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EMERGENCY AND EARLY RECOVERY SUPPORT TO FLOODS-AFFECTED FARMING HOUSEHOLDS IN WESTERN TERAI, NEPAL

March 2023

SDGs:



Country:

Nepal

Project Code:

TCP/NEP/3809

FAO Contribution:

USD 500 000

Duration:

December 2021-February 2023

Contact Info:

FAO Representation in Nepal
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Implementing Partner

Ministry of Agriculture and Livestock
Development (MoALD).

Beneficiaries

Smallholder farmers in flood-affected communities in
Western Terai.

Country Programming Framework (CPF) Outputs

CPF Priority Outcome 2: Enhance Resilience of Livelihood
to Climate Change and Natural Disaster Risks.



BACKGROUND

Nepal is highly vulnerable to climate change, hydrometeorological hazards and extreme events such as storms, floods, landslides and debris flow, and soil erosion. These hazards often affect the food and nutritional security of vulnerable households (HHs) as well as their livelihoods, with women and children representing the most affected population. Unseasonal incessant rainfall between 21 and 24 October 2021 triggered landslides in the hills, and flooding and inundation mostly in Western and Eastern Terai region and parts of Karnali. These constitute the main paddy pocket area in Nepal - the country's food basket. Substantial damage was caused in the agriculture sector, in both cropland and paddy crops, which were at the harvesting stage. This further increased the vulnerability of the Terai communities in the most severely flood-hit districts.

The Government of Nepal, including local government units, carried out an assessment of agricultural losses and damage in the affected areas. The conclusion was an urgent need to provide immediate agricultural recovery support to the impacted populations in order to protect their food and nutrition security, and livelihoods. In response to this need, in partnership with MoALD and the Ministry of Land Management, Agriculture and Cooperatives (MoLMAC), Sudurpaschim Province, and in close coordination with the affected and vulnerable municipalities and communities, FAO prepared agricultural recovery packages to assist the affected population to recuperate from the shocks and to resume its disrupted agricultural practices.

The project focused on building the resilience capacity of the flood-affected vulnerable HHs, supplementing the ongoing small-scale support for the recovery of agricultural livelihoods already being provided by the government and other key partners.

IMPACT

In order to support the agricultural livelihoods of the affected communities, project interventions included the distribution of improved and high-quality seeds, and the provision of training in associated best production management practices and technologies. In addition, beneficiaries were provided with year-round access to controlled irrigation systems through the installation of shallow tube wells (STWs) and the rehabilitation of a deep tube well (DTW). The agricultural input support and irrigation water facilities provided will have a multiplier impact in terms of better production and livelihoods, better nutrition and better environment, and will ultimately contribute to a better life for all beneficiaries.

ACHIEVEMENT OF RESULTS

The project originally planned to enhance the agricultural production capacities and livelihoods of 2 000 floods-affected households. This target was successfully achieved and, in some cases, surpassed. Under Output One, the project supported 3 309 HHs to rebuild their agricultural production capacities through the provision of improved and high-quality seeds of paddy rice, wheat, lentil and vegetables. Under Output 2, support was provided to the installation of 209 sets of STWs and the rehabilitation of one DTW in the vulnerable communities, assisting around 1 360 HHs to increase their controlled access to year-round irrigation and to resume agricultural production and livelihood activities on approximately 557 ha of land. Under Output Three, 39 local government officials and 155 STW users (25 percent of whom were women) were provided with training in the technical skills required to operate and maintain the STWs in order to enable their extended use and the efficient water management required by the crops. The support provided under these three outputs was crucial to ensuring the enhanced food production and livelihoods of smallholder farmers in the flood-affected communities in terms of their immediate and long-term goals. All support was provided under the leadership of, and in close coordination and cooperation with, local, provincial, and federal government units. The coordination mechanisms and participation developed under the project created ownership among the stakeholders.

IMPLEMENTATION OF WORK PLAN AND BUDGET

As the aim of the project was agricultural recovery all activities were planned and prioritized in consultation with farmers, farming families and other stakeholders. Risks associated with the timely delivery of inputs to catch the seeding and planting season, community and government support, and the implementation of project activities in rural and remote areas were properly managed. All COVID-19 health protocols, as prescribed by the World Health Organization and the government, were also followed. The overall approach of the project was thus designed to protect the livelihoods of the people and to build community resilience through equitable, green recovery, and sustainable risk reduction in order to enhance agriculture livelihood options in the flood-affected areas.

