Insuring against climate

Negotiators push for policies to help weather natural disasters.

Farmers in the Ethiopian village of Adi Ha have been busy sowing fresh crops of grain in recent weeks, as is customary when their maize crops struggle because of drought. But this year, they have a second backstop against hunger: insurance.

In Adi Ha, farmers can pay a one-time fee of US$5 to $30 to cover their crops of the grain teff, used to produce the flatbread injera. Depending on how much rain falls on this particular swath of the northern highlands in August and September, policies pay out up to five times the premium. The arbiter will be a satellite, marking the first time that scientists have used space-based observations to fashion contracts at the level of individual farmers.

Unlike standard crop insurance, which requires on-the-ground audits, any payments will be distributed automatically according to a set formula, helping villagers to keep food on the table and buy seeds to start over again next year. "Teff is insurance for these farmers, so by insuring teff we are strengthening their insurance," says Daniel Osgood, a researcher who helped develop the policy at Columbia University's International Research Institute for Climate and Society in New York. Oxfam America and the insurance giant Swiss Re are also involved.

Adi Ha is one of dozens of pilot 'index insurance' programmes that are popping up throughout the developing world as governments, non-profit groups and aid agencies look for ways to help poor communities — and in some cases countries — cope with natural disasters. The idea has now taken root in the United Nations' climate talks; many delegates will be pushing to incorporate insurance policies into a deal at the climate summit in Copenhagen this December.

Leading the effort is the Munich Climate Insurance Initiative (MCII), whose members include reinsurance companies, research groups and agencies such as the United Nations Development Programme. The MCII's proposal combines incentives to help communities prepare for natural disasters in a two-tiered programme: a climate-insurance pool would pay for major disasters in developing countries, and a second tier would promote public–private insurance systems to pay for broader implementation of index and other types of insurance programme.

All told, the proposal could cost around $10 billion annually, says Koko Warner of the United Nations University in Bonn, Germany, who manages the MCII initiative. "The hook would be that in order to qualify for insurance programmes, countries would have to show that they are actively engaged in risk reduction," she says. "Developing countries agree to reduce their risk, and then developed countries would provide an insurance package."

Warner says that references to climate insurance go all the way back to the original United Nations Framework Convention on Climate Change signed in Rio de Janeiro in 1992, but only in the past couple of years has the concept really been integrated into international climate negotiations. In addition to fairly widespread support among developing nations, the European Union has said that it is willing to explore the idea, Warner says, and the steadfast opposition from the United States during the George W. Bush administration has softened under President Barack Obama.

Perhaps the biggest stumbling block is the hard-line position being taken by island

US Congress revives hydrogen vehicle research

US funding for hydrogen-fuelled transportation research got a boost on 17 July as the House of Representatives voted to restore $85 million to the research budget. The administration of President Barack Obama had proposed cutting the funds altogether.

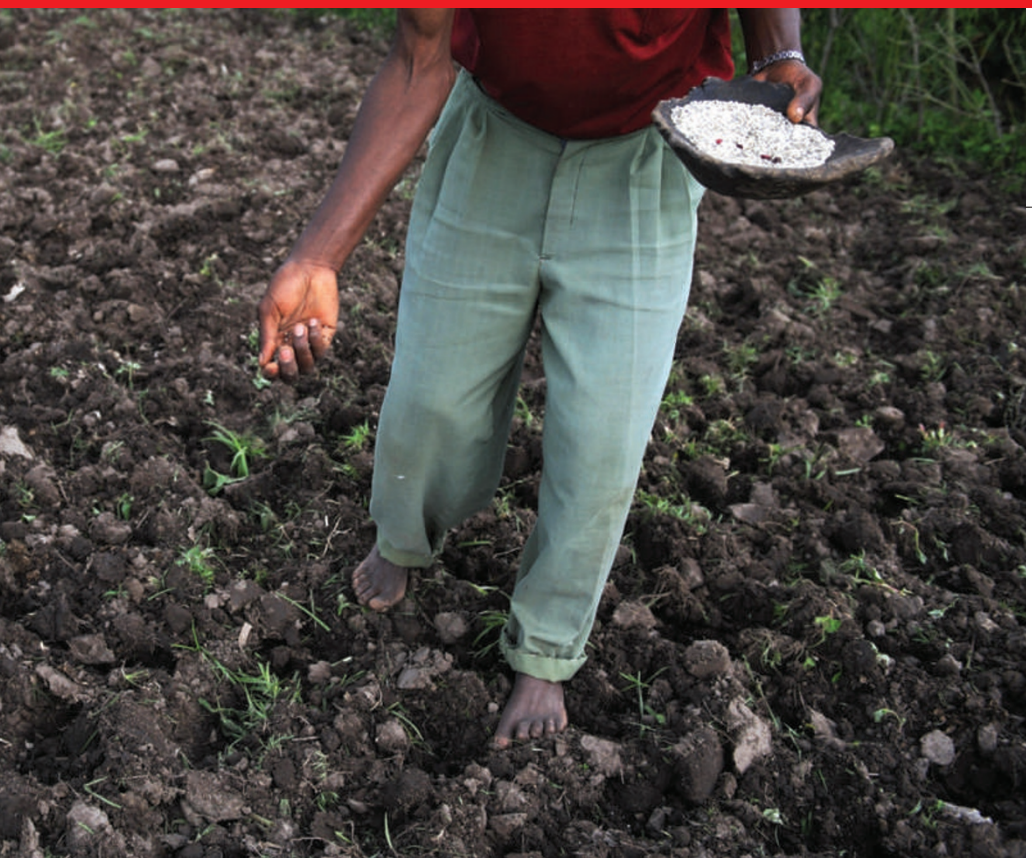
In May, energy secretary Steven Chu sparked an uproar when he proposed slashing current spending on research into hydrogen-based energy technology by 60%, from $168 million this fiscal year to $68 million in 2010, and cutting funding entirely for work on hydrogen vehicles. Former president George W. Bush made hydrogen transportation a cornerstone of his energy research strategy, but Chu said biofuels and batteries offer a better short-term pathway to reducing oil use and greenhouse-gas emissions.

