CCAFS ANNUAL REPORT 2012

Unfolding results: CCAFS research into action

CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)
Led by the International Center for Tropical Agriculture (CIAT)

ICSU International Council for Science

CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CCAFS

CIAT International Center for Tropical Agriculture
Since 1967 / Science to cultivate change

What CCAFS research aims to inform

THEME 1

Adaptation to progressive climate change

- Agricultural and food security strategies that are adapted to climate change promoted by the key development and funding agencies in at least 20 countries
- Improved adaptation policies from local to international level supporting farming communities in at least 20 countries

THEME 2

Adaptation through managing climate risk

- Better climate-informed management by key agencies of food crisis response, post-crisis recovery and food trade and delivery in at least 12 countries
- Enhanced uptake and use of improved climate information products and services in at least 12 countries

THEME 3

Pro-poor climate-change mitigation

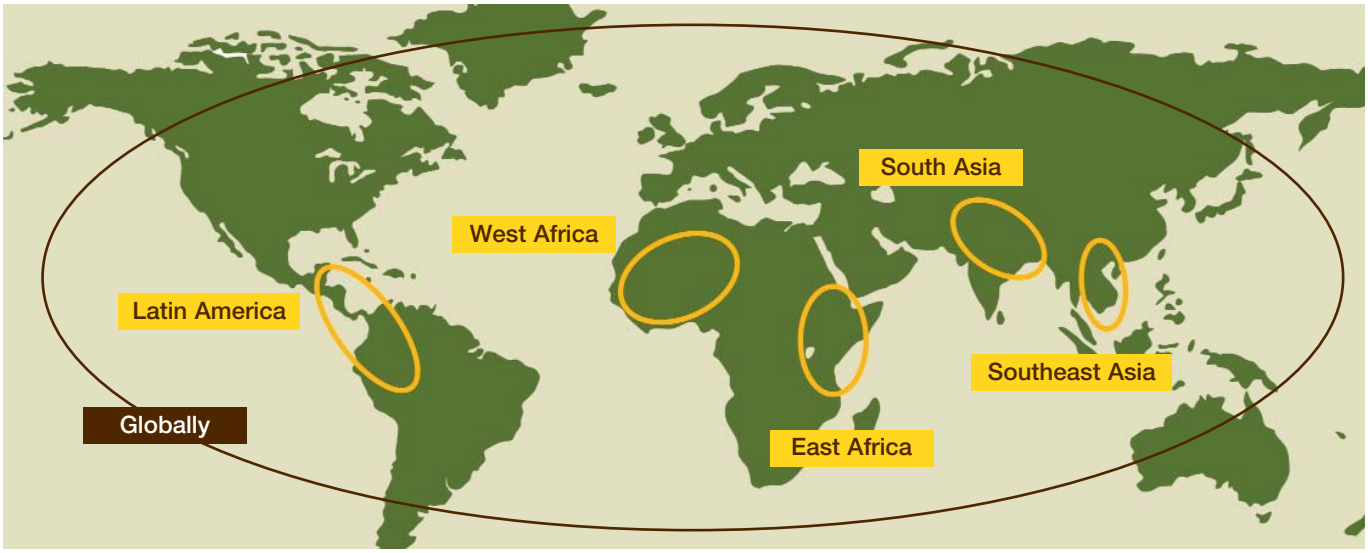
- Improved knowledge about incentives and institutional arrangements for mitigation practices by resource-poor smallholders, project developers and policy makers in at least ten countries
- Key agencies dealing with climate mitigation in at least ten countries promoting technically and economically feasible agricultural mitigation practices

THEME 4

Integration for decision making

- Appropriate adaptation and mitigation strategies mainstreamed into national policies in at least 20 countries, into the development plans of at least five economic areas, and into the key global processes related to food security and climate change
- Improved databases and methods for planning responses to climate change used by national agencies in at least 20 countries and by at least ten key international and regional agencies

Where CCAFS works



CCAFS expands into Southeast Asia and Latin America

After a rigorous selection process, Southeast Asia and Latin America were added to CCAFS's initial regional portfolio – South Asia, East Africa and West Africa. Selection criteria were discussed during 2010 and 2011 and further deliberated on by the Program Management Committee and the Independent Science Panel (ISP). Based on geographical groupings of countries, nine candidate regions were identified. Three groups of stakeholders – the CCAFS Program Management Committee, CCAFS contact points in each of the 15 Centres and members of the global change community (partners, donors and colleagues) external to the CGIAR – were asked to rank the candidate regions against each criterion.

The recommendation that Southeast Asia and Latin America be selected as new CCAFS regions was endorsed by the ISP and the CIAT Board of Trustees (BoT) in late 2011 and activities are now underway in each.

Contents

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Message from the Director General, International Center for Tropical Agriculture (CIAT)

CIAT is proud to be the lead centre of CCAFS. The reform process in the CGIAR represents the most radical institutional change that has occurred in the CGIAR's nearly 50-year history, and CCAFS in its governance and partnership strategies is, I believe, a model of that reform.

CIAT has a rich history of climate-change research, but what CCAFS brings is the opportunity for our scientists to work across the entire CGIAR system and produce products and outcomes on a scale that was not possible in the past. For example, climate-change mitigation in agriculture means working with soils, crops, pastures, livestock, agroforests, forests and policy. Through the reform process we now have teams of scientists working across institutions and building arguably the strongest coalition of scientists in the world working synergistically on mitigation issues in developing country agriculture. Similar arguments can be made for climate-change adaptation and climate risk management.

CCAFS has only been operating for two years – and in that period much attention needed to be paid to building new ways of working, facilitating new partnerships and team work, ensuring data sharing across institutions and developing new administrative systems. Nonetheless, as this annual report attests, CCAFS has been rapidly moving down the impact pathway, with development outcomes reported and scaling-up initiated in many countries.

Ruben G. Echeverría
Director General of CIAT

Message from the Program Director

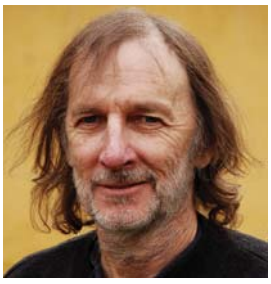
CCAFS' planning processes now involve outcome mapping from local to global levels but, to achieve outcomes, we need more than planning. Ingredients, such as researchers with an outcome orientation, carefully targeted research, partnership development, multi-stakeholder platforms and capacity enhancement are important – as is time, in many cases – and sometimes serendipitous. Thus, at the end of the second year of operation of CCAFS, we are heartened by the number of teams reporting development outcomes or outcomes-in-the-making.

In 2012, we have seen policy advances in climate-change adaptation and mitigation in more than ten countries where research products from CCAFS have been used to inform decision-making processes. CCAFS also works with major development actors in order to get research results to scale. Key actors like the development banks have used CCAFS analyses to guide investment decisions about climate-change adaptation. A ten-year US$50 million programme focused on collecting wild relatives of crops and pre-breeding for climate-change adaptation has used CCAFS results to prioritize investments.

Evidence-based decision making in agriculture and natural resource management starts with evidence from the practices of farmers, fishers and pastoralists. So CCAFS was excited to initiate its concept of 'climate-smart villages' where integrated solutions to climate change are trialled in a participatory manner with local people, but always with an eye to the scaling-up processes that are needed. On these innovation platforms, learning-by-doing is promoted, best practices are distilled and policy challenges and options are identified and discussed. There are currently 22 climate-smart villages concentrated in West Africa, East Africa and South Asia. In these villages, testing technology goes hand-in-hand with strengthening capacity. For example, given the focus on gender, some 1700 women farmers received training on managing climate risks in Bihar in India. Work on banana–coffee intercropping has fed up into shifts in attitudes and policies in Rwanda, Burundi and Uganda. To illustrate the diversity of topics, in other countries we have worked with women and school children to trial climate-smart low-cost greenhouses, assessed mobile-phone farm advisories for climate risk management and built the capacity of 3000 farmers for conservation agriculture, amongst many other activities.

