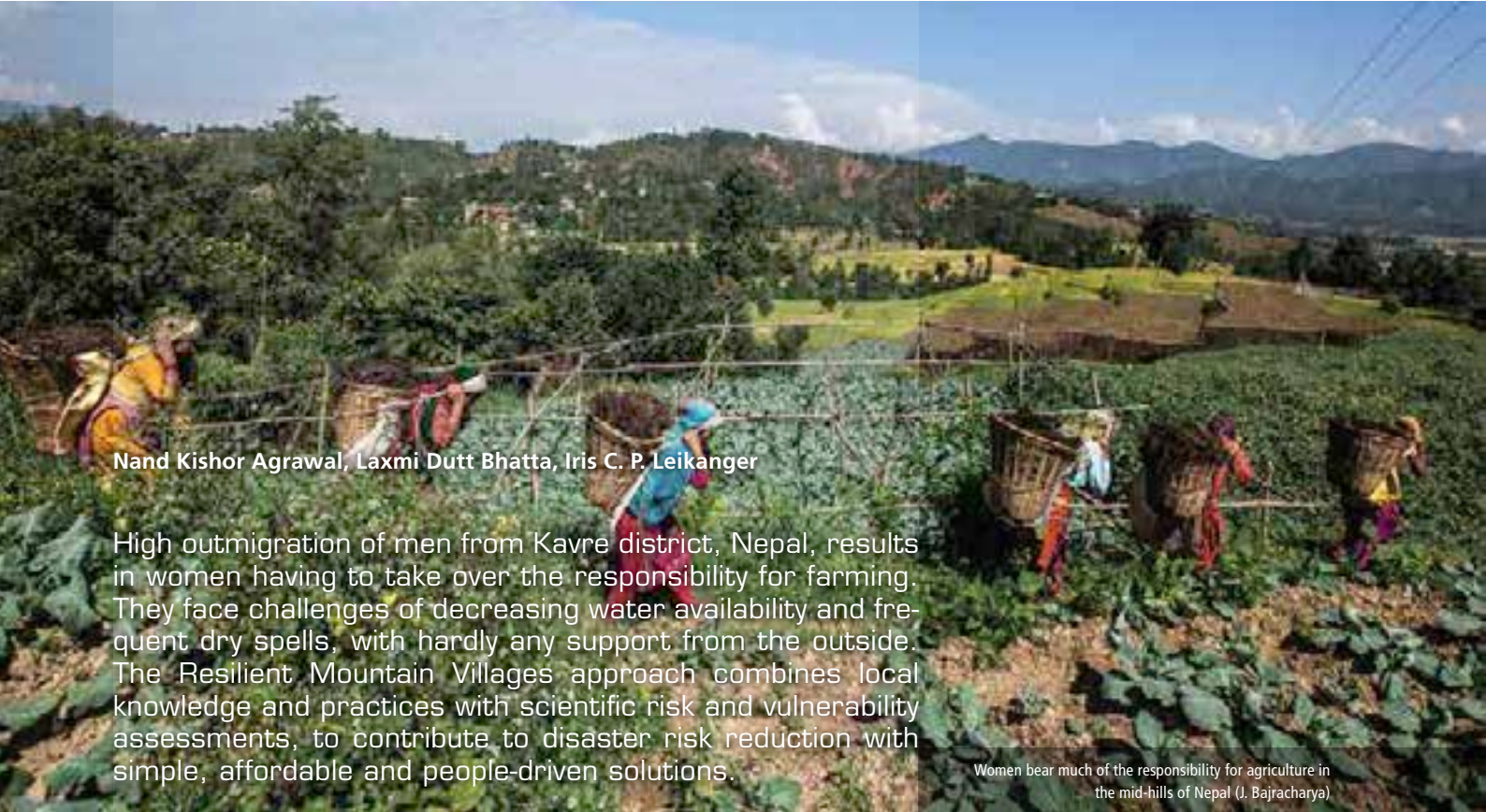


Women-centric approach to enhance resilience



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High outmigration of men from Kavre district, Nepal, results in women having to take over the responsibility for farming. They face challenges of decreasing water availability and frequent dry spells, with hardly any support from the outside. The Resilient Mountain Villages approach combines local knowledge and practices with scientific risk and vulnerability assessments, to contribute to disaster risk reduction with simple, affordable and people-driven solutions.