Unexpected heavy rainfall in October 2022 flooded the project areas and planned project activities such as paddy harvesting, lentil seeding and vegetable planting were delayed. Wheat planting, STW installation and irrigation rehabilitation were also delayed by one month.

FOLLOW-UP FOR GOVERNMENT ATTENTION

The project received adequate support from the government at local, provincial and federal levels for smooth and timely coordination and implementation. Project interventions included the provision of agricultural inputs and irrigation facilities that will have a multiplier effect if wisely used. For example, the improved varieties and high-quality seeds provided to farmers can be multiplied to reach a larger number of farmers in that locality for adoption and production. This can be linked with other government programmes such as that regarding on-farm seed multiplication, by working with selected farmers.



The project also supported 209 sets of STWs with year-round controlled irrigation facilities. The government can plan livelihood interventions linked with STWs and crop diversification, such as the introduction of high-value crops alongside associated best management practices of improved technologies in the flood-affected communities in order to enhance agricultural productivity and livelihoods. Extension services and technical support, with gender and social inclusion, are needed to enhance the optimum use of available resources by vulnerable, smallholder and marginal farmers. To protect flood-affected localities from flood hazards, the government, in collaboration with other agencies, should invest in other flood protection measures at household, farm and community level; these include preparedness works, the establishment of early warning systems, climate agro-advisory services, cropping calendar adjustment and check dam construction. Poor and vulnerable farming HHs should be fully capacitated with skills and a knowledge of best management agricultural practices for resilient livelihoods. The enabling environment for farming HHs and communities should also be strengthened and government at all levels should provide adequate resources to prepare an emergency response and early recovery in the event that such a calamity be repeated. This will require sufficient capacity-building at all levels.

SUSTAINABILITY

1. Capacity development

The project focused on building the capacity of flood-affected smallholders and marginal farmers by providing improved varieties and high-quality seeds of wheat, lentil, vegetables and paddy rice, together with training in associated best production management practices. Altogether, 155 beneficiaries (20 local government officials and 135 farmer-users of STWs) were trained and oriented in the operation and maintenance of STWs. Additional skills with regard to on-farm seed multiplication, selection and proper storage were also provided to allow farmers to conserve seeds for the following cropping season. Similarly, the project supported the installation of tube wells to provide farmers with access to year-round irrigation facilities.



Such support is crucial to enabling farmers to build future resilience to the impacts of climate change. In addition, the project built the capacity of local government technical staff and tube well users in the proper handling, operation, and maintenance of tube wells, as well as in the efficient use of irrigation water for crop production. It is expected that the trained local government technical staff will serve as trainers and provide technical guidance to farmers after the project is completed. The additional skills and experience they gained from the project will be useful when recovery programmes are prepared in the future.

2. Gender equality

Gender equality and inclusivity were part of the project throughout the processes of assessment, planning, prioritization and implementation. Women were given high priority during seed distribution and the selection of beneficiaries for STW installation. Female agriculture technicians mobilized by the project during seed distribution provided technical advice to farmers on proper seed selection and associated best production management practices. With project support, the cost of production was lowered and the workload of women farmers was reduced as a result of access to irrigation facilities; the subsequent increment in income has had a positive impact on their economic empowerment.

3. Environmental sustainability

The project supported the distribution of improved and high-quality seeds of different crop varieties that are suited to the locality and that have no adverse environmental impact. Sites with good yielding aquifers and potential for ground water recharge were selected for the installation of STWs at an adequate distance to avoid water table depletion. All the materials used for the STWs are durable and have no impact on the environment. The project provided electric motors to pump underground water, replacing the diesel pumps that are considered high carbon emitters. An efficient groundwater management technique for crop production, using polyethene delivery pipes to reduce the loss of water during conveyance, was introduced. This technique minimizes the carbon footprint without compromising crop productivity and the food nutrition of the flood-affected HHs and communities.



4. Human Rights-based Approach (HRBA) – in particular Right to Food and Decent Work

The overall goal of the project is the enhancement of livelihoods and resilience of flood-affected households vulnerable to climate change and disaster impacts such as floods and droughts. The project provided agricultural inputs and improved irrigation facilities to the food-insecure and vulnerable beneficiaries in order to enhance their access to nutritious food.