Scientists and partners in CCAFS are defining and working towards new values in the CGIAR: public access to data, gender mainstreamed in all activities and attention to partnerships. To mention just one activity in each of these spheres, household survey results released on the internet prior to any papers being published by ourselves have been downloaded nearly 2000 times in 2012. Our working hypothesis is that this will result in many useful publications on our CCAFS sites, far in excess of the number we would be able to produce alone. In 2012 the United Nations Food and Agriculture Organization (FAO) and CCAFS published guidelines for gender-differentiated research on climate change and agriculture, thus providing the basic tools for mainstreaming gender work in all CCAFS activities. And in 2012, the draft results from the partnership survey conducted by an independent evaluator found that of 193 partners who responded to the survey, 81% were satisfied with their partnership.

Working on CCAFS is a privilege and responsibility. It is an exciting window for producing excellent science that has impact.



Bruce Campbell
Program Director

Combined efforts – climate-smart outcomes

Embedding agriculture firmly in climate-change policies – and climate change in agricultural policies – involves working with many players, from farmers to global bodies, across the globe. CCAFS brings together efforts across a wide range of disciplines. From coordinated action springs innovation and climate-smart outcomes that point the way to transforming the global food system.

"Building resilience to climate change and establishing food security means moving away from a narrow focus on crop varieties and agricultural technologies."
Bruce Campbell, CCAFS Program Director

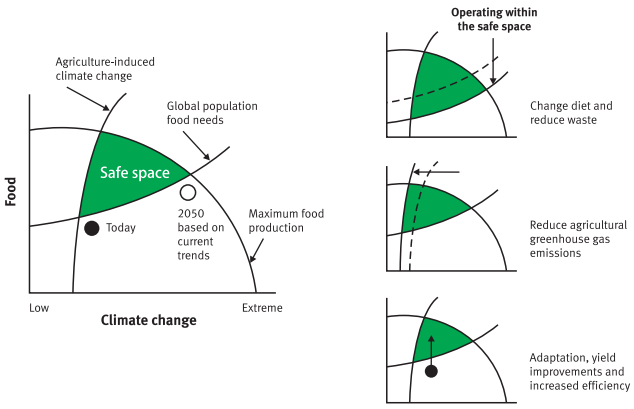
Recommendations of the Commission on Sustainable Agriculture and Climate Change sway game plans

All doctors know that analysing symptoms and diagnosing problems is the first step to a healthy patient. The need to adapt to and mitigate climate change to defend the health of the planet is clear. But the starting point has to be scientific evidence. The report *Achieving Food Security in the Face of Climate Change* was released in 2012 by the Commission on Sustainable Agriculture and Climate Change, at the conference Planet Under Pressure, in London in March. The Commission was convened by CCAFS in early 2011, with additional support from the Global Donor Platform for Rural Development. The report sets out the challenges and recommends ways to tackle them.

"Global policy dialogues need solid scientific evidence."
Dr Carlos Nobre, Commissioner

Once the report was launched, the Commissioners, the Secretariat and CCAFS leaders went to work to sway world leaders to consider the recommendations. Commissioners presented the evidence at major global events, giving examples of how food security, sustainable agriculture and climate change are inseparable.

"I am pleased that our seven policy recommendations were taken up through the Agriculture and Rural Development Day 2012 ahead of the Rio+20 summit."
Sir John Beddington, Commission Chair



Safe operating space for interconnected food and climate systems. Developed by the Commission on Sustainable Agriculture and Climate Change in collaboration with University of Minnesota, Global Landscapes Initiative. An animated version of this diagram can be accessed at http://bit.ly/SafeSpaceClimateFood

MAKING A START ON NATIONALLY APPROPRIATE MITIGATION ACTIONS

As agriculture is a major source of greenhouse gases, the potential for reducing emissions from agriculture to mitigate climate change is huge. Much of the potential is in developing countries. Nationally appropriate mitigation actions (NAMAs) are a new United Nations Framework Convention on Climate Change (UNFCCC) mechanism for developing countries to establish mitigation plans and actions.

The rules for NAMAs are not yet agreed, but regardless of how they pan out, NAMAs have to be country-driven. CCAFS, together with partners FAO, EcoFYS (a sustainable energy consultancy), UNIQUE Forestry and Land Use (an advisory and management company) and ministry officials from 12 countries analysed how agriculture should be considered in NAMAs. This work supported the preparation of agricultural NAMAs in two countries, led to a funding proposal to create an agricultural NAMA in Indonesia and stimulated use of key messages in the development of NAMAs or other low emissions development policy in at least five countries. Latin Americans working on agricultural mitigation decided to work together, and Papua New Guineans and Moroccans set about the analyses required to prepare agricultural NAMAs.

"What is so important about these workshops is that they help to identify and clarify in broad terms the next steps that need to be taken. They establish a starting point for action."
Claudio Forner, United Nations Framework Convention on Climate Change secretariat

Read more
CCAFS Policy Brief No. 7: Paving the way for nationally appropriate mitigation actions in the agricultural sector
http://hdl.handle.net/10568/24832

The upshot of this push is tangible. In Mexico, the Commission Report persuaded Congress to support a draft climate-change bill, which was subsequently passed as the *General Climate-Change Law 2012*, only the third such law in the world. In Bangladesh, Commissioner Mohammed Asaduzzaman used the report to validate Bangladesh's submission on agriculture to the Subsidiary Body on Scientific and Technological Advice. In Kenya, the Commission Report was a reference for preparing Kenya's *Agriculture Act 2012*.

Internationally, the UN Committee on Food Security agreed key principles on how governments must address the massive food security challenge that climate change brings. The decision box on climate change and food security drew on the Commission Report. Building on another recommendation, three Commissioners played leading roles in setting up the international Knowledge Systems for Sustainability initiative.

Read more
Achieving food security in the face of climate change
http://ccafs.cgiar.org/commission/reports
Video animation
How to feed the world in 2050
http://bit.ly/SafeSpaceClimateFood

Moves forward on climate information services for farmers

In an increasingly uncertain climate, traditional knowledge of when to sow and harvest and when to expect rains, may no longer be enough to keep farmers in vulnerable areas food secure. What they need is information on weather and climate.

"With habitat loss and biodiversity decline, we have simply lost some valuable climate pattern indicators; this is where we can benefit from climate service expertise."
Paul Thiaw, Senegalese farmer

Making climate information more useful for farmers is an important part of CCAFS work to help farmers adapt to climate change. Work links the considerable research capacity of CGIAR Centers with partners such as the World Meteorological Organization, the International Research Institute for Climate and

TACKLING VULNERABILITY TO CLIMATE CHANGE IN NEPAL

In Nepal, nearly 70% of the population relies on subsistence agriculture. Agriculture accounts for 96% of all water use but only 24% of arable land is irrigated. Nearly 85% of rain falls from June to September during the monsoon. In 2008–2009 two million people went hungry when rains failed. In short, rural Nepalese are extremely vulnerable and have little to draw on in coping with climate change.

The International Water Management Institute (IWMI) identified the most vulnerable catchments in Nepal and modelled watershed management scenarios that would mitigate the effects of changes in climate in these basins. The Asian Development Bank and Nepalese Department of Soil Outputs Conservation and Watershed Management used this information to plan pilot projects for the Climate Investment Fund's Pilot Program for Climate Resilience.

Helping vulnerable communities to cope with climate variability and extremes strengthens their resilience to the long-term and uncertain impacts of climate change. This work complements other climate-change initiatives and will help vulnerable Nepalese to manage both their environment and climate change.

