own mobile phones, and 50% to 60% of people have access to radios. In Malawi, although fewer own mobile phones, approximately 75% of the population has access, and over 50% own radios.

This method for immediate climate information delivery has great potential for allowing farmers to make informed decisions for the short- and long-term. The Tanzania Meteorological Agency has sent climate information through the postal service. But for shorter-term forecasts such as 10-day precipitation, by the time farmers received it, there would not be enough time to make decisions.

Several communication issues challenge the effective communication of information between meteorological services and farmers. Literacy rates and language barriers mean that not everyone can read written advisories. Farmers also have a tendency to place their trust in local advisors or someone within the community, rather than with agents from outside organizations.

ICTs address these challenges and allow for information to reach individuals at different levels in a variety of innovative ways. Community radio shows and clubs allow farmers to tune in to programs with agrometeorology experts and trained local agents, and to call in with questions and provide feedback. Meteorology agencies, cell phone providers, and community radio partners can also provide climate and weather advisory hotlines and voice message services directly to an individual's cell phone. In addition to updates on precipitation and temperature, these advisories can include advice on types of seeds to buy and plant, and locations of the nearest markets to find other agricultural inputs.



A farmer from a village outside of Dodoma, Tanzania. Modern communication tools have the potential to bring tailored information to rural farmers.

From workshops with local stakeholders in Malawi and Tanzania, CCAFS, the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), and Farm Radio International have determined that these ICT-based services would be a welcome and effective communication strategy within farming communities. Where they have already been implemented, they are the preferred method of information delivery for many farmers. The partners within the GFCS Adaptation Program are working to bring in additional partners and resources to scale up ICT services in an effective and economically feasible way.

Read more:

Reaching farmers with climate services in Malawi and Tanzania:
<http://bit.ly/1IQTvOz>

Farmer-responsive climate services built in Tanzania and Malawi:
<http://bit.ly/1QBH722>

Photo story: Farmers in Tanzania use climate information to cope with variability: <http://bit.ly/23sqL0S>

Mea Halperin, Communications consultant for CCAFS flagship 2.

Tailored success in Nyando: Wycliffe's fresh start and success in farming

Amid the all-too-common tales of failing crops, erratic planting seasons and extreme weather events, this young farmer shares his success story.

By Solomon Kilungu

“Dear Optimist, Pessimist, and Realist. While you guys were busy arguing over the glass of water, I drank it. Sincerely, the Opportunist.”

This popular quote of unknown authorship encourages some people to seize available opportunities around them. A young farmer in Nyando is doing precisely that. Wycliffe Otieno is reaping a good harvest after effective adoption of climate-smart technologies on his three-quarter acre farm.

Wycliffe has only been a farmer for the last four years, prior to which he worked in the 'Jua Kali sector' (a term used to refer to odd jobs with meagre pay) in Nairobi, Kenya's capital. He has also worked driving a 'Matatu' (one of the in Kenya typical share taxis) in Thika, Central Kenya before making the bold decision to come back home and practice farming instead.

In an interview, the 30 year-old champion farmer shares how he juggled two jobs while studying tailoring and how he finally came back home after finishing this education. He is now a full-time farmer who does tailoring in his spare time. Wycliffe explains: “The amount of money I acquire from farming is enough to sustain my young family, but I also enjoy tailoring so I do it for fun and also make an extra coin from it.” He was not sure about coming home to farm but once he got started and focused on this activity, he realised that he could become a successful farmer.

Climate-smart innovations on his farm

Wycliffe's resolve to work hard has been channeled to his farm. The farm has an array of agronomic practices that guarantee a year-round supply of produce for commercial purposes and household consumption. He has planted 300 pawpaw trees that are intercropped with cowpeas, pigeon peas and cassava. The pawpaw trees earn him 50 USD (Ksh 5000) per month after sale to locals and other vendors who trade in the nearby Sondu market, the trees also provide compost manure for his farm.

The changing climate has affected the type of crops grown in the area, farmers have to switch from traditional crops and pick better adapted crops. Wycliffe is fast on picking up ideas that see him become a better farmer; for example, he stopped growing the maize crop after learning Nyando's climate had changed and is no longer profitable grow maize. He now grows cowpea and pigeon peas and alternates with Sorghum which are better adapted to the type of climate that Nyando is experiencing. Farmers in the area are being encouraged by the Kenya Agriculture and Livestock Research Organization (KALRO) in partnership with CCAFS EA to move to better adapted crops that will see them improve incomes.

Wycliffe attributes his success to the Friends of Katuk Odeyo (FOKO) Community Based Organization (CBO) trainings, experiences shared by other farmers and the availability of



The harvesting season has come and Wycliffe examines the yield on a plant of an improved variety of pigeon peas, which he cultivates on his farm.

farming inputs at a subsidized price: “FOKO has been very resourceful and important for my growth and productivity as a farmer. I have seen a lot of growth in my own knowhow which I could use to improve my farm”.