5. Technological sustainability

The project supported capacity-building in the planting of locally suitable improved and high-yielding crop varieties, and in the associated best production management practices that farmers and the farming community can sustain after the project. Local officials, technicians, and farmer-users of STWs were also provided with training in their operation and maintenance to maximize the capacity of the units and prolong their usage. The government has prioritized the provision of agriculture electric meters to farmers at subsidized rates for farm operations, enabling farmers to adopt electric-based water pumps at lower operation and maintenance costs.

6. Economic sustainability

The technologies promoted under the project are simple, locally adaptable and cheaper than their alternatives as they involve low operation and maintenance costs. The project supported electric motor-based water pumps that are durable, locally available and require nominal operation costs compared to the existing diesel-based water pumps, making them economically sustainable by beneficiaries.



ACHIEVEMENT OF RESULTS - LOGICAL FRAMEWORK

Expected Impact	Enhancement of livelihoods and resilience of households in floods-affected districts		
Outcome	Agricultural production capacities and livelihoods of floods-affected households restored and strengthened in the worst hit districts		
	Indicator	Number of most vulnerable households with restored livelihoods and production capacities.	
	Baseline	0	
	End Target	At least 3 000 HHs supported with agriculture inputs.	
	Comments and follow-up action to be taken	<p>In total, the project supported 3 309 flood-affected HHs through the provision of improved and high-quality seeds (paddy, wheat, lentil and vegetables), capacity-building and technical backstopping, STW installation and DTW rehabilitation. It was estimated that the distributed seeds would cover around 1 000 ha of farm land. The installation of 209 STW sets and the rehabilitation of one DTW contributed to year-round controlled irrigation for 557 ha of land. Agricultural production capacities were strengthened and the livelihoods of flood-affected resource-poor HHs were restored and made resilient.</p> <p><i>Follow-up action to be taken:</i></p> <p>Local municipalities should gather data on damaged farms, crops and animals from flood-affected households and communities. They should also assess the outcome of the support provided and establish how to sustain the implementation of project interventions. Electricity meters to subsidize electricity consumption should be provided to STW users/farming households; STWs/DTW irrigation water groups should also be active in the operation and management of the installed community infrastructures for proper water distribution and utilization for crop and vegetable production.</p> <p>Local municipalities should gather data on aquifers indicating ground water availability in the locality and suggest the suitable type of STWs, either single boring or T-boring, for installation. They should provide complete sets of safe pumping units and provide for irrigation water distribution without field losses. Support should be provided for the extension of electricity facilities in farms and the electricity transformers required to power STW/DTW operations at low cost.</p> <p>Local municipalities should assist in the rehabilitation of non-functioning community infrastructures and provide close coordination, supervision and monitoring to infrastructures to be constructed.</p> <p>Proper coordination mechanisms and the participation of federal, provincial and local level government at all stages of the project successfully created ownership and synergy building among stakeholders. Such mechanisms should be continued.</p> <p>The federal/provincial government, in coordination with local government units, should provide regular capacity-building to municipal staff and the farming community in new agricultural production technologies.</p>	
Output 1	Agricultural production capacities of 2 000 households increased through provision of improved agricultural inputs and technological support		
	Indicators	Target	Achieved
	Number of most vulnerable households supported with improved agricultural inputs.	2 000 HHs received vegetable seeds, 122 tonnes of cereal seed, including pulses.	Yes
Baseline	0		
Comments	In line with the planned target, the project procured and distributed, or supported the distribution of, improved and high-quality seed of paddy, wheat, pulses and vegetables to flood-affected beneficiaries in selected wards of the municipalities. In total, 3 309 HHs received the improved and high-quality seeds designed to enhance their production capacity. Beneficiaries were selected by the respective municipality officials, while ward and municipal officials proactively distributed the seeds to the flood-affected households.		
Activity 1.1	Procurement and distribution of the following: 2 000 composite packets of vegetable seed (spring/winter); paddy rice seed (spring/summer) - 82 tonnes; maize seed (spring) - 6 tonnes; pulse (lentil) seed – 4 tonnes; Wheat seed - 30 tonnes		
	Achieved	Yes	
	Comments	All the planned improved seeds were procured from government-owned entities, such as Agriculture Development Farm, Sundarpur, Kanchanpur, and Agriculture Inputs Corporation Ltd. Agricultural technicians from the respective municipalities carried out field-level distribution to intended beneficiaries, and monitoring and technical backstopping to enhance the agricultural production capacity of the flood-affected HHs.	

