

Facing climate risk management together in Colombia

With climate change altering the short-term weather and causing long-term climatic fluctuations, farming communities are becoming increasingly susceptible to climatic risk. However, with the help of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), a participatory approach is being taken to climate risk management. As a result of south-south collaboration, Local Technical Agro-climatic Committees (LTACs) have been established in local communities that enable farmers to make decisions based on knowledge of how local weather will affect their agricultural production. This has huge implications on local and international food security, and it is already becoming a necessity.

Agricultural communities are very sensitive to changes in both weather and climate, as significant changes can cause entire crop seasons to fail, triggering large alterations to income, as well as endangering local and international food security. Farmers face uncertainty in weather patterns over the short term and climate over the long term; more than one-third of agricultural yield variation globally is a result of variation in climate and weather. If farmers are to manage their crops well in the face of climate change, they will need to know how changes to weather and climate in their local region will affect their ability to successfully grow crops.

The traditional issue that farmers face is that they do not know what weather conditions or changes in climate their crops will be subject to once planted, leaving them vulnerable to significant change, which increases the risk of crop loss and can affect food security and the quality of life amongst farming populations.

However, with marked advances in climate science, as a result of international collaboration, it is now possible to predict changes in weather and climate with a certain degree of confidence. Combined with crop models that have improved to the point that it is feasible to predict how crops will fare under a range of climate conditions, farmers are now able to evaluate how to grow crops based on likely climate conditions. In order to be relevant, climate predictions should address local conditions so that farmers can make effective decisions about issues such as fertilizer and planting dates, employing climate risk management.

To make best use of this technology, the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) has developed and promoted a system of Local Technical Agro-climatic Committees (LTACs). These are groups of people that come together so that they can make better decisions about how to manage their farms and businesses with the help of individuals from state organisations and other local agencies, using climate prediction technology. This initiative is carried out with support from the CGIAR Trust Fund and through bilateral funding agreements and worked on by individuals such as Dr Loboguerrero, the Head of Global Policy Research at CCAFS and leader of the CCAFS Latin American Regional Program. With significant experience in leadership on partnerships and capacity for scaling climate-smart agriculture, she is perfectly placed to contribute to this work.

HOW DO LTACS WORK?

LTACs are groups that come together to discuss and analyse agro-climatic

Photo Credit: Andrew Jarvis (CCAFS - CIAT)



Colombia and Senegal: south-south collaboration shows its power for better climate risk management.



Senegalese inspiring Colombians on how to bring climate information closer to farmers so that they can make better decisions about their crops.



In Colombia, farmers are being empowered to make better decisions by putting climate information into their hands.

Photo Credit: Andrew Jarvis (CCAFS - CIAT)

Photo Credit: United Nations

forecasts, created by local and national agricultural sector institutions and technicians, and are based on local-specific information. The basic idea of the LTACs is that if farmers can access and understand locally relevant weather and climate forecasts, and how their crops will respond to these, they can make better decisions on how to manage their farms. LTACs rely on promoting dialogue among scientists, technicians, the private sector, decision makers and farmers to design and implement effective actions to reduce agro-climatic risk. LTACs adopt a participatory approach - a basic premise of the process is that knowledge-intensive practices require learning through interaction and shared understandings. At their most basic level, LTACs allow open and clear dialogue about seasonal climate forecasts and help devise measures to reduce crop losses.

While CCAFS initially provided technical support to the committees by assisting with their organisation, training and development of methods, LTACs have grown as a result of capacity building within local and national institutions, guaranteeing their stability and sustainability. CCAFS is no longer involved in the committees as the capacity has been built, both in local and national institutions. Notably, capacity at national level guarantees the sustainability of the initiative over time. LTACs are places for dialogue between diverse local actors. As such, each committee is different, and will come to their own decisions based on provided evidence.

These committees have become sources of empowerment; decision makers at the local levels are the key stakeholders.

HOW AND WHERE DID THEY START?

In 2013, CCAFS established a Climate Smart Village (a village in which local decisions are made about how the community should adapt to climate change) in Cauca, Colombia, together with a local non-governmental organisation, Fundación EcoHabitats. While this was being established, CCAFS also identified an existing scheme that was alerting farmers

38% of farmers in the region indicated that they had increased yields and reduced losses as a result of the LTAC's activities.

and indigenous groups to variations in weather. Together, these schemes brought together local town and municipal councils, small farmers associations, community action groups, and leaders of indigenous communities, and integrated them into a Participatory Agro-climatic Early Warning System (SAATP). The SAATP monitored local climatic conditions and the use of good environmental practices for water and associated risk.

Simultaneously, in 2013, the Colombian Government, through the Ministry of Agriculture and Rural Development (MADR), began a joint program with

CCAFS and the International Centre for Tropical Agriculture (CIAT) to mitigate the effects of climate change and climate variability in the country. As part of this initiative, an interchange was organised with a Climate Smart Village in Senegal. The aims of the senegalese programme were to empower farmers to make better decisions by putting climate information in their hands.