Read more
IWMI: Spotlight on Nepal
http://bit.ly/IWMI_Nepal

Society and regional climate centres and national meteorological services in Africa. CCAFS is a co-sponsor of the Climate Services Partnership – a global network of climate and development institutions, researchers and donors interested in strengthening climate services through networking, knowledge-sharing and creating new knowledge on what makes climate services work well.

One of the main issues partners tackle is how to provide the right information in the right way at the right time in remote areas. To find out what works and does not work in developing countries, CCAFS partners evaluated climate services in Africa and South Asia. Across the case studies, the importance of local context surfaced repeatedly.

"A good climate service has to begin with farmers."
Arame Tall, CCAFS

The research by CCAFS partners in India and Mali found that farmers need to be involved in deciding what, when and how they want information, and that it is important to find ways to reach women, and poor and socially marginalized groups. Gender plays an important role in the different ways that men and women use climate services.

"Men farmers use met[eorological] information in the daytime for the field, whereas women farmers constantly use it for livelihood purposes and household responsibilities."
Aminata Bagayoko, farmer, Cinzana, Mali

This kind of work can influence big players in climate services to cater to the needs of smallholder farmers. The findings were used by the United States Agency for International Development to inform its Climate Change and Development Strategy. World Vision also plans to include climate services for farmers in the Secure the Future programme in East Africa. More than that though, the CCAFS work showed how useful it is to examine the strengths, weaknesses and benefits of existing climate services.

Read more
Scaling-up climate services for farmers in Africa and South Asia
http://scalingup.iri.columbia.edu/
Equity and capacity building: key when scaling-up climate services
http://bit.ly/ZkO79J

SETTING UP NATIONAL FRAMEWORKS FOR CLIMATE SERVICES IN WEST AFRICA

Setting up services to provide farmers with the information they need when they need it in countries where meteorological offices are in their infancy means determining the obstacles and mapping ways to overcome them. To do this, CCAFS brought together 50 people involved in producing, delivering and using climate services in West Africa at a workshop in Senegal.

What emerged from discussions was that meteorological services in West Africa urgently need strengthening if useful services are to become a reality. Roadmaps produced during the workshop sketched out ways to overcome this major obstacle and move forward on developing climate services in the region.

Read more
West African countries chart plans to improve climate information for farmers
http://bit.ly/WestAfrica_climateinfo

Farmers take to seasonal forecasts

At present, farmers in the West African Sahel have little or no information on likely weather conditions for the next growing season. They need these seasonal forecasts to help them decide what and when to plant, and how much fertilizer and other inputs to use.

"As the climate grows increasingly unpredictable, farmers will need seasonal forecasts to help them plan their cropping cycle and reduce the impact of weather variability."
Ousmane Ndiaye, Agence Nationale de la Météorologie du Sénégal

After attending workshops – run by CCAFS climatologists, non-governmental organizations (NGOs) and agricultural advisers in Tougou, Burkina Faso, and Ségou, Mali – farmers quickly took to using a seasonal forecast to plan ahead. They used forecasts for the 2012 rainy season derived from long-term climate data to decide which crops to grow, when and how. In Tougou, because the forecast was for above-normal annual rainfall for 2012, farmers planted early varieties of millet, sorghum, maize, cowpea and groundnut on higher ground and rain-fed rice in lower areas. They vaccinated livestock against water-borne diseases and moved animals from low lying areas. In Ségou, Mali, extension services acted on the forecasts and recommended growing late maturing varieties until the end of June, and planting early maturing varieties at the beginning of July.

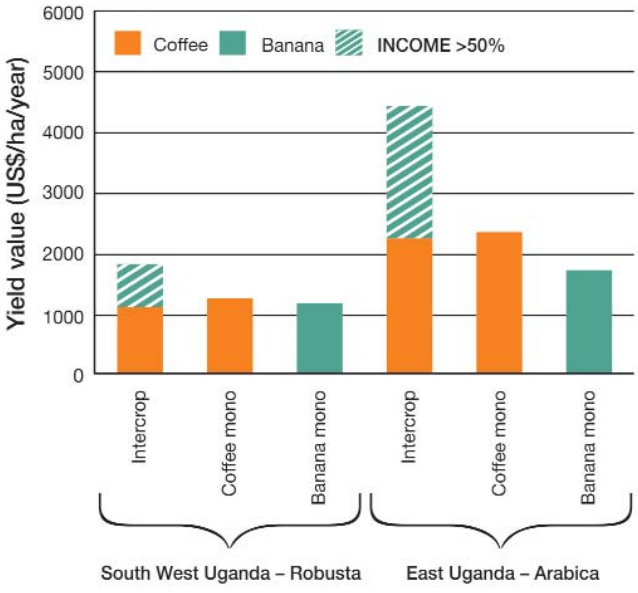
"The project has shown the virtues of a participatory approach, where meteorological services, such as Agence Nationale de la Météorologie du Sénégal, work together with farmers to determine what sort of information they need."
Kevin Coffey, CCAFS Science Officer, International Research Institute for Climate and Society, Columbia University

Read more
Putting climate forecasts into farmers' hands
http://bit.ly/o1Tysq
Following up on last year's climate forecast workshop – what happened next?
http://bit.ly/17MtjqJ

Acceptance of climate-smart banana–coffee intercropping

Not a lot of research has considered the advantages and disadvantages of different ways of growing coffee or banana. Government and other advisory services in Central Africa, with little information to go on, have taken the default position and recommended – sometimes even forced – farmers to monocrop both crops.

Researchers at the International Institute for Tropical Agriculture (IITA), the International Center for Tropical Agriculture (CIAT) and the World Agroforestry Centre (ICRAF) looked at coffee and banana systems in several Central African countries and found that a system where farmers grow coffee



The total yield value of intercropped fields was much higher than monocropped coffee or banana in farmer control fields. Income increased more than 50% with intercropping. Source: van Asten at al, 2012.

and banana side-by-side has many advantages. By intercropping, farmers spread their risks, an important consideration as climate becomes more variable. If coffee fails they still have banana and vice versa. What is more, farmers can produce much more on a piece of land without detriment to the yield of either crop. Incomes can go up by as much as a half. Ugandan farmers say that another advantage is that the bananas shade the coffee bushes making them less susceptible to drought and extreme weather.

Rwanda's Minister of Agriculture moved on these findings, inviting IITA and the heads of the export authority and research and extension to a meeting to discuss changing policies on coffee. Changes in policy will reinforce recent changes in recommendations on coffee and banana cropping by coffee authorities in Burundi, Rwanda and Uganda.

Read more
Towards climate-smart agriculture: lessons from a coffee × banana case
http://edepot.wur.nl/210075
In Uganda, coffee and banana go better together
http://bit.ly/Bananacoffee

Youth adapt and spread climate-smart wheat practices

In the Indo-Gangetic Plain, agriculture suffers from serious land degradation, declining ground water levels, falling productivity, migration of farm labour and high production costs. Frequent floods and droughts exacerbate these challenges. Providing information in the right way at the right time can encourage young people to believe that they have a future in agriculture. Young energetic farmers can push adoption of climate-smart practices in the wider community.

The International Maize and Wheat Improvement Center (CIMMYT) took the 'youth route' to adapting and out-scaling climate-smart practices. Youth cooperatives are a new approach to getting young people into agriculture and jobs related to agriculture. Young people are open to up-to-date knowledge provided by the cooperatives and by mobile phone. They are good at adapting resource management and conservation agriculture to local circumstances. Their networks encourage farmer-to-farmer extension and they are not slow to showcase what they do. Over 70 local and national daily newspapers and national news channels have run articles on the climate-smart wheat conservation agriculture activities of youth groups.