Sustainable land management

The frequency of droughts, floods and unpredictable rainfall have increased, impacting Nyando’s food security status negatively. Soil erosion is rampant in the two annual rain seasons which has led to the degradation of about 40 percent of the Nyando landscape. He has solved this issue successfully by digging up terraces that reduce the impact of run-off water during the rain season. The terraces are reinforced by Napier grass which is planted along to reduce the effects of speeding water, once matured the grass is used to feed his Dairy cow that produces milk for the family.

On this farm there is no room for wastage of resources, next to the home there is a hand dug pond for water collection (from his roof using well connected pipes). The water collected is used to water tomato and kale plantations that provide food for the young family.

Future plans

“I have reaped so much from farming and I intend to increase my output in the near future, I want to lease land next to the river. With land next to the river, I am assured of an unlimited water supply that will boost my output,” Wycliffe Otieno tells me as he explains what he intends to do with the knowledge he has acquired so far.

After seeing the agronomic benefits of sustainable land management through fruit trees and terracing on his farm, Wycliffe has started a mango tree nursery to help increase the amount of trees on his farm and also make some money from the trade within his community. He has been selling the seedlings to fellow farmers, the mango tree seedlings retail at 0.5 USD for normal and 1.5 USD for the grafted seedlings.

CCAFS East Africa is working with climate-smart champion farmers like Wycliffe Otieno to improve the livelihoods and incomes of smallholders through climate-smart agriculture.

Read more about climate-smart agriculture practices here: <http://bit.ly/1JB8d84>

Solomon Kilungu is a Communication Assistant at the CCAFS East Africa regional program.

Out & About



1. CCAFS East Africa Gender and Policy specialist Mary Nyasimi at COP21 Africa pavilion side event: Scaling up innovative approaches to climate-smart agriculture in Africa. 2. Participants who attended a meeting on strengthening regional capacity for climate services in Africa held during the fifth conference on climate change and development in Africa (CCDA-V) in Victoria Falls, Zimbabwe. 3. CCAFS East Africa former Program Leader James Kinyangi with one of the participants at the COP21 Africa Pavilion side event: Taking forward the implementation of national climate-smart agriculture programmes in East Africa. 4. James Kinyangi receives his farewell gift from the CCAFS East Africa team.

In our diary

February

Agricultural Model Intercomparison and Improvement Project (AgMIP) meeting
Venue: ILRI Campus, Nairobi, Kenya

1-4
2016

February

Addis Ababa African Symposium on Climate Change Adaptation (ASCCA 2016)
Venue: Addis Ababa, Ethiopia

21-23
2016

March

Africa Regional Workshop on Use of the 2006 IPCC Guidelines for National GHG Inventories
Venue: Maseru, Lesotho

14-18
2016

March

Climate information services workshop
Venue: Kigali, Rwanda

2016

May

Bonn Climate Change Conference
Venue: Bonn, Germany

16-26
2016

June

7th Africa Agriculture Science Week (AASW) and FARA general assembly
Venue: Kigali, Rwanda

13-16
2016

CCAFS EA in the media

INTER PRESS SERVICE News Agency

Uganda, Tanzania Need Gender Sensitive Climate Policies

By **Walter Mubwa**

This event was moderated by **Sandy Thomas**, Director, Global Panel on Agriculture and Food Systems for Nutrition, and is needed to achieve food and nutrition security in the face of climate change.

Nichel Kye, Vice President and Special Envoy for Climate Change, World Bank, noted that food and nutrition security has throughout the history of the UNFCCC. Attempts to put agriculture and food security on the agenda, she said, are often not the case at the negotiations that were held at COP 17 in Durban and then onwards at COP 18 in Doha. She noted an increase in terms of both solutions and challenges regarding food and nutrition security. She said Africa can lead itself and research and innovation in agricultural value chains, food infrastructure and storage and with increased public-private co said that "we each consider ourselves resilient unless we can provide nutritious food" and she expressed hope for increase global lead to address food and nutrition security.

John Kufuar, former President of Ghana, stated the conversation about nutrition is essentially a conversation about some come easy to the ordinary people." He highlighted that if the food is not nutritious, people may suffer stunting and anemia compromised and contributions to social development will not be optimized. He noted that due to malnutrition African are disadvantage compared with their counterparts in Europe and North America. He highlighted that balanced diets are not a necessity and that "what comes out of the land in Africa must be nutritious." He outlined the need for informed policymakers agricultural supports, food and nutrition security and he called for leaders on the continent to cooperate and show the way

James Kinyangi, Regional Program Leader, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) climate change will cause the cost of staple foods to rise with the consequence being that poor people will eat the quantity that they need. He noted that nutrition security is a significant problem that needs continued focus and dialogue. He said lack of food to political instability as seen in some parts of the Horn of Africa. He highlighted the need for investments in nutrition to be and for improved food infrastructure and storage systems to avoid food loss and waste.