Subsequently, CCAFS invited a senegalese delegation to Colombia to share experiences, where they then met with local and national government agencies and producers

and farmers associations. There was such a positive reaction to this meeting that it was decided that an initiative would be developed that would enable farmers to make decisions based on relevant information. After the visit of the senegalese delegation and the political support from the MADR, CCAFS organised an informal meeting with multiple agencies to promote the initiative, which eventually led to the establishment of two LTACs (one in Cauca and another in Córdoba). MADR, CIAT, and the Turipaná Regional Center of the Colombian Corporation of Agricultural Research were instrumental in this process.

Photo Credit: J.L.Urrea (CCAFS)



LTACs allow an open dialogue among different stakeholders about seasonal climate forecasts to reduce crop losses.



Córdoba - Colombia LTAC: When farmers have access to local climate information that responds to their challenges they can make better decisions.

THE SUCCESSES

The LTACs have had significant successes. In Cauca, Colombia, as a result of government agencies and communities actively participating in LTACs, communities have been able to confidently plan with more reliable information on agro-climatic forecasts. There has been improved articulation between organisations, more agreements based on trust, freer interchange of ideas and communication, and greater capacity to use knowledge. In 2015 for example, the Cauca LTAC met 12 times, and based on the occurrence of an El Niño event (a meteorological event that causes rainfall levels to decrease in Colombia), a model was used to assess the likely response of crops commonly grown in the region. A plan was collectively decided upon, and farmers adopted a number of strategies to guarantee water supply, which included protecting rivers and streams and planning alternative planting dates to avoid the worst of the drought. After this process, 38% of farmers in the region indicated that they had increased yields and reduced losses as a result of the LTAC's activities.

This example is one of many; it is evident that farmers and rural communities can make better decisions if they have access to local climate information that directly responds to their challenges so that they can take grounded actions based on evidence that they themselves can see. The successes of LTACs show that

it is essential to promote conversations between scientists, technicians, the private sector, decision makers and farmers to implement effective actions to reduce the risk of agricultural sectors to the climate.

Given the success of the LTACs, and the urgency required to address agro-climatic risks, especially at the local level, the Government of Colombia has decided to include in its National Determined Contribution (which is a commitment in front of the international community) the establishment of at least 15 LTACs as a measure to promote food security and enhance adaptation to climate change and variability. This speaks to the effectiveness of LTACs; they have successfully informed policy in Colombia. Given that agriculture represents 6.3% of the country's GDP, this is an important step. The involvement of national government institutions is key to guaranteeing sustainability and scaling of this type of approach.

THE FUTURE OF LTACS

The process of establishing LTACs in Colombia is the result of a south-south collaboration approach between

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Senegal and Colombia. Through this collaboration, LTACs have now been initiated or developed in other countries such as Honduras, Guatemala and Nicaragua. There are now 31 LTACs in Latin America in seven countries, which have been implemented through the leadership of local and national organisations with support from CCAFS.

In time, it is expected that more communities will adopt the LTAC approach, given the success that it is having. Not only will CCAFS continue to provide technical input to the countries that are implementing the approach, but they are also in the process of creating a 'Manual for the Establishment of LTACs', which will provide step-by-step guidelines for implementing the approach.

The manual divides the approach into seven clear and logical steps that are carried out with participating institutions. Each step is based on what was covered in the previous steps. This is excellent news for agricultural communities who are on the front line of climate change, and could have a huge impact on international food security in the coming decades.



Behind the Research

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Research Objectives

The Local Technical Agro-climatic Committees (LTAC) are a tool for farmers to understand, use and benefit from agro-climatic information.

Detail

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Bio

Dr Loboguerrero is Head of Global Policy Research at CCAFS. In this position she plays a major role in leadership on partnerships and capacity for scaling Climate-Smart Agriculture. Dr Loboguerrero also leads the CCAFS Latin American Regional Program. Ana Maria holds a PhD on Economics from University of California, Los Angeles (UCLA).

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Collaborators

We would like to acknowledge co-authors of the paper, Bridging the gap between climate science and farmers in Colombia. *Climate Risk Management*, 2019; 22:67-81:

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Personal Response

How relevant do you think the role of LTACs will be in the coming years given the severity of expected climate change?

Climate change is already increasing the intensity and frequency of extreme events such as floods and draughts. Farmers' livelihoods will be more exposed each time to these drastic changes in weather conditions. Putting climate information combined with crop modelling analysis in the hands of farmers has the potential to become a game changer for reducing losses associated with climate events. Furthermore, farmers have the ability to respond to climate challenges if they actively participate in the definition of measures to address climate risks. The LTACs can become a key strategy to protect the livelihoods of millions of farmers around the world.