As well as getting media coverage, rural youth and farmer cooperatives have spread climate-smart wheat conservation agriculture practices to more than 3000 people. Farmers have improved their incomes by US$127–315 per hectare per crop season. Politicians are taking note. The Chief Minister of Haryana recently announced incentives for the adoption and promotion of climate-smart and resource-efficient technologies.

Read more
Modern ICT for Agricultural Development and Risk Management in Smallholder Agriculture in India. CIMMYT Socioeconomics Working Paper No. 3. (2012)
http://bit.ly/10vD6Ev

Future Andean farmers prepare for changes in climate

On another continent, in the Peru-Bolivia altiplano, the International Potato Center (CIP) is also preparing farmers of the future to cope with climate change. CIP research indicates that, while changes in climate towards higher temperatures could be good for agriculture, converting pastures into cropland could release a lot of carbon to the atmosphere.

Researchers and partners are working with schools to teach the farmers of the future other ways to cope with a changing climate. Combining efforts, they taught 1200 children in 16 rural schools to raise seed, produce organic fertilizers, value-add to produce and make export quality handicrafts. Around 150 students – girls and boys – and 185 women learned to build greenhouses and to grow 18 different crops. They harvested 2–4 crops a year where only one crop is usually feasible because of the harsh climate. A non-governmental agency in neighbouring Bolivia has taken up the idea and is working with schools in a similar way.

"The idea is to provide the mechanisms for fostering the formation of the future farmers under an uncertain climate. In all those schools, teachers become the extension agents."
Roberto Quiroz, International Potato Center

Read more
Proyecto ALTAGRO CIP-CIDA
http://inrm.cip.cgiar.org/altagro/

Enhancing opportunities for our partners

Although many developing countries are likely to feel the harsh impacts of climate change, they often lack the capacity to cope with its effects. As such, countries in Africa and South Asia are disadvantaged when it comes to measuring and mitigating greenhouse gas emissions, accessing carbon markets, negotiating climate-change agreements and adapting farming technologies.

CCAFS' approach in enhancing capacity is to provide in-country training opportunities that facilitate climate-oriented research, knowledge-sharing networks and skills in measuring and mitigating the effects of climate change.

Tackling livestock emissions

According to the FAO, livestock are responsible for 18% of greenhouse gas emissions. Reducing emissions from livestock systems is therefore critical for stabilizing global climate change. But as demand for livestock products escalates, Africa lags behind in its ability to mitigate the greenhouse gases associated with production and transportation.

In September 2012, working with the Global Alliance Livestock Research Group and International Livestock Research Institute (ILRI), CCAFS held a training workshop on measuring and mitigating greenhouse gases in African livestock systems. Nine African countries participated: Burkina Faso, Ethiopia, Ghana, Kenya, Mali, Niger, South Africa, Tanzania and Uganda.

Leading international scientists from the Intergovernmental Panel on Climate Change (IPCC) trained participants in the IPCC methodology for creating greenhouse gas inventories. The workshop concluded with a detailed work plan to improve collaboration, develop national inventories and put mitigation actions into practice.

The 2012 workshop was a first step in ILRI's longer-term goal of establishing a network of centres measuring greenhouse gas emissions across Africa. These centres will provide African countries with the knowledge and data necessary to develop mitigation strategies that conform to international protocols and are acceptable to local farmers. With such strategies in place, the livestock sector in Africa will be on course to access the Clean Development Mechanism and other emerging carbon markets.

Read more

Measurement and mitigation of greenhouse gases in African livestock systems: building capacity to meet the challenge. Workplan and Workshop Report. http://hdl.handle.net/10568/27780

ADAPTING MAIZE SYSTEMS TO CLIMATE CHANGE

For farmers growing maize, extreme drought and heat stress caused by global climate change can mean yields drop or even that crops fail. One way of combating this problem is to grow maize with genetic tolerance to the new conditions. But in those countries most vulnerable to the effects of climate-change, knowledge of the relationship between crop performance and weather variations is often limited.

To strengthen in-country capacity for monitoring meteorological conditions, CCAFS teamed up with the International Maize and Wheat Improvement Center (CIMMYT) and national research institutes from South Asia, and East and Southern Africa. During 2012, capacity-building courses in India and Ethiopia attracted scientists and technicians from national institutes and seed companies in Ethiopia, Zimbabwe, India, Bangladesh, Pakistan, Nepal and Sri Lanka.

"Our aim was to add an environmental check to existing field trials for maize. Through hands-on training, in-country researchers are now equipped to install weather stations and monitor how meteorological conditions affect crop performance."
Jill Cairns, Maize Physiologist, CIMMYT

Course participants also learned how climate change will affect maize-growing areas in the future.

"African seed companies and government agencies just aren't in touch with climate-change predictions published in scientific journals. So looking at downscaled projections for their regions really brought home how much conditions are expected to change, and how much seed-breeding programmes need to adapt."
Jill Cairns, Maize Physiologist, CIMMYT

Read more
Improving wheat seed system and end-use quality in Ethiopia
http://blog.cimmyt.org/?p=9807
Laying foundations to create productive and sustainable cropping systems in Asia
http://blog.cimmyt.org/?p=8571

Gender, society and climate change

Inequalities between men and women may be made worse by climate change. Without an understanding of the different needs of men and women, and the different problems they face, attempts to help them adapt to climate change will risk leaving women behind and hinder efforts for broader development. CCAFS sees taking gender into account as crucial to achieving climate-smart agriculture.

"Equal access to key assets could raise total agricultural production in developing countries by 2.5 to 4%, which could in turn reduce the number of hungry people in the world by 12 to 17%, or 100 to 150 million people. This 'gender gap' has massive implications for poverty reduction and nutrition."
Stephen Hall, WorldFish Center

Governmental and non-governmental partners in Bangladesh, Uganda and Ghana are benefiting from joint efforts led by CCAFS and FAO to widely share new gender, climate change-focused research tools, learning materials and evidence from initial studies through training courses. In addition to these, a capacity-strengthening competitive grants initiative catalysed studies by partners in five countries and three CCAFS regions. The studies have generated new knowledge on critical links between climate change and gender, and built local capacity in gender-climate change research, a real gap until now. CCAFS has also been working closely with organizations, such as CARE International, which also prioritize gender and pro-poor smallholder work, providing key research approaches and evidence to support the design of a new 'climate-smart agriculture' initiative in East Africa.

WORLDFISH GEARS UP TO MAINSTREAM GENDER IN CCAFS

Women in fisheries often bear the brunt of poverty. WorldFish is leading the way in applying gender transformative approaches. A project in Bangladesh directly addresses gender issues.

A cage and pond aquaculture project looks at how gender influences decisions on whether or not to go for 'climate-smart' fish cages and pond polyculture. An understanding of the influence of gender will be used to design ways to get around constraints.

Read more
What does "taking a gender-transformative approach" really mean?
http://bit.ly/11gmlUT

An important starting point – gender-disaggregated data

Gender equity gaps, such as inequitable access to agricultural resources and information, imply that men and women have different vulnerabilities and different adaptive capacities. Climate change has the potential to aggravate poverty and to reinforce gender inequalities. To start to redress gender inequalities CCAFS has been catalysing new efforts to collect gender-disaggregated data, involving the International Food Policy Research Institute (IFPRI), International Livestock Research Institute (ILRI), World Agroforestry Centre (ICRAF), CIAT and several university partners. Together, partners have been designing new intra-household gender surveys, training data collectors and carrying out surveys, initially in four regions and five countries. The data collected builds on earlier baseline work and provides a much richer knowledge base for guiding policies and programmes to empower women, reduce inequities and increase resilience to a changing climate.

