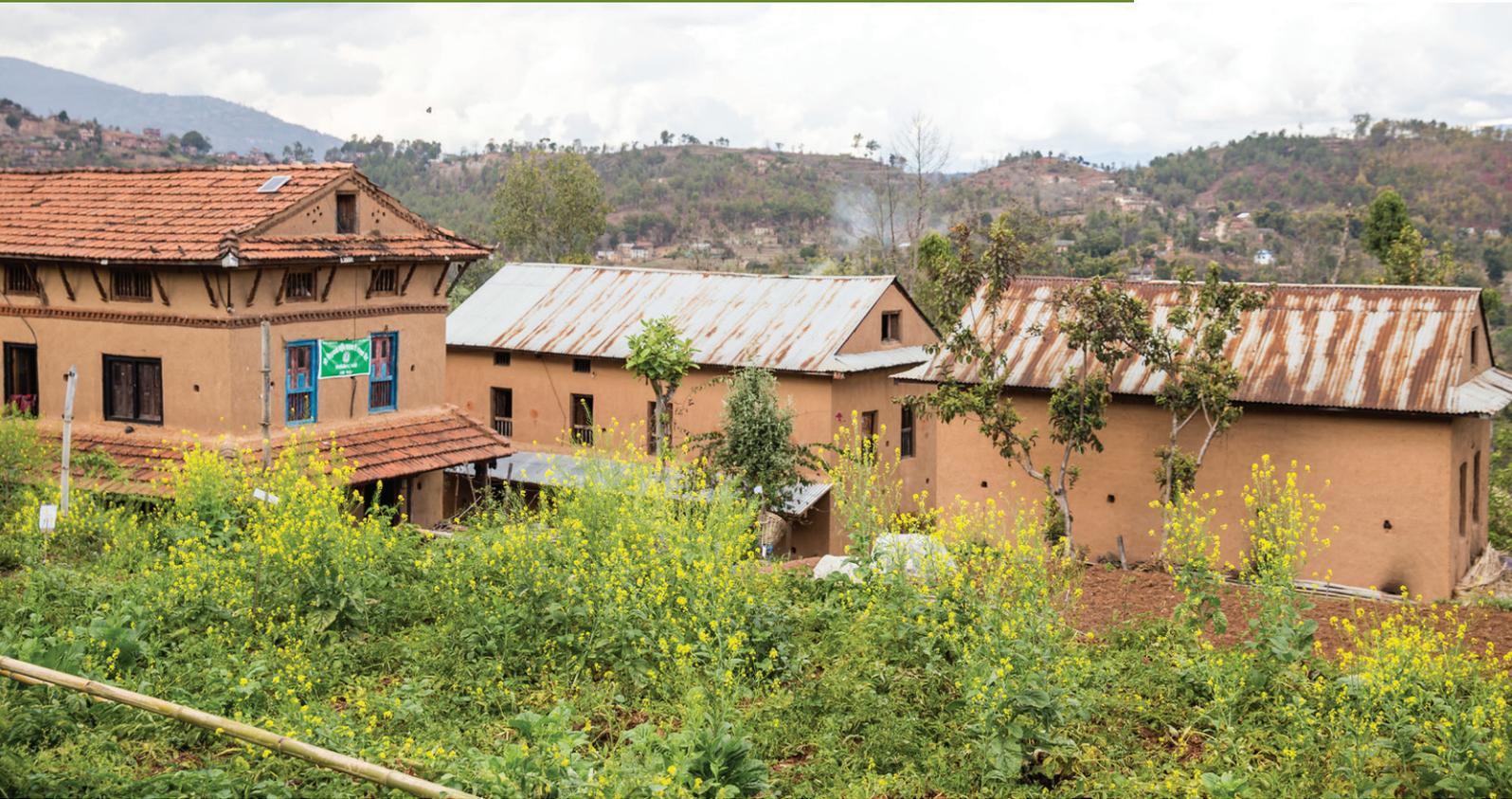


# Climate Smart Villages

## Building Affordable and Replicable Adaptation Pilots in Mountain Areas



The Hindu Kush Himalayas provide water, ecosystem services, and livelihoods to more than 210 million people living in the region. The rivers that originate in the mountains also provide fresh water to support more than 1.3 billion people in the river basins downstream, as well as the grain basket of Asia. Socioeconomic and environmental changes are threatening these resources and posing new challenges for the people living in the region, as well as the decision makers and practitioners supporting them.