Women bear much of the responsibility for agriculture in the mid-hills of Nepal (J. Bajracharya)

In the past 20–30 years, an increase in hazard risk due to changes in rainfall patterns was observed in Kavre district, in the mid-hills of Nepal. Drought is the most severe challenge impacting agricultural production, the livelihood mainstay for over two-thirds of the population. In addition, crops are being affected by higher incidences of insect pest attacks. This in turn is forcing farmers to apply higher doses of “red-labelled” chemical pesticides, leading to severe health hazards to people and the environment.

The Resilient Mountain Villages (RMV) approach was developed by the International Centre for Integrated Mountain Development (ICIMOD) [1]. Since 2014, the approach has been applied in a pilot project in eight villages by the Center for Environment and Agricultural Policy Research, Extension and Development (CEAPRED). The project has directly benefited 1 089 households, out of which 13 percent are *dalit* and 21 percent are ethnic minorities. Female participation was high (83 percent), partly because the project encouraged women to join, but also because of the high level of male outmigration – in almost 40 percent of the households in the mid-hills, at least one man had migrated. Based on a risk assessment and participatory planning, the project addresses water scarcity, soil nutrition, crop productivity, information gaps, risk reduction and institutional linkages. The actions were deliberately kept simple and affordable to ensure easy uptake for farmers, and to enable practices to be shared by word of mouth among the communities not directly participating. Average investment per household was less than US\$ 100 in the first two years. District and village-level governments, district line agencies (e.g. agriculture, forest, soil and watershed management) and agroveterinary centres are the main stakeholders that support the project partly



“These smart practices helped me farm better, and added to my income. People now recognize me for my actions.”

Sita Neupane, who applies *Jholmal* – a biofertilizer and biopesticide made from cattle urine – combined with straw mulches, to address the risk of yield loss in times of drought [2].

Lessons learned



- People-centric climate change adaptation (CCA) and DRR practices need to be integrated into long-term development planning to enhance mountain people's resilience.
- Promote simple, affordable and replicable solutions that address villagers' key concerns and do not add additional risks for or burdens on women. Enable them to take charge of change without having to wait for external assistance.
- CCA and DRR activities that involve communities for shared responsibilities and decision-making and have the full ownership of local institutions are more likely to see wide uptake and effective results.

from their own resources, and are key to scaling up the approach at the national level. A project management committee has been formed representing all stakeholders, ensuring approval, monitoring and networking with other organizations.

Smallholder farmers are often conservative in their practices, and it took time to convince the participants to experiment with alternative approaches as they already face many risks due to changes such as natural hazards, climate change and reduced labour availability due to migration: If the trials failed, their risks would increase. However, an open-dialogue process engaging the community and local governments in decision-making helped the project to progress, and most of the farmers are now enthusiastically adopting the recommended practices.

The project takes a holistic approach to simultaneously address various aspects of resilience enhancement. A number of technologies and practices based on farmers' traditional as well as scientific knowledge are tested, demonstrated and disseminated.

Action Areas	Key Interventions	Results
Climate Resilience and Disaster Risk Reduction (DRR)		
Farming systems	<ul style="list-style-type: none"> – Cowshed management and introduction of <i>Jholmal</i>, a cattle-urine-based biopesticide and fertilizer – Improved cropping practices such as crop rotation, mixed cropping, intercropping – Testing of crop varieties for different rainfall patterns and climatic conditions – Manure and mulching to maintain soil nutrients 	High rate of adoption; <i>Jholmal</i> autonomously outscaled to other areas; 10–15% increase in productivity
Energy	<ul style="list-style-type: none"> – Promotion of biogas and solar energy through other schemes – Practices to reduce the amount of energy required for agriculture 	Shared ownership of line departments
Water	<ul style="list-style-type: none"> – Harvesting of rain- and wastewater using plastic ponds – Affordable drip and sprinkler irrigation 	Water conservation and productivity increase
Socio-Economic Resilience		
Gender equality	<ul style="list-style-type: none"> – Improve women's access to knowledge, tools and resources to sustainably manage households and farms 	83% of participants are women
Institutional development	<ul style="list-style-type: none"> – Strengthen women's and farmers' groups for peer sharing and decision-making – Work closely with village- and district-level governments to institutionalize practices and ensure ownership 	Shared ownership of community and government
Future Resilience		
Digital services and disaster preparedness	<ul style="list-style-type: none"> – Phone-based crop, weather and market advisories – Equipping schools with meteorological stations to gather weather data while providing students with an opportunity to learn about climate change 	Increase in farmers' bargaining capacity