"It is important to recognize gender differences and conduct gender research that will allow CCAFS researchers and partners to understand how to overcome such differences, so both men and women are included in intervention strategies."
Patti Kristjanson, CCAFS Theme Leader

Read more
Gender, Climate Change, Agriculture, and Food Security
http://www.ccafs.cgiar.org/gender

GENDER, SOCIAL DIFFERENCES AND ADAPTATION IN NEPAL

Gender is only one of many factors that affect power and influence. Research on systemic integrated adaptation brings together sociology, global environmental change, economics, finance and politics. The first field research, in Nepal, captured information on the impact of climate change and climate variability. Researchers consulted a wide range of people, from householders to central government officials.

There were interesting findings. For example, when women belonging to the minority Yadav caste get married, usually in their mid to late teens, they are not allowed to leave their marital home for the first five years, and they are never allowed to join groups, such as women's farming groups or loans and savings groups. As most non-governmental development programmes in Nepal involve groups this means women cannot take part in any training, voting or committees. They cannot access credit of any kind except through their husbands or fathers. Women married into extended families have very little freedom and influence in the home. The most significant barrier was their mothers-in-law.

Women's numeracy and literacy in comparison to men is extraordinarily low. Older women who can write their names have learned to do so when they were adult. Illiteracy impedes many facets of women's lives, including in accessing information and choosing adaptation options.

Given the deep-rooted, historically and socially driven nature of gender and other imbalances prevailing in many communities, this kind of research will deepen understanding of socially differentiated roles, and help develop tools for analysing gender and social differences.

Read more
Training Guide for Gender and Climate Change Research in Agriculture and Food Security for Rural Development.
http://www.fao.org/climatechange/micca/gender

A little learning goes a long way – women's voices on climate change in Nepal

CCAFS partners, the International Water Management Institute (IWMI) and the Rural Self Reliance Development Center in Thadhi Jhijha, Dhanusha, Nepal, taught women to film each other and make a video. The women speak about how climatic variability affects crops, men's migration, women's standing, and how the weather and seasons are embedded in cultural and religious practices.

Women farmers in Nepal feel they have little influence on policies and interventions that aim to reduce their vulnerability. The CCAFS training gave the women skills and self-confidence. This may encourage them to tackle the issues that concern them, to join advocacy networks and voice their concerns nationally and internationally. The video has already been viewed and discussed at a national workshop on aid effectiveness.

See more
Participatory video training in Nepal
http://bit.ly/IWMImultimedia

'Aha moment' for women in Bihar

Training by CCAFS' partners, Alternative Futures and a non-governmental organization, Bihar Mahila Samakhya, prompted an 'aha moment' for leading women in rural Bihar. For the first time they realized that something called 'climate change' was the cause of more frequent, intense and unpredictable floods, erratic rainfall, shorter harder winters, longer hotter summers and more water shortages. The training, reaching 1700 women, took an unusual slant, explaining sometimes complex issues on climate change, climate-smart agriculture and gender relations using day-to-day examples, songs and poems.

"Now I can relate climate change to what I see happening on our farms."
Sarita Kumari, Purnea District

Imaginative training can be a successful way of encouraging women to adopt climate-resilient farming practices. In Bihar, a women's self-help group is introducing climate-smart ways to work. This is exactly what training for women endeavours to encourage.

Read more
Creating empowerment in India – women trained to train others on climate adaptation
http://bit.ly/ZJDokz
Hundreds of Bihar women get trained on climate change and food security
http://bit.ly/ZhXxBN

Gender and climate finance – towards equitable benefits

Agricultural carbon finance initiatives involve carbon buyers paying land managers to curtail emissions or start sequestering carbon, for example by planting trees. These initiatives have the potential to help put smallholder farmers on the path to climate-smart crop and land management. The danger is that poorer farmers and women may lose out. In the Nyando River catchment in Western Kenya, CARE and CCAFS explored how to tap carbon finance to tackle pockets of extreme poverty and environmental degradation. They set out to pinpoint barriers faced by women – land and tree tenure, labour, knowledge and leadership – and identify strategies and institutional arrangements that would ensure equitable participation and a fair share of benefits.

Lessons learned show that women are in a better position to benefit from carbon finance when contracts involve small groups, when payments are made directly to them, for example by cell phone, and when land ownership is not required. Training courses tailored to and facilitated by women, at times of the day when women are free to participate, also help. In sum, women are likely to benefit more from a broad 'climate-smart agriculture' approach that involves new institutional arrangements to better support equitable participation and benefits than a purely 'carbon finance' approach. The learning methodology in this research-for-action partnership, and the evidence drawn out by researchers and practitioners working closely together, has re-oriented the second phase of the programme which is now expanding to three other countries.

Read more
CCAFS Report 8. Institutional innovations in African smallholder carbon projects
http://hdl.handle.net/10568/21222
CCAFS Working Paper 30. Smallholder agricultural carbon projects in Ghana: benefits, barriers, and institutional arrangements
http://hdl.handle.net/10568/25134

Partnerships and engagement

CCAFS seeks to:

- **Provide a credible and authoritative platform for scientific information, knowledge and tools on agriculture and food security under climate change**
- **Engage actively at all levels to facilitate user-driven research, science-based dialogue, knowledge-sharing and evidence-based policy among key partners**

These objectives call for CCAFS to work within partnerships and coalitions in all aspects of its work – the new way of working in the CGIAR. Strategic partnerships will be critical to ensuring that research maintains relevancy to dynamic policy agendas, scientific knowledge is co-generated and co-owned, and space is created for science-based dialogue among different sectors and interest groups.

Making African voices heard at Doha

For the first time, African countries have provided a joint submission on agriculture to the UNFCCC, making the continent's views known to the Subsidiary Body for Scientific and Technical Advice (SBSTA) and the Conference of Parties (COP) process. This clear Africa position in the UNFCCC process argues for the inclusion of agriculture in any international agreement on climate change, providing African countries with access to research, technology and capacity to adapt to climate change as well as building co-benefits for mitigation.

An agreement at COP17 in 2011 mandated SBSTA to consider issues related to agriculture and to prepare a decision for adoption at COP18 in Doha in 2012. The African Group of Negotiators (AGN) previously had divergent views and was slow to appreciate the role of agriculture in the negotiations as most members tended to see agriculture only in the context of adaptation.

CCAFS, in partnership with the Common Market for Eastern and Southern Africa (COMESA), the East Africa Community (EAC) and the Southern Africa Development Community (SADC), organized two workshops in Arusha, Tanzania, and Johannesburg, South Africa, to help further articulate the African position on agriculture. These workshops, together with other national meetings, helped build awareness and understanding of the issues related to the impacts of climate change on agriculture and the impacts of agriculture on climate change.

"The AGN now recognize that although agriculture can be seen in the context of adaptation, there are co-benefits to mitigation actions. Key issues of focus include: the critical impact of agriculture as it contributes to our sustainable development in Africa, the adverse impacts of climate change on agriculture in the country, technology transfer, appropriate breeds, how to support farmers address the impacts of climate change affecting our production and the entire value chain and the livelihood connection."

Chebet Maikut, Principal Programme Officer, Mitigation Climate Change Unit, Ministry of Water and Environment, Uganda

The ability to better articulate issues related to agriculture and climate change has built the confidence levels of the AGN leading to better outcomes during COP negotiations.

"The AGN can comfortably and confidently apply the SBSTA mandate from Article 9 of the convention in the African context regarding agriculture."

Fredrick Kossam, Head of Climate Change and Research Services, Ministry of Natural Resources and Environment, Malawi

The new partnership between CCAFS and the Africa Climate Policy Centre, and continued collaboration with regional bodies (COMESA, EAC and SADC), enabled further scaling-up of the science and policy dialogue. CCAFS scientists provided a synthesis of submissions to SBSTA, and to inform further the African position during COP18.