Justine Greenwood, Secretary of State for International Development, UK, said "Finger remains a hidden emergency that is, it" and this message is a significant part of the UK's development work, she highlighted the need to help Africa with nutrition security saying, "a healthy economy needs healthy people" and that investing in nutrition is not just the right thing to do but thing to do. She noted the importance of women in the agricultural sector and that growing women grow it all the way forward. She outlined the emphasis on nutrition in the 2015 Sustainable Development Goals (SDG) and that if not addressed, climate change can undermine progress made in food security but that the changes in some respect also can be harnessed for positive and working with the private sector.

Discussions ensued on providing a focus on food systems, changing mindsets so that people want to be included in policy and working with the private sector.

Women provide 80 percent of Uganda's agricultural labor yet gender issues are not articulated in the country's agriculture and climate change policies, Civilis Gender Monitoring

KAMPALA, Uganda, Nov. 26, 2015 (IPS) — Climate change needs to be at the top of the country's agenda, according to a report examining Uganda's policies. It says the country hasn't paid enough attention to climate change in national development and agriculture plans and the needs to be taken urgent before it's too late.

The Policy Action for Climate Change Adaptation (PACCA) project that seeks to inform and the policies and to influence from the national to the local level for the development and a staples of staple cropland food systems in Uganda says the policies are scattered and need harmonization.

Nations Unies Conférence sur les Changements Climatiques 2015 COP21 PARIS, France

JAMES KINYANGI
Regional Program Leader, CCAFS

James Kinyangi, CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

UNFCCC Climate Change Studio

BBC SWAHILI

BBC Swahili Radio

Kipindi hiki hakipatikani kwa sasa.

Dira Ya Dunia

09/12/2015 GMT

Kipindi cha habari, unalala na mahabari cha kila siku kwa njia ya kutu na mbihi unajua jama Afrika Mashariki

Vipindi vya Redio

- **Habari za mwanam** 09:00 GMT - 10:00 GMT
- **Habari za mwanam** 11:00 GMT - 12:00 GMT
- **Habari za mwanam** 13:00 GMT - 14:00 GMT
- **Habari za mwanam** 15:00 GMT - 16:00 GMT
- **Habari za mwanam** 17:00 GMT - 18:00 GMT
- **Habari za mwanam** 19:00 GMT - 20:00 GMT
- **Habari za mwanam** 21:00 GMT - 22:00 GMT
- **Habari za mwanam** 23:00 GMT - 00:00 GMT

Interview with Regional CCAFS Program Leader James Kinyangi (UNFCCC Climate Change Studio): <http://bit.ly/1IRbBAa>
 Uganda, Tanzania Need Gender Sensitive Climate Change Policies (Inter Press Service): <http://bit.ly/1HqhGhI>
 Dira Ya Dunia (BBC Swahili) : <http://bbc.in/1UpPFHh>
 Africa Pavilion at COP 21 - Highlights for Saturday, 5 December 2015 (IISD): <http://bit.ly/1M0tTEH>

Further Reading

CCAFS Latest Publications

Journal: Terrestrial pyrogenic carbon export to fluvial ecosystems: lessons learned from the White Nile watershed of East Africa: <http://bit.ly/23GwqjW>

Report: Strengthening regional capacity for climate services in Africa, Victoria Falls, Zimbabwe, 27 October 2015: <http://bit.ly/23GwqjW>

Journal: Households and food security: lessons from food secure households in East Africa: <http://bit.ly/1o1XWbe>

Journal: Opportunities and challenges of indigenous biotic weather forecasting among the Borena herders of southern Ethiopia: <http://bit.ly/1PwmVOA>

Working Paper: Impacts of seasonal climate communication strategies on farm management and livelihoods in Wote, Kenya: <http://bit.ly/1KTTbW0>

Working Paper: Integrating indigenous knowledge with scientific seasonal forecasts for climate risk management in Lushoto district in Tanzania: <http://bit.ly/1Hfm4fR>

Report: The role of policy in facilitating adoption of climate smart-agriculture in Uganda: <http://bit.ly/1bo0XMX>

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

Climate and Agriculture Network for Africa: This web-based platform seeks to link scientists with policy makers to address climate change, agriculture and food security issues in Africa. bit.ly/1BHmhG0




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RESEARCH PROGRAM ON
Climate Change,
Agriculture and
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