Rural livelihoods must be strengthened so that people can withstand the many pressures they are facing while continuing to support sustainable development.

### Climate Smart Villages

Based on FAO's approach of climate smart agriculture – which combines the three dimensions of sustainable development (economic, social, and environmental) for an integrated approach to climate adaptation, resilience, and food security – ICIMOD has developed the Climate Smart Village approach, which is customized for mountain areas. The approach equips communities with tools to improve their resilience to climate change and other changes and fosters sustainable development, particularly of agriculture.

ICIMOD, together with its partner, the Centre for Environment and Agriculture Policy Research, Extension and Development (CEAPRED), has



Kavrepalanchowk (Kavre) is a hilly district with a varied climate ranging from subtropical to temperate. A site of significant agricultural production, Kavre is the source of a large portion of the agricultural products consumed in Kathmandu.

At one time, agricultural produce from Kavre was banned from Kathmandu's largest vegetable market because of the notorious use of chemicals by the district's farmers. However, farmers' interest in biofertilizers and biopesticides like jholmol is growing.



**Nutrient Smart:** Enabling sustainable growth in agricultural production and mitigating the negative effects of chemical fertilizers on soil fertility through effective nutrient management.

Hundreds of farmers were introduced to the production and use of the biofertilizer and biopesticide jholmol, which provides effective disease and pest control and supports improved plant health. One-hundred per cent of the participating households have adopted the technology, and local agro-veterinary shops have reported a decrease in the demand for chemical fertilizers and pesticides.

developed four CSV pilots in villages of Kavre District, Nepal, through its Himalayan Climate Change Adaptation Programme (HICAP). The pilots are working with 508 households in 18 farmers' groups, and 75% of the participants are women.

Based on the success of the model, two other ICIMOD initiatives are exploring the potential for implementation and uptake in other areas. HICAP will also engage with local governments and policy makers to scale up the CSV model. Climate smart activities implemented in the CSV pilots are as follows:

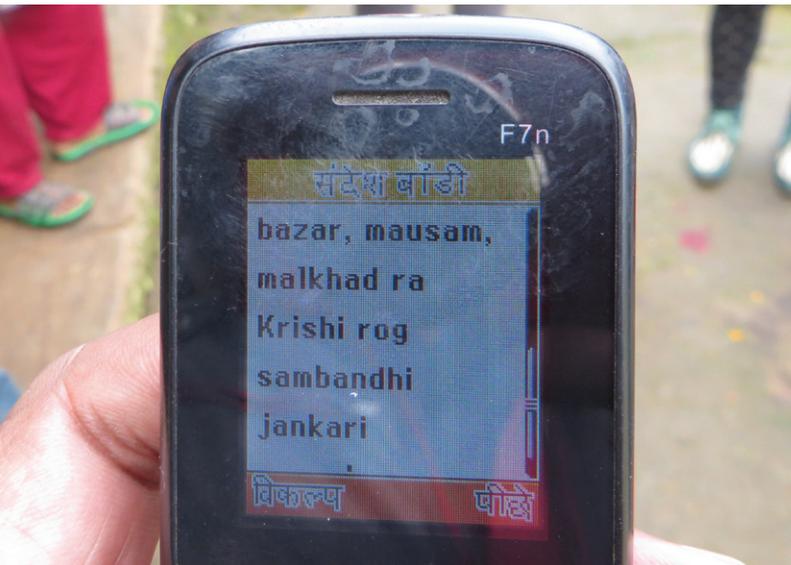


**Water Smart:** Addressing water scarcity and uncertainty using simple water collection and irrigation methods.

Work with Village Development Committees (VDCs) for the conservation of existing water resources is underway. The demonstrated efficiency of plastic ponds for wastewater and rainwater collection convinced farmers to build 158 such ponds themselves. Furthermore, the promotion of mulching has led to the wide adoption of the practice in the community. An increase in vegetable production has been observed as a result of greater water availability.

