

Putting farmers at the centre of climate information services

The PICSA approach uses participatory learning to help farmers apply climate information in their work

Highly variable rainfall from year to year makes it difficult for farmers to plan, and the wrong decision on which crop to plant, and when to plant it, may lead to disaster for a household. Part of the solution is improved forecasting and more information about historical climate patterns, together with wider options for adapting to those patterns. The challenge, though, is how to spread the information to farmers and help them apply it in their particular situations.

A team from the University of Reading in the UK, supported by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) and the World Food Programme, has decided to focus on not just providing locally appropriate climate information, but engaging and training farmers to better understand and use the information in their farming decisions throughout the year. The approach was piloted in Tanzania in late 2013 and is now being scaled up, with the goal of reaching farmers in 10 districts across Tanzania and Malawi by 2016. From 2015, it will also be introduced in several West African countries and Lesotho with support from CCAFS and International Fund for Agricultural Development (IFAD).

Fast facts

- ▶ In pilot trainings in Tanzania, farmers have received climate data together with participatory tools to help them evaluate their options and make on-farm decisions.
- ▶ Farmers reported changing planting practices, choosing new crops and varieties, and in some cases increasing their food security.
- ▶ The approach is now being scaled up in Malawi and Tanzania through training agricultural extension agents and NGO staff to provide climate information and decision-making tools.
- ▶ Ten districts plan to host trainings in 2015 as part of new national climate service programmes in both countries.

Making the data meaningful

The innovative approach is called 'Participatory Integrated Climate Services for Agriculture', or PICSA. Activities start well before the growing season, when farmers meet with a training team to pore over historical graphs of their region's temperature, rainfall and seasonal cycles. The data come from National Meteorological Services and cover up to 70 years. "Farmers are absolutely fascinated by this because they can compare their own experience with the records from the Met services," says Dorward.

Next the participants compare crop, livestock and livelihood options. They look for crops whose water requirements or season lengths match the recent climate trends and learn to calculate the probability of suitable conditions. Trainers share a list of potentially appropriate crops and varieties, but farmers make the final assessment — and develop their own coping strategies for their climate.

Later, before planting time, farmers receive a seasonal forecast and adjust their plans accordingly. A favourable forecast may prompt investment in riskier but more productive crops or in greater use of inputs, but if the forecast suggests a difficult season, farmers may ease up on applying expensive fertilizer or choose more drought-tolerant varieties.

Locally specific climate information reduces uncertainty and can help farmers to make better use of new seeds and technologies.

Such information can support complex and context-specific decisions about farm labour and resource allocation. In PICSA, households draw up participatory budgets and resource allocation maps to explore their current practices and alternatives. "Different options will be best in different contexts," notes Dorward, "and even in the same location, two neighbouring farmers may be better off using different options. For example, one neighbour might be wealthier and therefore able to take more risks and invest more."

Case study: PICSA into practice

In feedback sessions one year after the pilot training, communities discussed the results that were unfolding. Selina Sellas, a farmer and mother from the village of Makoja, Tanzania, described how things changed for her family:

I told [my husband], the rains are below average, we need to grow crops that are drought-resistant like sorghum and sunflower, and less maize.

I switched from 2 acres of maize to 1 acre, and I started planting drought-resistant pearl millet as it had very little possibility of failure. During the training we calculated that you will lose your maize harvest 7 out of 10 times.

I am happy that I changed it. It is all down to probability and I want to reduce my risk. I now have enough food for next year.

How to scale out

Although farmers themselves must decide on their best options, there is a vital role for professionals such as agricultural extension agents. Staff who already work with farmers daily are ideal for providing "climate services" — they are the bridge between the meteorologists who produce climate information and the communities who want it.

To find out more about PICSA please visit:

<http://ccafs.cgiar.org/PICSA>

To scale out PICSA, the Reading team has conducted 'training of trainers' with extension agencies and NGOs. "We have focused on practical, hands-on methods that can easily be picked up and used," says Dorward. In 2015, field staff in up to 10 districts in Tanzania and Malawi will learn these techniques and be equipped to rapidly spread climate information and participatory approaches to the farmers they work with.

The team behind PICSA is also working alongside National Meteorological Services to increase capacity to deliver climate service products that are of use to farmers and service providers. New text-messaging systems, for example, will give farmers instant access to forecasts. "Wherever possible the National Met Services staff are a key player at all stages of PICSA," says Roger Stern, also from the University of Reading.

All these efforts are under the umbrella of the *Climate Services Adaptation Programme in Africa*, launched by Malawi and Tanzania in 2014 as the first national-scale implementation of the UN's Global Framework for Climate Services.

With this framework as a foundation, PICSA aims to equip farmers to make the most of new and enhanced climate information services. By putting farmers at the centre, PICSA is helping to ensure that climate information becomes a game-changer for them.

Handbooks and resources for trainers and field staff

In 2015, the University of Reading team is launching a set of resources for those who are interested in using the PICSA approach or elements of it. A practical handbook for field staff to use in their work with farmers will be available online, alongside a training handbook for trainers and managers of field staff. These resources draw upon methods and examples from work to date in Tanzania.

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About CCAFS

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is a strategic partnership of CGIAR and Future Earth, led by the International Center for Tropical Agriculture (CIAT). CCAFS brings together the world's best researchers in agricultural science, development research, climate science and earth system science, to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security. www.ccafs.cgiar.org

CCAFS is supported by CGIAR Fund Donors, Danish International Development Agency (DANIDA), Australian Government Overseas Aid Program (AusAid), Irish Aid, Environment Canada, Ministry of Foreign Affairs for the Netherlands, Swiss Agency for Development and Cooperation (SDC), Instituto de Investigação Científica Tropical (IICT), UK Aid, Government of Russia, The European Union, New Zealand Ministry of Foreign Affairs and Trade, with technical support from the International Fund for Agricultural Development (IFAD).