GRAPE
Green Resilient Agricultural Productive Ecosystems

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ADAPTATION AND RESILIENCE BUILDING

Digitalisation in GRAPE

Introducing solutions to improve climate resilience and sustainability of agroecosystems

General overview

Digitalisation in agriculture refers to the integration of digital technologies and tools into agricultural practices to enhance productivity, efficiency, and profitability. In Nepal, the implementation of digitalisation in agriculture can bring significant benefits to farmers and improve their livelihoods. Particularly in the face of climate change challenges, digitalisation can contribute positively to the resilience of agricultural production.

Benefits

Climate-resilient agriculture: Digital technologies can help farmers adopt climate-smart agriculture practices that are resilient to climate change. For instance, digital tools can help farmers identify drought-resistant crops and pest-resistant varieties, optimise irrigation and fertilisation, and reduce greenhouse gas emissions.

Early warning systems: Digitalisation can enable the development of early warning systems that can alert farmers of impending weather-related disasters. This can help farmers take timely actions to protect their crops and livestock, such as harvesting crops early or moving livestock to higher ground.

Data-driven decision-making: Digitalisation can enable data collection and analysis that can help farmers make informed decisions about their farming practices. For instance, farmers can use weather data to decide when to plant or irrigate their crops or use soil data to determine optimal fertiliser application rates.

Market linkages: Digitalisation can help build resilient value chains that can diversify risks and create robust market linkages. For example, digital platforms can enable farmers to access markets and buyers in real-time, allowing them to quickly adjust their marketing strategies in response and find the best prices and suitable buyers.

Capacity building: Digitalisation can facilitate capacity building for farmers and extension workers on climate resilient agriculture practices. This can help farmers adopt sustainable farming practices and reduce their vulnerability to climate change.

Climate risk insurance: Digitalisation can support the outreach of insurance providers, especially to remote areas, and make the recording and verification of claims more efficient.

Our Approach

Digitalisation in agriculture has a big potential for positive development, which has already been utilised in similar agroecological systems in other countries (e.g. India). However, the adoption rate of smartphones and widespread network services is still limited in rural and remote areas of Nepal. GRAPE aims to harness the potential by supporting promising solutions and, at the same time, overcome existing challenges for adoption.

One digital solution: A simple digital solution is promoted that is easy to use and intuitive. GeoKrishi is a digital service that focuses on agriculture advisory and real-time information (i.e. weather forecasts and market prices). It has been active since 2017 and is the predominant digital solution in Nepal today. GRAPE collaborates with GeoKrishi as a promising digital solution in the project regions and to extend and improve GeoKrishi content in terms of climate resilient agriculture so that it is accessible not only to project regions but to all GeoKrishi users.

Advisory centres: Physical centres are set up in each GRAPE partner municipality that act as an information hub. The centres promote and support the use of digital services. They converge technological choices with customisable two-way responsive, and affordable options of the internet, SMS, call-centres, and webinar interactions with subject matter specialists. The staff engages with municipality representatives and agricultural experts as well as project beneficiaries, helping them to fully utilise digital advisory services.

Collaboration with SEED Innovations is currently set up to test digitalised climate risk insurance for crops such as potato, ginger, and citrus. Testing livestock insurance for goat is under discussion.

By combining GIS technology, satellite data, and information input from farmers, SEED innovations digitalise farms, follow up on interventions by farmers, and can verify damage reports within hours, allowing insurance companies to validate and settle claims efficiently.