Advocates both among scientists and on Capitol Hill have rushed to defend the hydrogen programme in recent weeks. It seems to have worked: the House included a total of $153 million for hydrogen-energy research in its version of the 2010 energy and water spending bill.

In the Senate, appropriators have provided $190 million for hydrogen research — a 13% increase over the base budget for 2009 — although the full Senate has yet to take up the legislation. A final bill is unlikely to come for another few months, but some level of funding for hydrogen vehicle research is likely to survive.

Also last week, a National Research Council (NRC) panel weighed in on the debate with a preliminary report on the FreedomCAR and Fuel Partnership, a research consortium involving industry and government. The NRC committee endorsed the general thrust of the transportation research agenda of the Department of Energy (DOE) but said it is concerned about efforts to scale back work on hydrogen-fuelled transport. Citing the long-term potential of hydrogen fuel cells, the panel said it is not yet clear which vehicle technologies will prevail in the market.

"There was no disagreement on the DOE's approach to put more emphasis on nearer-term technologies, but we felt that the long-term, high-risk, high-payoff



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Farmers are looking for backup plans in case their crops fail.

nations. The Alliance of Small Island States has proposed a mechanism that is similar to the MCII proposal but with one key difference: its members want outright compensation, rather than just insurance, for long-term problems associated with issues such as ocean acidification and rising sea levels.

Responsible action

The word 'compensation' raises concerns in industrialized nations, who don't want to sign a blank cheque, but the alliance isn't backing down. Many see the language as a warning to industrial nations regarding the costs of inaction. "If you are one of these low-lying atolls in the Pacific, would you say 'thank you very much' to a deal that submerges your island over time?" asks M. J. Mace, a negotiator for the Federated States of Micronesia. "If there's a deal, it's got to address impacts, one way or another."

One potential compromise under discussion would be to include an insurance mechanism in whatever deal is struck and then acknowledge the long-term compensation issue in a more symbolic manner.

To date, the best model for large-scale multilateral insurance may be the Caribbean Catastrophe Risk Insurance Initiative. Launched in 2007 with $47 million in funding from several international donors, the index insurance pool now provides hurricane and earthquake insurance to 16 Caribbean nations.

Much as the Ethiopian policy is tied to rainfall, the Caribbean policies are based on observations of wind speed and earthquake intensity. That saves money on site audits and speeds up the process, providing money immediately after a crisis when it is needed most. "It gives them a bit of breathing room," says Simon Young, the Washington DC-based head of the non-profit firm Caribbean Risk Managers, which manages the programme.

So far, the Caribbean programme has paid out nearly $1 million for an earthquake that affected St Lucia and Dominica in 2007, and $6.3 million to the Turks and Caicos Islands after Hurricane Ike last year. Young says that their models try to take into account factors such as building codes and other preventative action, which should lower premiums as well as lessen damage during a storm.

Insurance advocates acknowledge that spreading insurance tools around the globe would benefit developing nations regardless of global warming, as illustrated by the Caribbean initiative. But fears about increased droughts, floods and more severe weather that could be associated with global warming have added momentum.

"Climate change is more or less a new impulse for promoting this," says Thomas Loster, chairman of the Munich Re Foundation, a non-profit philanthropic branch of the German reinsurance giant. "But of course we should have done it 20 years ago." ■

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CLIMATE TARGETS FOR SHIPS DEFERRED
Pollution to be cut back but no deal on carbon dioxide.
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activities should not be abandoned, in particular those related to hydrogen fuel cells," says Vernon Roan, a retired professor from the University of Florida in Gainsville who chaired the panel.

Pat Davis, who manages the DOE's Vehicle Technologies Program in Washington DC, says the department requested the report to update its vehicle research plans. He called the report "highly favourable" in general, but acknowledged that the administration has a different view of hydrogen research.

Hydrogen fuel cells combine hydrogen and oxygen to generate electricity, producing only water vapour in the process, and they have already powered prototype vehicles. Fuel cells are expensive, however, as would be the infrastructure required to support large numbers of hydrogen-powered vehicles on the roads. And although renewable energy sources could be used to produce hydrogen, at present it is generally made from natural gas in a process that also produces greenhouse gases.

Nonetheless, hydrogen's advocates say they are making progress on all these fronts, in part thanks to support from within the DOE itself. Byron McCormick, who headed the fuel-cell programme at General Motors until he retired in January, was a member of the DOE's own technical advisory committee on hydrogen fuel cells. He resigned this spring, however, frustrated because Chu had not reached out to the committee before proposing to slash hydrogen research funding.

"I decided that I had better things to do with my time than communicate with somebody who didn't seem too interested," McCormick says. He points to ongoing research programmes in Europe and Japan and says he found it particularly "disconcerting" that the Obama administration would make such an assessment, despite its emphasis on clean energy. "It strikes me as rather bizarre that the United States would be the only country backing away from such initiatives," he says.

Patrick Serfass, a spokesman for the National Hydrogen Association in Washington DC, says the DOE's proposal to slash hydrogen research surprised both businesspeople and researchers. Hundreds of pilot fuel-cell vehicles are already on the roads, and major car-makers are preparing to roll out hydrogen fuel-cell vehicles by the middle of the next decade, he says.

"This decision was not really made with a lot of outside opinion or outside input from the industry," Serfass says. ■

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