CGIAR RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

CCAFS

SIX STEPS TO SUCCESS

How to make 500 MILLION FARMERS climate-resilient in 10 years while also reducing their agricultural emissions.

Insights from leaders

"Vicious alliances of stubbornly high poverty, hunger, undernutrition and inequality pervade the entire developing world. The situation of the world's poor and hungry is now being exacerbated by increasing vulnerability to climate extremes and associated food price spikes. Paradoxically, more than 50 percent of these deprived people are smallholder women and men farmers. Towards 2030, smallholders will only further swell the ranks of the poor and hungry under the intensifying climatic volatilities. Research for development must prioritise investments in helping poor agriculture-dependent people whose livelihoods are most at risk. The focus should be on accelerated, sustained, inclusive, pro-women, pro-poor and pro-youth development."

– Ram Badan Singh, Chancellor, Central Agricultural University and Past President, National Academy of Agricultural Sciences, India

"Scaling up climate-smart agriculture requires that we exploit its integrative power. We need to make sure that all the individual components are working together across scales – from national strategies devised within the framework of an international agreement to local processes for choosing technologies from ample menus of options. Encompassing resilient varieties, improved soil and water management, timely agro-climatic information, and new insights on sustainable intensification, these options must be made widely available to public, private, and civil society organizations."

– Ruben Echeverria, Director General, CIAT, Lead Center for CCAFS

"Scaling up technologies and practices that address climate challenges requires us to get our policies right so that they provide the necessary incentives to farmers. Researchers need to reach out to civil society, farmers and to the youth and equip them with knowledge that they can use in their policy advocacy efforts. Researchers also need to know how to communicate with these stakeholders, we need to greatly improve our understanding of what is needed for behavioural change."

– Lindiwe Sibanda, Chief Executive Officer and Head of Mission, FANRPAN

"The international community has pledged to 'end hunger, achieve food security and improved nutrition and promote sustainable agriculture'. Climate and environmental change threaten our ability to fulfil this commitment. How do we feed a growing population with dwindling natural resources? Innovation is crucial! I believe that creating partnerships which put farmers first and involve national governments, private sector and civil society is critical to ensure that smallholder farmers combine their knowledge with research findings to develop new practices. Running this 'last mile' to reach each and every farmer is essential whenever development assistance supports research and innovation."

– Roberto Ridolfi, Director, Sustainable Growth and Development, Directorate Development and Cooperation, European Commission

STEP 1

Put the right technology into farmers' hands

Climate-smart agriculture is about practices and technologies that increase productivity, and build farmers' resilience to climate change, and, where possible, decrease emissions. Getting this formula right is a challenge but an increasing number of success stories from the ground highlight how it can be done.

Laser land levelling

Developed by CIMMYT for conditions in some parts of India, this technology boosts yields while reducing both emissions and water use. The technique also has significant roll-on benefits to other climate-smart practices, such as conservation agriculture. It is currently being rolled out across CCAFS "climate-smart villages" in Haryana, India. http://bit.ly/1LjDt8D

500,000 HECTARES OF LAND have been made climate friendly through the use of lasers to level land.

Climate-smart dairy

Currently, livestock contributes to 14% of all human-induced greenhouse gas emissions. Responding to this, CCAFS researchers at ILRI and ICRAF have identified simple measures, such as better feed production and feeding practises, which can make a big difference. These practices are now been scaled out through partners like the East Africa Dairy Development (EADD) programme. In 2013 alone, the EADD helped 179,000 farming families implement climate-smart dairy practices, their adoption increased the incomes of those families by USD 131 million. Several governments around the world are embracing climate-smart dairy and are planning to scale up through policy, climate finance and private-sector leadership. http://bit.ly/1ODkUQE

Photo Credit: S. Odeyo (ICRAF)

STEP 2

Get farmers insured

Climate change increases the severity and frequency of extreme weather events, but new index-insurance programs reduce the risks that farmers face, allowing them to make much needed investments in climate-smart technology.

Weather-index insurance in India

The Agricultural Insurance Company of India has created an enhanced weather-index insurance product based on CCAFS research into the triggers that dictate when insurance payouts are made, such as rainfall levels. The improved data has helped cover farmers in areas where traditional agricultural insurance was not previously available and ensures that payouts are made promptly whenever farmers are hit by weather disasters. http://bit.ly/1MoyYNE

In India, new weather-index policies cover
1,000,000 farmers
against crop losses.

Index-Based Livestock Insurance

Thanks to a pilot study conducted by scientists at ILRI, an index-based livestock insurance product is now available through three commercial insurance partners in Ethiopia and Kenya. These insurance products trigger payouts to vulnerable pastoralists following extreme weather events, helping to build their resilience to climate change. http://ibli.ilri.org

Photo credit: N. Palmer (CIAT)

STEP 3

Deliver climate forecasts directly to farmers

Weather variability makes it difficult for farmers to know what varieties to plant and when to plant them. We need to get climate information and advice into the hands of farmers, to help them make informed decisions on their farms.

