



SMALLHOLDER INNOVATION FOR RESILIENCE (SIFOR)

STRENGTHENING BIOCULTURAL INNOVATION SYSTEMS FOR FOOD SECURITY IN THE FACE OF CLIMATE CHANGE

Planning & Methodology Workshop, China, 22-28 October 2012

IIED and Centre for Chinese Agricultural Policy (CCAP, China)

Changes in climate are already adversely affecting many poor smallholder farmers in marginal areas where harsh natural conditions are being exacerbated. Yet these poor farmers also hold the key to adaptation — hundreds of crop varieties and related traditional knowledge and practices, which have been developed over centuries. Smallholders and indigenous farmers have always had to innovate to adapt to environmental and other changes. They have domesticated most of the crops we use today and are active plant breeders, conserving local landraces, selecting seeds for preferred and adaptive characteristic, and even crossing lines for crop improvement. Since 90% of the agrobiodiversity for the world's 20 major food crops was lost last century, these remaining pockets of crop diversity are crucial for food security in the face of climate change — not only because of their genetic diversity, but also because landraces are often more resilient (e.g. to drought) than modern varieties.

With the spread of modern agriculture and other pressures, agrobiodiversity is continuing to decline and farmer innovation is becoming weak in many areas. The solution to adaptation and food security is generally seen to lie only in modern science and technology, yet the delivery of scientific innovations to smallholders often replaces local diversity and weakens innovation capacity. Thus, there is an urgent need to strengthen smallholder innovation systems and to link farmer and formal seed systems for mutual benefit.

The goal of this new five-year project, funded by the European Union and UK aid, is to improve food security and resilience by enabling smallholder innovation and traditional knowledge systems to thrive in developing countries. The project will conduct research with traditional farmers in areas of significant crop diversity: potatoes in the Andean Potato Park, Peru; maize and rice in karst mountains, SW China; rice and millets in the Himalayas, India; and indigenous vegetables in coastal Kenya. It will generate new evidence of the role of local landraces and traditional knowledge in adaptation to climate change; develop practical approaches and tools to strengthen local innovation systems and rights; and promote more enabling policies to support smallholder innovation. Through participatory action research, including the development of seed registers, value addition and novel products, strengthening of farmer organisations, and Participatory Plant Breeding, the project will revitalise biocultural innovation for adaptation and food security.

The project was launched in October 2012 at a Planning and Methodology workshop in China, which brought together the research partners: the Centre for Chinese Agricultural Policy (CCAP, China); Asociación ANDES (Peru); Lok Chetna Manch (India); Kenya Forestry Research Institute (KEFRI, Kenya); and the International Institute for Environment

and Development (IIED, UK). The workshop developed a common vision and approach to link the different studies, and discussed the four key sub-objectives of the project:

- 1) Identifying Traditional Knowledge (TK) based (or 'bio-cultural') innovations that enhance productivity and the conditions which foster vibrant and resilient innovation systems.
- 2) Developing tools that strengthen the resilience of smallholder innovation systems and improve rights security.
- 3) Strengthening the knowledge, capacity and preparedness of farmers, including women and indigenous people, to sustain resilient innovation systems and agrobiodiversity.
- 4) Enhancing the understanding and commitment of scientists and policy makers from local to global level to make changes in policies and institutions for agriculture, biodiversity, climate change and intellectual property.

The partners agreed that the project will focus on 'biocultural innovations' rather than TK-based innovations since innovations emerge from the interaction between bio-ecological systems and culture/knowledge. The project will seek to strengthen 'biocultural systems' as a whole, recognising the close inter-linkages and inter-dependence between TK, biodiversity, landscapes, customary laws and cultural and spiritual values. It builds on a previous five year action-research project — *Protecting community rights over traditional knowledge: Implications of customary laws and practices* — which developed the concept of biocultural heritage/systems (see www.bioculturalheritage.org).

At the inception workshop in China, three main interrelated types of biocultural innovation were identified: Technological Innovation, Market Innovation and Institutional Innovation. These include autonomous innovations developed by communities, and innovations developed jointly with others (e.g. scientist or NGOs). Such innovations emerge from the interaction between the local biocultural system and external conditions and trends, which together determine *capacity* to innovate. 'Biocultural innovations' are derived from biocultural heritage, and include not only innovations developed in this generation, but also those inherited from previous generations.

In the first year, a qualitative study will be conducted in 35 focal communities to explore the type of innovation underway and assess capacity for innovation based on four key factors: people, institutional, networking and community factors. This will be followed by a quantitative survey on innovation, agrobiodiversity, livelihoods/food security and social capital at household and community levels, to establish a baseline for monitoring and evaluation.

National and international policy reviews will also be conducted in the first year to establish a policy baseline and start engaging with key policy fora, for example the FAO Treaty on Plant Genetic Resources for Food and Agriculture, the FAO Commission on GRFA, the Convention on Biological Diversity, the UN Framework Convention on Climate Change, and intellectual property fora (e.g. WIPO and UPOV). Scientists will be engaged through Participatory Plant Breeding in Peru and China, which we plan to extend to the Kenya coast and Indian Himalayas, and the lessons will be shared with international scientists and plant breeders (e.g. the CGIARs).



Smallholder Innovation for Resilience: Strengthening biocultural innovation systems for food security in the face of climate change is funded by the EU and receives co-funding from UK aid from the UK government, however, its work and outputs are the sole responsibility of the project Partners and can under no circumstances be regarded as reflecting the position of the European Union or the UK government.