Read more

CCAFS at COP18/CMP8
http://bit.ly/CCAFSCOP18
Africa at COP18/CMP8
http://www.afdb.org/en/cop/news/

WORKING BACKWARDS TO PLAN FOR THE FUTURE

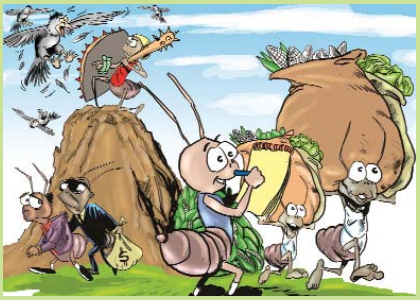
Developing regional strategies by 'back-casting' involves working back from a co-created desired scenario in the future to the present. Its advantage is that it takes strategic planners away from planning forward to the future, which usually leads to plans that build on and plan for the past. CCAFS introduced scenarios in workshops in 2011 and, during 2012, several workshops were held in Africa and South Asia. For example, over two and half days in September 2012, participants from ministries in Kenya, Tanzania, Uganda, Rwanda, Burundi and Ethiopia used back-casting to develop a strategic vision of the future and explored strategies towards this vision using alternate plausible scenarios. Another key outcome of the workshop was co-learning about scenario methodologies and potential partnerships among participants that could lead to policy implementation in the region based on the scenarios.

The East Africa Strategic Futures Workshop, held in Arusha, Tanzania, was organized by CCAFS in collaboration with the Society for International Development for Eastern Africa and Panos East Africa.

Read more

Working backwards to plan for future food security in East Africa
http://bit.ly/15Dl5na

In East Africa civil society and private sector actors conceptualized how they might arrive at a shared vision of the future given a variety of potential scenarios. The 'industrious ant' scenario involves working with a cooperative, unified government that plans ahead for adaptation. The 'herd of zebras' is unified, but reactive. 'Lone leopards' are proactive, but fragmented, while 'sleeping lions' are completely individualistic and concerned with the status quo, making them the most difficult to work with. Stakeholders must come up with a way to achieve their future vision under any one of these possible scenarios.



The 'industrious ants' are unified and proactive.

'Lone leopards' are proactive as well, but more fragmented and individualistic.

The development and use of scenarios helps reveal key issues around improving future food security, environments and livelihoods. Artwork Copyright Mouvine Were.

INTER-CENTRE COLLABORATION: THE KEY TO DATA HARMONIZATION AND DATA INTEGRATION

The CGIAR Generation Challenge Program (GCP) assists developing-world researchers to access improved plant breeding technologies and a broader pool of plant genetic diversity. GCP and CCAFS co-organized a workshop bringing together CGIAR Centres to collaborate on the development of crop trait dictionaries of the GCP Crop Ontology (CO) and potential links to the Global Agricultural Trial Repository (AgTrials).

AgTrials stores data sets uploaded by partners, enabling the creation of an online atlas of evaluation sites. The CO is creating a common language that can be used by breeders, database managers and crop modellers. The CO website also provides access to the trait dictionaries, which are a valuable resource for AgTrials. By matching all measured variables named in AgTrials to similar terms in the CO, trait-based queries can be used to retrieve evaluation data files and sites.

The CGIAR crop lead centres include Bioversity International, International Maize and Wheat Improvement Center (CIMMYT), International Center for Tropical Agriculture (CIAT), International Potato Center (CIP), International Institute of Tropical Agriculture (IITA), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and International Rice Research Institute (IRRI).

Read more
Integrated Breeding Platform. Providing resources and building professional networks for plant breeding
http://www.integratedbreeding.org

Scaling-up climate services for farmers in Africa and South Asia

Through partnerships with major organizations and programmes investing in climate services, CCAFS has played a key role in the recent surge of interest in strengthening climate services in developing countries. In 2012, CCAFS research and communication efforts had a tangible influence on the strategic direction of the Climate Services Partnership (CSP), and of two core partners – the United States Agency for International Development (USAID) and World Vision – within the CSP network, leading to more emphasis on targeting smallholder farmers.

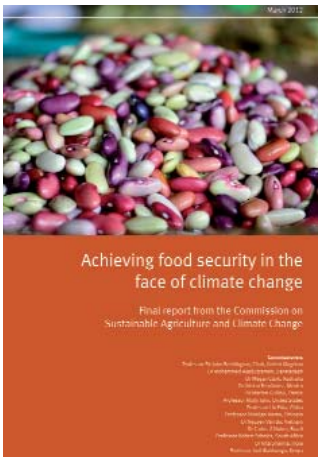
In preparation for a workshop in Senegal in December 2012, CCAFS supported a USAID-commissioned evaluation of the agrometeorological advisory programme in Mali, and conducted a similar evaluation of India's agrometeorological advisory programme. The workshop, organized and co-funded by CCAFS, the World Meteorological Organization (WMO), USAID and CSP, used lessons from India and Mali in considering key challenges to strengthening and scaling-up climate services. With broad participation from 30 countries, the workshop fostered South-South learning and collaboration between sub-Saharan Africa and South Asia on strengthening climate services for smallholder farmers. It focused on overcoming challenges that confront efforts to use climate-related information to improve the lives of smallholder farmers. Workshop participants proposed actionable ideas for addressing these challenges within and across regions, and USAID funding has been mobilized to support their implementation.

CCAFS communications – a two-way street

CCAFS communications are a two-way street. On the one hand, it is important to translate complex information and research findings into useful information for a vast array of stakeholders with different needs. And, on the other hand, it is important to understand the information needs of different groups. CCAFS climate-change communications inform policymakers, development partners, researchers and farmers so that they can make decisions with a greater understanding of the interactions between local conditions, national policies and programmes, and international development, in the face of multiple drivers of change.

Global Commission creates waves with food security report

In March 2012, the Commission on Sustainable Agriculture and Climate Change released its final report, *Achieving Food Security in the Face of Climate Change*. The report was launched at the Planet Under Pressure conference in London UK, which was organized by the global environmental change community. The report's launch was



accompanied by a video animation titled 'How to feed the World in 2050', which helped bring the Commission's recommendations to life.

The report received extensive international media coverage, by the British Broadcasting Company (BBC), Reuters, *Time, Nature, Scientific American,* Voice of America, Inter-Press Service and 30 others. The 7 April 2012 *New York Times* editorial page dedicated one of its four stories to the Commission. Op-eds by Commissioners were published in the *Huffington Post*, the *Asia Sentinel*, the *New Agriculturist*, International Institute for Sustainable Development *Climate Change Policy and Practice*, SciDevNet and AlertNet. Within one day of the launch 400 hard copies of the report and additional copies of the

Read more
http://ccafs.cgiar.org/commission

summary had been distributed. The documents were downloaded over 30,000 times from the CCAFS website in 2012. The video animation was viewed over 16,000 times on YouTube in 2012.

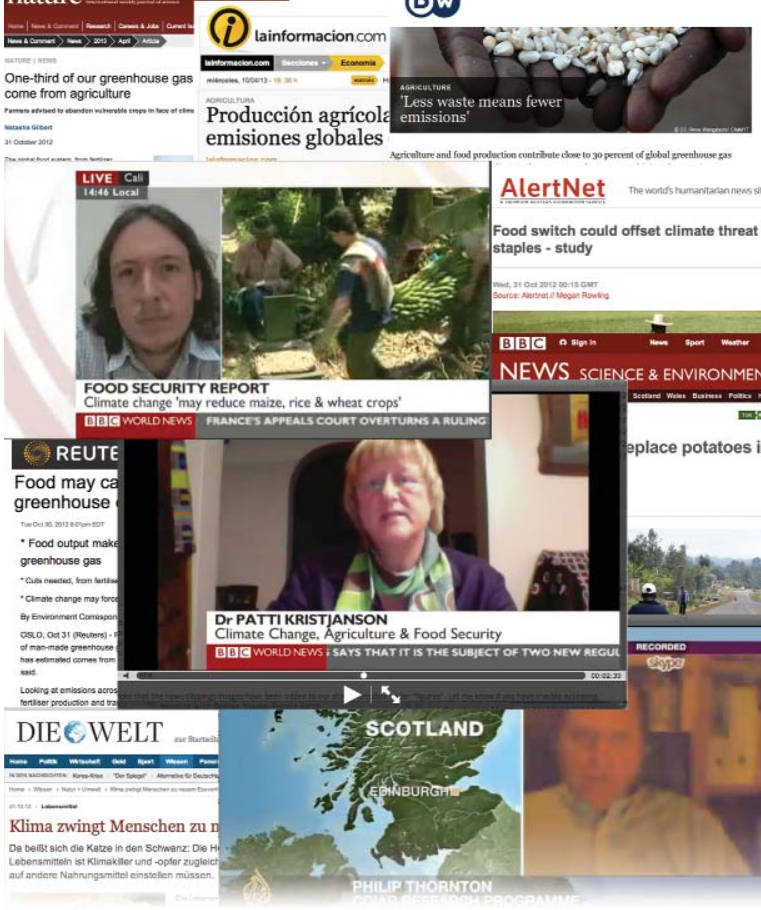
Media worldwide latch on to climate change and food issues