**Crop Smart:** Maintaining soil fertility and moisture through crop rotation, mixed cropping, and nitrogen fixation by intercropping.

Different crop varieties are being tested in multiple locations to assess their suitability for variable rainfall patterns and climatic conditions, as well as home gardening and integrated pest management.



**Future Smart:** Mitigating loss and damage, and securing vulnerable assets through training on the benefits and costs of insurance.

Information was provided to CSV communities on how to seek insurance from different companies, after which 153 people have purchased livestock insurance for 316 animals. CSV communities have direct access to government advisory services at district level.

**ICT Smart:** Bypassing language and technological barriers to provide critical information to farmers.

An SMS notification system was created to share information with farmers on weather and market prices, as well as technical messages focusing on pest management, land preparation, irrigation, weeding, fertilizer and harvesting.

Three local schools have been equipped with meteorological stations to gather data while providing students an opportunity to learn about climate change and its impacts on local agriculture and ecosystems.

**Energy Smart:** Supporting environmentally sustainable energy use.

In collaboration with and support from the Alternative Energy Promotion Centre (AEPCC), 24 biogas plants have been installed, with provision of technical support for regular maintenance. The pilot also supported the creation of 12 crop residue trial plots, which reduce the energy requirements for harvesting.

**“Climate Smart Villages have helped me move away from chemical inputs.”**

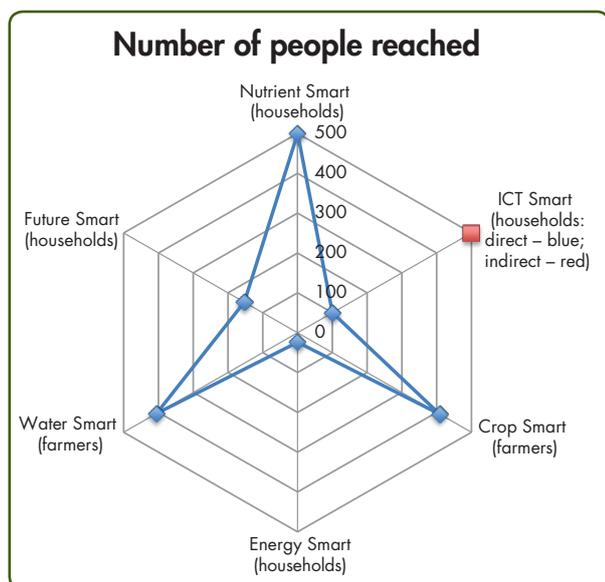
Kamala Timalina, from Patlehet-8, Kalchhe, is the secretary for one of the farmers' groups set up through the CSV pilot.

Timalina is very excited about the training she received on jholmol, and said that the biofertilizer has had positive impacts on her vegetable patch. She uses knowledge gained during the cowshed management training to efficiently brew jholmol from animal manure and crop residue sourced from her farm. As a result, her reliance on industrial fertilizers and pesticides has reduced significantly, increasing her savings. The plastic pond that she has set up in her household has also helped her retain much needed water for her vegetables, particularly during dry spells.

Timalina said that the CSV pilot has been a wonderful learning experience, and a very productive use of her time.

## The Future of CSV

As a dynamic pilot, Climate Smart Villages will continue to develop through the further application of simple, affordable, and replicable technologies and approaches by ICIMOD and partners. This process will take into account the results of initial activities and the evolving needs of farmers in order to continuously refine the climate smart model.



## Multi-level Collaboration for a Sustainable Approach

The project is supported by institutions at various levels: district development committees, agrovets, village development committees, district agricultural development offices, the Alternative Energy Promotion Centre, and insurance companies. This rich collaboration broadens ownership of the Climate Smart Village model, and helps to ensure the sustainability of the project's impacts.

As the next step, the project will also engage with local governments and policy makers for scaling up the Climate Smart Villages model to a wider context. The model has already been taken up by two other initiatives of ICIMOD for implementation in other areas.



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## For further information

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