bizcommunity

How to help farmers prepare for climate change

Floods as well as droughts and heatwaves are increasing and will continue to do so in Africa ar South Asia. Farmers and governments need to adapt to this changing climate regime. But adaptation requires decisions to be made under high uncertainty, often with incomplete knowledge. This makes planning and investing in it difficult.

By Dian Spear and Chandni Singh 27 Sep 2017

A. Davey via Wikimedia Commons

There is an increasing demand for short-term climate information like weather advisories. They are used most commonly to help people decide when to sow or irrigate their crops. For their part, seasonal forecas are used for decision-making by governments and NGOs, and by some farmers. But long-term informatio going from seasonal forecasts to decadal climate projections, isn't being used for planning. This includes anticipating and preventing disasters.

There is increasing evidence from across many African and South Asian countries that contextual, timely climate information, helps farmers manage the risks they face. This is particularly true when it's integrated with other information such as disease outbreaks or market prices and demand. The information can guide decisions on which crops to grow, when to plant them, what seeds to use, how to market the produce, and how to divide resources between farming and other livelihoods.

But there's less demand for long-term climate information. This is primarily because it tends to be highly uncertain and the scale of long-term climate projections tends to be too coarse. Also, policymakers find it difficult to justify investment and action based on what might happen far into the future. And there is typical a lack of institutional capacity to deal with long-term climate risks.

Other barriers to the use of climate information include: mismatches between personal or traditional belief and what climate information suggests, the availability of useful information at the right time, how it's communicated and to whom, and inadequate capacity to interpret provided information.

To overcome these problems, climate information providers must develop services tailored for different needs. This requires local, national, regional and international institutions to work together. They must also

work closely with vulnerable communities so that relevant climate information can be co-developed.

Notable exceptions

A number of initiatives in India and Africa illustrate the ingredients needed for the successful uptake and u of climate information. The Adaptation Learning Programme in Ghana, Niger and Kenya integrates nationa meteorological information with local rain data and traditional forecast knowledge. And in India, the Watershed Organisation Trust's innovative advisories are crop specific and include nutrient, water, pest ar disease management recommendations.

What makes these initiatives successful is that they:

- use participatory processes to communicate and interpret climate information, including multiple stakeholders,
- provide timely and scale-appropriate information, and link it to the potential effects on peoples' lives a livelihoods.

For long-term climate information to be used decision makers need to trust and understand the informatio In addition, it must be tailored to the local context, fit for purpose and available in time. There must also be relevant governance and institutional structures in place and an emphasis on the socio-economic value in subsequent decision making.

Benefits of short-term actions

Short-term actions that farmers take to cope with weather can help them adapt to long-term change. Wher people see progress, they learn how to plan. They may change their behaviour, restructure their systems and learn from extreme events like hurricane Harvey.

1. Behavioural shifts: For example, in Western Kenya, at the start of each rainfall season, seasonal forecast information is jointly produced by the Kenya Meteorological Services, sector experts and indigenous knowledge forecasters to help communities plan for rainfall extremes. Climate projections that demonstrate a warming trend can motivate people to start growing temperature tolerant crop varieties.
2. Restructuring the system: For example, in India, national investments in the mid-2000s helped develo a robust system of climate information services. The system produced forecasts, trained extension staff and held field demonstrations through regional agriculture universities. These investments slowl recognised the importance of climate information to manage risk. Forecasts are improving and the private sector sees the value it gets from investing in climate information delivery. Climate information increasingly being used in adaptation initiatives.
3. Sudden change: high impact extreme events like Hurricane Harvey or flooding in Mumbai can motivat swift action to set up infrastructure, increase investment and build capacity. Once in place, these initiatives can lead to longer term change. For example, in India, the super cyclone in Odisha in 1999, which killed almost 10,000 people, led to better early warning systems. It changed the way people thought and behaved. When cyclone Phailin hit the Odisha coast in 2016, the death toll was drastically reduced to 45 people, with lower losses to property.

As climate continues to change there is an increasing need for long-term information to be incorporated in

decision making. When this information is tailored to local contexts it can help people adapt.

This article was originally published on The Conversation. Read the original article.

ABOUT THE AUTHOR

Dian Spear, Southern Africa lead, Adaptation at Scale in Semi-Arid Regions, *University of Cape Town* and Chandni Singh, Research Consultant, *Indian Institute for Human Settlements (IIHS)*