GRAPE
Green Resilient Agricultural Productive Ecosystems

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ADAPTATION AND RESILIENCE BUILDING

Green Resilient Agricultural Productive Ecosystems (GRAPE)

Climate Resilient Agriculture

General Context

The agriculture sector is one of the key economic sectors in Nepal, engaging 66% of the population and contributing 27% to the national gross domestic product (GDP). Although the majority of the population is engaged in agriculture, its contribution to the national GDP is relatively low. Furthermore, the agriculture sector is highly climate-dependent; production and marketing systems are not sufficiently adapted to climate change, and the systems experience pressure on productivity, fertility of soils, storage, etc.

Climate change is univocal and widespread in Nepal, with a multitude of impacts on the country's agriculture sector. It has a direct impact on agricultural yield and productivity through changes in temperature and precipitation. Post-harvest activities are also affected by climate-induced disasters, e.g., storage suffers from dampening or excessive heat and cold. Particularly poor and marginalised farmers practising subsistence rainfed agriculture are highly sensitive to climate change.

Farmers produce less, and the quality of their yields suffers due to increased temperatures, decreased and more uncertain rainfall, and the increased presence of pests and diseases as a result of climate change. Barriers that prevent Nepali farmers from making significant progress on climate change adaptation include limited access to knowledge of climate-resilient agriculture practices, such as soil fertility, disease-resistant crop care, and irrigation practices. In addition, most Nepali farmers have limited access to high-quality inputs. These include improved (more climate-resilient and high-yielding) seed varieties and fertilisers, modern machinery, and markets.

GRAPE project is promoting Climate Resilient Agriculture (CRA) measures in all value chain functions – input, production, and trade of the selected value chains to combat the impacts of climate change. Inputs cover tools, seeds, and fertilisers; production covers soil management, water management, and crop management; and trade covers post-harvest handling, storage, and transport.

CRA promotion approaches

The project is taking two approaches to increasing farmers access to CRA technologies and practices: action research on climate resilient solutions and the roll-out of proven and tested CRA measures.

Action research on CRA solutions: Action research on innovative CRA measures that suit specific regions and markets is being carried out with the participation of value chain actors, including farmers at their farms. The aim of the action research is to strengthen the development of knowledge products to foster climate-smart, water-efficient production and marketing approaches. The research is conducted in collaboration with universities. Some of the research topics include: the effect of biochar uses along with different combinations and doses of liquid manure; field trials of climate-adapted varieties of vegetables, potato, ginger, and turmeric; comparison between plastic mulching and organic mulching for moisture conservation; evaluation of various locally made herbal pesticides, indigenous- and bio-pesticides for the management of woolly aphids in apple crops, etc.

Roll-out of proven and tested CRA measures: The aim of the roll-out of proven and tested CRA measures is to increase the application of climate-resilient, water-efficient production and marketing approaches through the capacity development of value chain actors and the scaling of replication measures. The GRAPE project is implementing CRA-proven measures through NGO partners and with GIZ staff. Some of the main activities include: production of liquid manure using locally available products, production of improved farmyard manures, establishment of soil-cement ponds and drip irrigation to increase water use efficiency, the production of vegetables inside plastic tunnels to protect crops from cold, heavy rain, hailstones, etc. Likewise, GRAPE is also promoting different, post-harvest storage technologies, such as rustic centres and cellar houses. The project has yet to promote the tested CRA solutions from action research as the results of the research are not yet finalised.

Target groups

The primary target groups are farmers, rural households, and small and medium enterprises (MSMEs), with the special aim of including women and marginalised groups. Furthermore, the project works with intermediaries such as producer groups and associations, forest user groups, cooperatives, agribusinesses, and traders.

Target locations

The project is active in 19 municipalities seven districts in the provinces of Karnali and Sudurpashchim.

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