Climate change and food systems are inextricably linked: food systems contribute significantly to global greenhouse gas emissions, but agriculture is also highly vulnerable to climate change. In October 2012, CCAFS launched two publications exploring the links between climate change and food systems, and the implications.

The first was a paper on climate change and food systems in the *Annual Review of Environment and Resources*. The paper provided a comprehensive review of what the scientific community currently knows about the impacts of climate change on agriculture, the impacts of agriculture on climate change, and the options for adaptation and mitigation.

The second was a CCAFS policy brief outlining the outlook for major food staples and critical natural resources in a changing climate. The policy brief drew on a CCAFS Working Paper, *Impacts of climate change on the agricultural and aquatic systems and natural resources within the CGIAR's mandate*, authored by over 70 scientists at 14 CGIAR Centres for input to the High Level Panel of Experts (HLPE) on food security and nutrition that advises the Committee on World Food Security (CFS).

CCAFS research on greenhouse gas emissions from the whole food system was widely reported. This figure shows partitioning of production-based food chain greenhouse gas emissions, excluding land-use change, for China and UK. The estimated megatonnes of carbon dioxide equivalent for 2007 are indicated. Source: Vermeulen SJ, et al. 2012. *Annu. Rev. Environ. Resour.* 37:195-222



The two publications, which were launched together, received considerable media attention. CCAFS scientists were invited to speak on BBC Focus on Africa (radio and television), BBC television World News and Al Jazeera television. The issues were picked up by global media agencies including Reuters, BBC News, Guardian Global Development, Agencia EFE (Spain), Deutsche Presse-Agentur (Germany), Reuters AlertNet , Deutsche Welle and NatureNews. Features in the media stories took various angles, such as whether bananas might replace potatoes under a changing climate, and sparked a debate in the UK about emissions from locally grown as opposed to imported lamb.

A number of CGIAR Centres, including IWMI, Bioversity International, ILRI and CIAT also published related news stories, fleshing out some of the facts and figures.

Read more

Climate change and food systems
http://www.annualreviews.org/doi/full/10.1146/annurev-environ-020411-130608
CCAFS Policy Brief No. 6:
Recalibrating food production in the developing world: global warming will change more than just the climate.
http://hdl.handle.net/10568/24696

Smallholder farmers make gains at Rio+20 conference

At the 2012 UN Conference on Sustainable Development (UNCSD, also known as Rio+20), CCAFS helped convene the 4th Agriculture and Rural Development Day (ARDD). Over 600 onsite and 600 offsite stakeholders from across the agriculture and food sectors shared and discussed solutions and innovations for transforming food systems, especially under climate change.

ARDD was organized by a consortium of partners. Hosts were Empresa Brasileira de Pesquisa Agropecuária (EMBRAPA) and the CGIAR Consortium. Event sponsors included the Center for International Forestry Research (CIFOR), Technical Centre for Agricultural and Rural Cooperation (CTA), the International Fund for Agricultural Development (IFAD), R3EZIS, Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), the World Bank and Yara International. Event co-organizers included the Danish Food and Agriculture Council, FAO, Farming First, Global Forum on Agricultural Research (GFAR), the Global Donor Platform for Rural Development, International Foundation for Organic Agriculture (IFOAM), World Farmers Organisation and the World Food Programme. The media partner was Reuters AlertNet and the communications team included staff from many of these organizations as well as from CGIAR Centres.

ARDD participants called upon Rio+20 negotiators to create a 'new vision for sustainable development' that recognizes the significance of agriculture for economic growth, food security, poverty reduction and long-term environmental sustainability. CCAFS participated in a large collective communications effort with all partners to put this message across. Social reporting from key sessions and plenary meetings ensured that messages reached relevant audiences. CCAFS staff reported live for the CCAFS blog and also produced summaries of developments and updates every other day. These were shared by email with CCAFS colleagues and partners at Rio+20 and beyond. In all, the CCAFS communications team produced 13 Rio+20-related stories.

The final text from Rio+20 took the call for a 'new vision' on board, making several significant mentions of food security, sustainable agriculture and farming, and acknowledging that smallholders are key stakeholders.

Read more
Small wins for small farmers at Rio+20
http://bit.ly/Rio4Ag

Organized for success

Independent Science Panel

Fatima Denton, African Climate Policy Centre (ACPC) and the United Nations Economic Commission for Africa (UNECA)
Ariel Dinar, Department of Environmental Sciences, University of California (USA)
Takeshi Horie, National Agriculture and Food Research Organization (NARO) (Japan)
Thierry Lebel, Laboratoire d'étude des Transferts en Hydrologie et Environnement (LTHE) (France)
Holger Meinke, Tasmanian Institute of Agriculture (TIA) and the School of Agricultural Science at the University of Tasmania (UTAS) (Australia)
Thomas Rosswall, Chair (France)
Mary Scholes, Vice-Chair, School of Animal, Plant and Environmental Sciences, University of the Witwatersrand (South Africa)
Lindiwe Majele Sibanda, Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN) (South Africa)
Ram Badan Singh, National Academy of Agricultural Sciences (India)
Christof Walter, Christof Walter Consulting Ltd (UK)
Rik Leemans, *ex officio*, Earth System Science Partnership (ESSP) (Future Earth as of 31 December 2012 (Netherlands)
Bruce Campbell, *ex officio*, Program Director, International Center for Tropical Agriculture (CIAT) (Colombia)

Program Management Committee

Pramod Aggarwal, Regional Program Leader (South Asia), International Water Management Institute (IWMI) (India)
Andrew Jarvis, Theme Leader (Theme 1), International Center for Tropical Agriculture (CIAT) (Colombia)
James W. Hansen, Theme Leader (Theme 2), Columbia University (USA)
Eva 'Lini' Wollenberg, Theme Leader (Theme 3), University of Vermont (USA)
Philip Thornton, Theme Leader (Theme 4), International Livestock Research Institute (ILRI) (Kenya)
Bruce Campbell, *ex officio*, Program Director, International Center for Tropical Agriculture (CIAT) (Colombia)

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Gloria Cecilia Rengifo, Senior Manager, Finance, Contracts and Liaison, International Center for Tropical Agriculture (CIAT) (Colombia)
Misha Wolsgaard-Iversen, Program Manager, University of Copenhagen (Denmark)
Ratih Septivita, Events and Program Support Consultant (Indonesia)
Vanessa Meadu, Communications and Knowledge Manager (UK)

