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POLICY POINTERS

- Encourage farmers to adopt climate-smart practices
- Identify successful climate-smart agriculture practices and approaches for scaling them up
- Adopt a multi-sectoral approach to policymaking
- Invest in research of local crops
- Put agriculture at the heart of climate-change negotiations

Promoting climate-smart agriculture in ACP countries

Farmers will have to produce as much food in the next 40 years as they have in the past 8000 to satisfy the needs of the world's rapidly expanding population. Meeting this challenge will be made all the more difficult by climate change. Even a 2°C rise in temperature by the end of the 21st century – many projections suggest it is more likely to be 4°C – will lead to dramatic changes in agricultural productivity and land use.

At the Brussels Development Briefing on *Climate change, agriculture and food security: proven approaches and new investments*¹, experts highlighted the policies required to help farmers cope with climate change. Governments should promote policies that encourage 'climate-smart' agriculture, which integrates food security, climate-change adaptation and mitigation. They should also adopt a multi-sectoral approach to tackling the impact of climate change on food systems. Policymakers should promote financial incentives that encourage climate-smart agriculture. They should also encourage research into the best ways of helping farmers reduce greenhouse gas emissions and adapt to climate change. At the international level, agriculture should be at the heart of climate-change negotiations.



Farming is a victim of climate change which is leading to an increase in droughts

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THE IMPORTANCE OF AGRICULTURE

Farming activities are directly responsible for 10–12% of human-generated greenhouse gas emissions, and up to 30% if all farming-related activities, including the clearance of forests to make way for crops and pasture, are taken into account. Agriculture contributes a disproportionately high proportion of two high-impact greenhouse gases, nitrous oxide and methane.

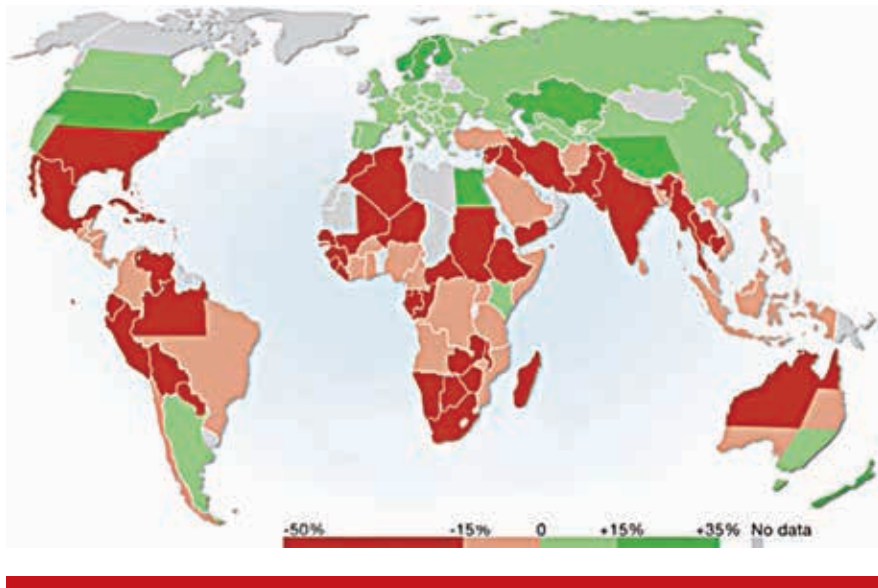
Farming is also a victim of climate change, which is leading to unpredictable patterns of rainfall, an increase in floods and droughts, and changes in the distribution of pests and

diseases. It is impossible to provide precise predictions for the impact of climate change, and there will be winners as well as losers – although the latter will far outnumber the former, with poor communities in developing countries suffering most.

In some parts of Kenya and Tanzania, growing seasons are likely to become longer as temperatures rise. But over most of sub-Saharan Africa, climate change will have a negative effect on food production, reducing crop yields by an estimated 10–20% by 2050. In the northern Pacific, rising temperatures could benefit fishing communities, as marine productivity increases. However, over much of the ocean climate change is likely to lead to coral bleaching, species loss and a decline



¹ Organised by CTA, the European Commission (DG DEVCO), the Secretariat of the ACP Group of States and the European NGO Confederation for Relief and Development (Concord), in partnership with the Climate Change, Agriculture and Food Security (CCAFS) programme of the CGIAR, Brussels, September 2012. <http://brusselsbriefings.net>



Projected changes in agricultural productivity 2080 due to climate change, incorporating the effects of carbon fertilization

“We can’t ring fence climate-smart agriculture – we must look at the whole landscape.”

Tony Simons, World Agroforestry Centre

in fish stocks. In the Caribbean, hurricanes may become less frequent but more intense, and there has already been an alarming rise in temperature over recent decades.

At the Brussels briefing, experts were united in their belief that we must act now. Farmers throughout ACP countries should be encouraged to adopt a range of activities that come under the heading of ‘climate-smart agriculture.’ These will help them to become more resilient to climate change and reduce their greenhouse gas emissions in ways that enhance rather than compromise their livelihoods. Just as importantly, climate-smart practices should increase food production. Indeed, climate-smart agriculture could be an effective way of tackling climate change and rural poverty.