Big data based climate forecasts

In 2014, forecasts and recommendations provided by scientists at CIAT helped rice farmers in Colombia avoid huge losses. By mining 10 years of weather and crop data, the scientists were able to predict an oncoming drought in Córdoba and, working with Colombia's National Federation of Rice Growers, advised farmers in certain areas not to plant. These actions helped rice farmers avoid economic losses estimated at USD 3,600,000. Harnessing "big data" in this manner can help farmers know where, when and what to plant. http://bit.ly/1QLg81b

Climate information for African farmers

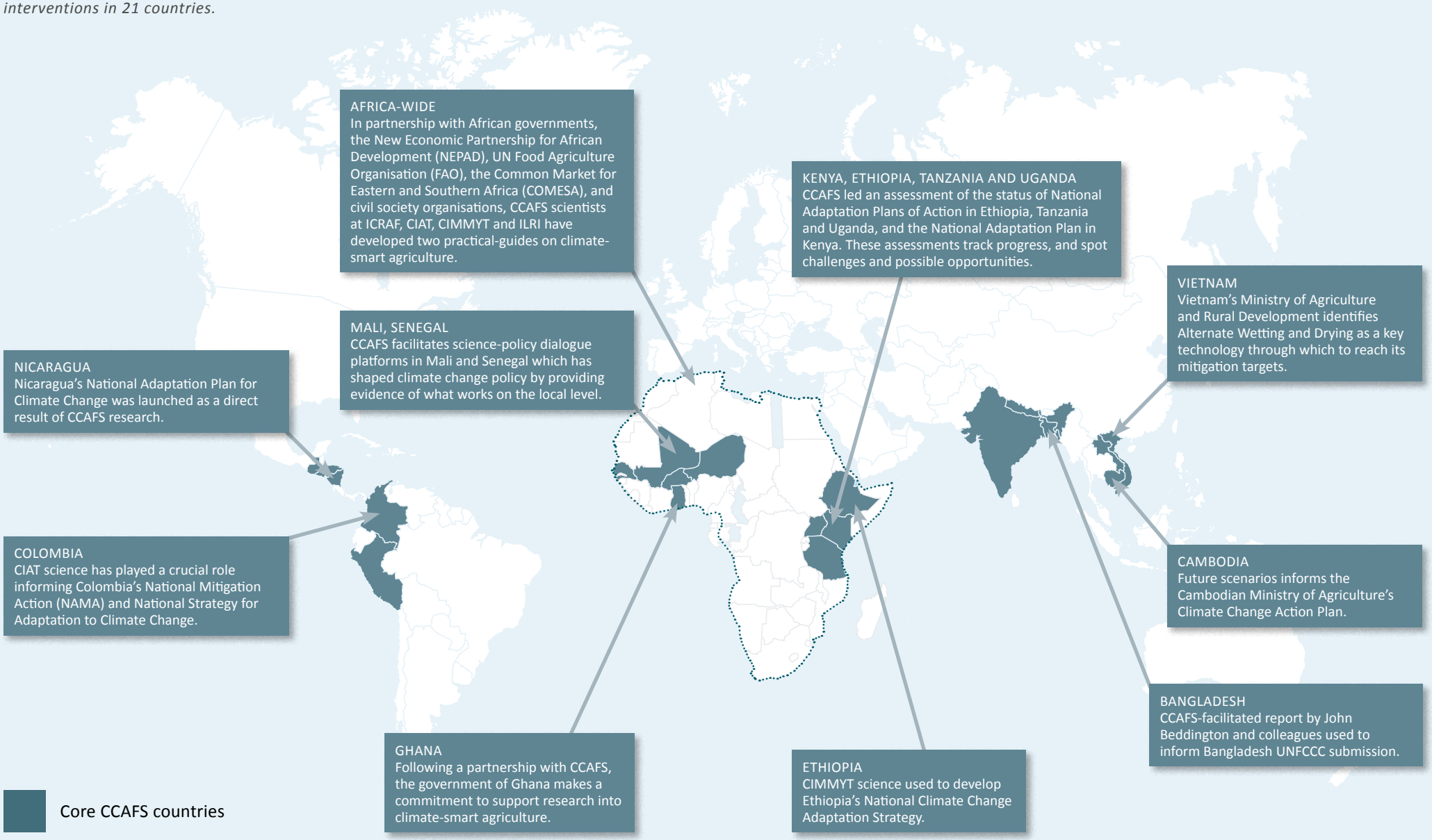
In collaboration with AGRHYMET and the National Metereological Services of several countries (e.g. Madagascar, Ethiopia, Tanzania), CCAFS is channeling climate information directly into farmers' hands across Africa. By combining traditional and scientific knowledge, locally specific forecasts are tailored to meet farmers' needs and delivered via mobile phone and radio broadcasts. These breakthroughs have been helped by partnerships with advanced research organisations like the University of Reading and the International Research Institute for Climate and Society (IRI). http://bit.ly/1QLghBF

In Senegal,
forecasts now reach around
seven million farmers
via
community-based radio.