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Andrew Jarvis, Theme 1, International Center for Tropical Agriculture (CIAT) (Colombia)
Andrew Challinor, Theme 1, University of Leeds (UK)
James W. Hansen, Theme 2, Columbia University (USA)
Eva 'Lini' Wollenberg, Theme 3, University of Vermont (USA)
Philip Thornton, Theme 4, International Livestock Research Institute (ILRI) (Kenya)
Patti Kristjanson, Theme 4, World Agroforestry Centre (ICRAF) (Kenya)
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James Kinyangi, East Africa, International Livestock Research Institute (ILRI) (Kenya)
Robert Zougmoré, West Africa, International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) (Mali)
Paul Fox, *interim*, Southeast Asia, International Rice Research Institute (IRRI) (Vietnam)

Scenarios Leader

Kasper Kok, Wageningen University (Netherlands), replacing **John Ingram**, Oxford University (UK)

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International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Lieven Claessens
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International Institute for Tropical Agriculture (IITA), Piet van Asten
International Livestock Research Institute (ILRI), Mario Herrero
International Maize and Wheat Improvement Center (CIMMYT), Bekele Shiferaw, Clare Stirling
International Potato Center (CIP), Roberto A. Quiroz
International Rice Research Institute (IRRI), Reiner Wassmann
International Water Management Institute (IWMI), Vladimir Smakhtin
World Agroforestry Centre (ICRAF), Henry Neufeldt
WorldFish Center, Doug Beare

Financial highlights

2012 was the second year of operation for CCAFS. As in 2011, high profile scientific results were released in collaboration with multiple partners and also a series of successful events took place. Funding uncertainty remains the top risk in CCAFS. While there was definitely improvement in 2012, spending was curtailed by some Centres as a result of the CGIAR Fund funding freeze.

Financial results for 2012

The CCAFS 2012 budget was US$69.8M (million), including funds from the CGIAR Fund of US$51.3M which includes carried over funds of US$10M from 2011 and other bilateral sources of US$18.5 million. Total execution in 2012 was US$67.6M.

CCAFS received from the Consortium firm confirmation of the approved Windows 1 and 2 (W1 and W2) of the 2012 budget of US$41.4M during the first quarter of 2012. The CCAFS total W1 and W2 request for 2012 was US$55M. It is obvious that the original Consortium and Fund approved W1 and W2 budget was not met in 2012. The first tranche of W1 and W2 funds (25%) was received early in May. Thereafter, several other disbursements were made, resulting in the CCAFS W1 and W2 budget being 93% funded by the end of 2012.

By the end of the year, 98% of the CGIAR W1 and W2 funds were executed while the execution of bilateral funds was in the order of 93%.

In the following two tables the financial execution by natural classification and by Centre are shown, expressed in thousands of US$.

Table 1: Execution as of 31 December 2012 per natural classification

BUDGET CATEGORIES	BUDGET	EXECUTED	EXECUTED %
Personnel	20,937	17,364	83
Collaborator costs – CGIAR Centres	2,660	3,866	145
Collaborator costs – partners	17,847	16,416	92
Supplies and services	12,857	14,103	110
Operational travel	3,849	4,008	104
Depreciation	1,304	1,542	118
Subtotal	59,455	57,300	96
Indirect costs	10,391	10,311	99
TOTAL – ALL COSTS	**69,846**	**67,611**	**97**

CCAFS financial outlook for 2013

The original 2013 W1 and W2 budget for CCAFS, as approved by the CGIAR Consortium and Fund at the inception of CCAFS, amounts to US$68.6M. However, the estimated W1 and W2 2013 budget is US$37.3M. Given that CCAFS will most likely receive a total W1 and W2 budget of approximately 55% of the initially approved budget, and in line with the direction of the Consortium when allocating funds to Centres, CCAFS used a performance-based allocation system involving a number of variables. As a result, CCAFS management returned the initial 2013 budget to the participating Centres asking for adjustments of their initial 2013 budgets. This approach resulted in a sliding scale of a 2013 budget reduction, which ranged from a 10% reduction for the best performing Centre up to a 30% reduction for the poorest performing Centre.

The estimated 2013 total budget is US$62M, which includes US$24.7M of bilateral grants. To allow advance planning, budget estimates for 2013 were given to the Centres by mid-2012, whereas final W1 and W2 budget allocations from the Consortium are yet to be received. This uncertainty does not facilitate advance planning. One of the major efforts of CCAFS in 2013 will be to reach out to other bilateral donors.

Table 2: Execution as of 31 December 2012 per Centre

CENTRE	BUDGET	EXECUTED	EXECUTED %
AfricaRice	1,339	1,293	97
Bioversity	6,074	5,723	94
CIAT	9,599	9,030	94
CIFOR	1,095	983	90
CIMMYT	5,158	5,303	103
CIP	2,812	2,336	83
ICARDA	2,044	1,855	91
ICRAF	7,933	8,475	107
ICRISAT	5,131	5,197	101
IFPRI	4,942	3,743	76
IITA	1,293	1,348	104
ILRI	8,039	8,497	106
IRRI	1,529	1,352	88
IWMI	4,766	4,720	99
WorldFish	2,538	2,073	82
Coordinating Unit and Management	5,554	5,682	102
TOTAL – ALL COSTS	**69,846**	**67,611**	**97**

Donors

In 2012, CCAFS work was carried out with funding from the following agencies:

CGIAR

Danida

Australian Government AusAID

Irish Aid Government of Ireland Rialtas na hÉireann — Ireland's commitment to a world without poverty and hunger

Canadian International Development Agency
Agence canadienne de développement international

Ministry of Foreign Affairs of the Netherlands

European Commission

The Program has technical support from: IFAD

Selected publications

In 2012, CCAFS scientists published 251 articles, reports, briefs and other papers.
These publications include:

100 peer-reviewed journal articles
- 77 in *ISI Thomson* journals
- 23 in other journals

Available at:
http://cgspace.cgiar.org/handle/10568/3547

3 peer-reviewed CCAFS Reports and 3 peer-reviewed CCAFS Policy Briefs
Available at: http://ccafs.cgiar.org/resources/reports-and-policy-briefs

18 CCAFS Working Papers
Available at:
http://ccafs.cgiar.org/resources/working-papers

7 Issues of Ag-Clim Letters, a science-policy bulletin (in English and French)
Available at: http://ccafs.cgiar.org/resources/agclim-letters-policy-bulletin

Global syntheses

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CARBON FOOTPRINT 2012

In 2011 the CCAFS Coordinating Unit initiated a carbon footprint reduction plan to reduce its carbon footprint and offset inevitable emissions. A number of activities were carried out in 2012 to reduce emissions resulting from air travel, which had been identified as the major greenhouse gas (GHG) emission factor. A reduction of 26% on the emissions level of 2011 was achieved.

In 2012 further activities were added into the calculation. Emissions comprising air travel (51%), events (34%), office (11%) and publications (4%) amounted to 128 t CO_2. Efforts have been made to select eco-friendly service providers, especially hotel and conference facilities, and provide low carbon catering at major events.

Apart from taking action to reduce emissions, inevitable emissions are offset through the Emiti Nibwo Bulora project in Tanzania. The project is administered by VI-Agroforestry and was selected based on an in-depth assessment of different offsetting options. The Emiti Nibwo Bulora project is located near a CCAFS research site and involves small-scale farmers in tree planting activities. The objective is to enhance the capacity of farmers to adapt to climate change. The Emiti Nibwo Bulora project is certified by the Plan Vivo Standard, which is widely acknowledged as one of the most important offset standards.

Read more
Coordinating Unit Carbon footprint initiative
http://ccafs.cgiar.org/about/carbon-footprint

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic partnership of the CGIAR and Future Earth. CCAFS brings together the world's best researchers in agricultural science, climate science, and the environmental and social sciences to identify and address the most important interactions, synergies and trade-offs between climate change and agriculture. The CGIAR lead centre for the Program is the International Center for Tropical Agriculture (CIAT) in Cali, Colombia.

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