POLICIES FOR A CLIMATE-SMART FUTURE

Encouraging farmers to adopt climate-smart practices

If smallholder farmers in ACP countries adopt practices which reduce greenhouse gas emissions, so much the better, but the priority must be given to climate-change adaptation. This could involve a range of strategies,

some incremental, others transformational. Conservation agriculture, which involves the use of minimum tillage, the retention of organic matter and crop rotation, can help farmers reduce their carbon emissions, increase crop yields and cope with climatic variability. Agroforestry, which involves planting trees on farmland, can sequester carbon, improve soil fertility and raise smallholders’ incomes. Where appropriate, policymakers should encourage these sorts of climate-smart activities.

They should also consider introducing measures which help farmers cope with the risks associated with climate change. These include index-based insurance policies, described later in this policy brief, and the provision of accurate seasonal forecasts. In countries such as Mali and Senegal, better forecasting is helping farmers to plan their agricultural practices, and choice of crops, more effectively.

Governments in ACP countries should also consider planning for major changes in agricultural production. Even relatively modest rises in temperature may force farmers to abandon the crops they have traditionally grown. For example, saltwater intrusion caused by rising sea levels is already affecting the production of taro, a staple crop on many Pacific islands. To counter this, research agencies are developing salt-tolerant varieties and farmers are experimenting with growing taro on raised beds. However, in some areas consideration is being given to replacing taro production with agroforestry. These sorts of strategies, planned well in advance, can help farmers adapt to climate change.

Adopting a multi-sectoral approach to policy making

Increasing food security and tackling climate change requires action on numerous fronts and should involve a wide range of government ministries, including those with responsibility for agriculture, rural development, trade, education and transport. Governments need to invest in a whole basket of activities to increase food production,

“Adaptation capacity for farmers are never just about technologies, it is a nexus of interventions, information and knowledge of finance services, land rights and assets and government institutions”.

*Sonja Vermeulen,
CCAFS*

develop climate-smart practices and tackle poverty.

The importance of a multi-sectoral approach can be illustrated by considering food waste. It is estimated that up to a third of all food is lost or wasted each year. This implies that a third of agricultural greenhouse gas emissions are in vain. Waste occurs during production, after harvest, in the distribution system, during processing and in the home.

Tackling waste therefore requires a range of activities, such as improving access to markets, providing better storage facilities, encouraging consumers not to waste food and reducing post-harvest losses on the farm. Policies which are designed to help farmers cope with climate change must work across a range of landscapes, from the village to the district to the country; and at a range of different biophysical scales, from the farm to the watershed. Frequently, this will require cooperation between different administrative and political entities, something which is already happening in some ACP regions. For example, in 2002, heads of state in the Caribbean established the Caribbean Community Climate Change Centre. This is coordinating the regional approach to climate change, and encouraging collaboration between ministries, research agencies, farmers' groups and non-governmental organisations.

Creating the financial incentives for climate-smart agriculture

Smallholder farmers in ACP countries require considerable financial support if they are to adopt practices which reduce their ecological imprint and help them adapt to climate change. In particular, policymakers, both nationally and internationally, should consider establishing transition funds. It can take three years before conservation agriculture leads to higher yields; and many years before agroforestry practices offer a return



Scientists take readings from hybrid rice varieties undergoing simulation of drought conditions

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on investment. Access to transition funds would help to cover the costs which farmers experience when adopting climate-smart practices.

Where upfront finance is not required, farmers can benefit from schemes which award payments for environmental services (PES). These might involve planting trees to sequester carbon or restore degraded land, or refraining from certain cultivation practices in order to protect downstream water supply. Insurance mechanisms can help farmers to offset climate-related risk. In 2011–12, 29 million Indian farmers – a quarter of all the country's food producers – signed up for index-based insurance schemes which indemnified them against crop losses caused by adverse weather. These schemes can be expensive – in India, the government provides two-thirds of the cost – but they help farmers to cope with droughts, floods and other climatic threats. As such, they inject much-needed confidence into farming at a time of considerable uncertainty.

Investing in research

Money spent on agricultural research is almost invariably money well spent. However, much more needs to be earmarked for projects related to agriculture and climate change. There is enough evidence to suggest that practices such as agroforestry and conservation agriculture can increase yields and incomes, sequester carbon and help farmers adapt to climate change. However, we

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“We don’t have time to wait for the UNFCCC to make decisions. We must act now.”

**Charlotte Streck,
Climate Focus**

still lack quantitative data. For most climate-smart agricultural production practices, there is an urgent need for research on which of the practices work best, where they have been successfully adopted by farmers, the barriers to adoption and, lessons for scaling up the spread of successful practices.

One example of this sort of research is the Mitigation of Climate Change on Agriculture (MICCA) programme, managed by the UN Food and Agriculture Organization (FAO). This is looking at the incentives required to encourage smallholders to adopt climate-smart practices and measuring the performance of different agricultural systems in terms of food production, carbon sequestration and adaptation to climate change. Governments and research organisations should continue to invest in projects which are developing new varieties of crops and livestock to cope with the changing climate.

Putting agriculture at the heart of climate-change negotiations

In 2011, delegates at the 17th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) agreed to include agriculture in future technical discussions, and agriculture was referred to the convention’s Subsidiary Body for Scientific and Technological Advice (SBSTA). This could lead to the establishment of a work programme on agriculture. A SBSTA work programme would put agriculture at the heart of climate-change policy-making and ensure that smallholder farmers in ACP countries have full access to climate-change finance. ■

Further reading

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