STEP 4

Enhance the national enabling environment

It is crucial that national policies support climate-smart agriculture. The CCAFS network is undertaking national policy engagement and action research on climate-smart agricultural interventions in 21 countries.



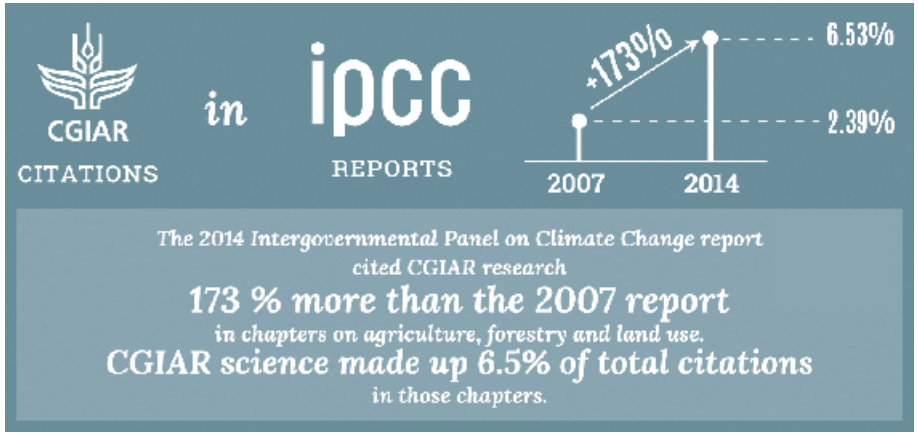
STEP 5

Inform global policies and processes

Global policies and processes need to provide incentives for climate-smart agriculture.

Informing the IPCC

CCAFS researchers made important contributions to the Intergovernmental Panel on Climate Change (IPCC)'s Fifth Assessment Report. The IPCC report sets the global context for decision makers in designing climate change adaptation and mitigation interventions within the agricultural sector. http://bit.ly/1RjIbEX



A common position for Africa

In order to push for the integration of agriculture within the negotiations under the United Nations Framework Convention on Climate Change (UNFCCC), the CCAFS East Africa team, working with the Common Market for Eastern and Southern Africa (COMESA), helped to facilitate a common strategy for African negotiators. As a result of this work, CCAFS research helped to shape the 2015 SBSTA submissions for a number of partners, including the African Group of Negotiators. http://bit.ly/1ZQfaXA

Global Alliance for Climate-Smart Agriculture

Many organisations have worked to establish the Global Alliance for Climate-Smart Agriculture (GACSA). Combining knowledge from governments, the private sector and civil society, GACSA aims to strengthen the food security and resilience of farmers around the world. http://bit.ly/1jwNruo

Developing deep partnerships

No-one organisation can hope to inform and influence global policies alone. Partners who help get messages out to global audiences include the Food, Agriculture and Natural Resources Policy Analysis Network (FANRPAN), the Technical Centre for Agricultural and Rural Cooperation (CTA), the Food and Agricultural Organisation of the United Nations (FAO), the International Fund for Agricultural Development (IFAD) and the World Bank.

Photo credit: D. Tenniston (CCAFS)

STEP 6

Scale up investments in CSA

Increased financial flows are required to support farmer investment in climate-smart activities, and these investments in turn need to be guided by sound knowledge of what works where and for who.

Investment for the future of coffee and cocoa

Researchers at CIAT have developed a detailed picture of the future impact of climate change on coffee and cocoa production which, in turn, has helped shape Nicaragua's National Adaptation Plan for agriculture. As a result of the policy, Nicaragua was able to acquire USD 24 million in investments targeted at developing the adaptive capacity and productivity of smallholder coffee and cocoa farmers. http://bit.ly/1GlUQXo

From engagement to investment

Through research and stakeholder engagement, CCAFS has informed investments in climate information services totaling over USD 10 million in Africa. In collaboration with core partners such as the World Food Programme (WFP), CCAFS will also help train agricultural extension workers in how to interpret, communicate and access climate information. http://bit.ly/1NjZbdu

Photo Credit: N. Palmer (CIAT)

A worldwide partnership

CCAFS is led by the International Center for Tropical Agriculture (CIAT) in collaboration with all 15 CGIAR Centers and 5 key university partnerships:

AfricaRice · Bioversity International · CIFOR · ICARDA · CIAT · ICRISAT · IFPRI · IITA · ILRI · CIMMYT · Centro Internacional de la Papa (CIP) · IRRI · IWMI International Water Management Institute · World Agroforestry Centre · WorldFish · University of Leeds · University of Oxford Environmental Change Institute · The University of Vermont · IRI International Research Institute for Climate and Society, Earth Institute | Columbia University · University of Copenhagen

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