Output 2	Community facilities repaired and rehabilitated to ensure resumption of agricultural activities		
	Indicators	Target	Achieved
	Number of community facilities rehabilitated and accessed by the most vulnerable HHs.	40 STWs, 4 small-scale community-managed irrigation systems, 2 000 HHs supported with seed storage assets.	Yes
Baseline	0		
Comments	<p>A total of 209 sets of STWs (107 sets of single-boring and 102 sets of T- boring) was installed and one DTW rehabilitated to ensure the resumption of 557 ha of land, benefiting over 1 460 HHs.</p> <p>The selected municipalities are extremely vulnerable to the impacts of climate change and disasters. The flood-affected communities are faced by multiple vulnerabilities such as too little or too heavy rainfall, changes in rainfall pattern, and incidences of insect pests and diseases, as well as seasonal and unseasonal flooding every year, leading to significant damage of agricultural commodities, including ready-to-harvest crops. At the same time, the communities are solely dependent on rainfed farming and have low adaptive capacity to cope with climate crises. Following assessment and a request from the affected communities, and further substantiated by local government units and MoLMAC, Sudurpaschim Province, the project supported the installation of 209 sets of STWs, both shallow and T-boring. Each tube well supported groups of from 5 to 12 farmers, with an average of 7 farmers per group, providing year-round controlled irrigation facilities. Each STW set included pumping panel/bore, electric motors, control panel, polythene loose pipe for water discharges up to a distance of 100 m and service wire. These items were handed over to user groups in the presence of ward officials and users. The whole installation process was carried out through the leadership of the local government officials and monitoring was conducted by both parties.</p>		
Activity 2.1	Procurement and installation/repair of shallow tube wells in the affected/sand-casted areas to irrigate wheat, pulses and vegetable cultivation		
	Achieved	Yes	
	Comments	A total of 209 sets of STWs (107 sets of single boring and 102 sets of T- boring) was installed to ensure the resumption of 522 ha of land, benefiting more than 1 400 HHs.	
Activity 2.2	Spot repair of farmers’ managed small-scale irrigation schemes		
	Achieved	Yes	
	Comments	One DTW was rehabilitated to ensure the resumption of 35 ha of land, benefiting over 60 HHs.	
Activity 2.3	Procurement and distribution of hermetic bags to store grains and seeds (2 000 HHs)		
	Achieved	No	
	Comments	This activity was dropped based on the demand of the flood-affected farmers. The budget intended for the procurement of hermetic bags was allocated to the provision of additional STWs	

Output 3	Capacity of local government, farmers and stakeholders on skills and knowledge of agriculture practices for resilient agriculture livelihoods developed		
	Indicators	Target	Achieved
	Number of beneficiaries from government, farmers and stakeholders trained/oriented.	120 from local government, stakeholders and farmers.	Yes
Baseline	0		
Comments	A total of 155 participants was oriented and trained in the operation and maintenance of STWs, including efficient water management for crop production, and crops and livestock insurance. In the first batch, 20 local government officials, consisting of engineers, sub-engineers, agriculture officers, junior technicians and junior technical assistants, were oriented and trained. The participants also gained knowledge of efficient water use in crop production. The front-line staff is expected to deliver training, orientation and technical backstopping to users’ groups at local level after completion of the project. In the second batch, local government officials participated in ward-level orientation workshops to enable them to train the 135 users (25% women) who had taken part in the municipal-level planning and budgeting.		
Activity 3.1	Organize project orientation meetings with the stakeholders including farmers and decision-makers at federal, provincial and municipality level		
	Achieved	Yes	
	Comments	At the start of the project, a meeting with MoALD officials was organized for the approval of the implementation of project activities. A focal person for the project was assigned to provide overall guidance and coordination with provincial ministry and local government units. A MoLMAC official was also assigned as focal person for the project to ensure smooth coordination and implementation at municipal level. The MoLMAC focal person facilitated overall field-level assessment, activity and location identification, and implementation. The municipal-level officials participated in the orientation activities organized by the project. The coordination mechanism and participation at all stages of the project created ownership and synergy-building among the stakeholders.	
Activity 3.2	Organize training in vegetable production and management training to palika staff		
	Achieved	Yes	
	Comments	The project organized a one-day orientation-cum-training event for local government officials and STW users in order to share skills and knowledge on STW operation and maintenance. A total of 155 beneficiaries (25% women) including local government unit staff members, farmers and other stakeholders were trained and oriented in the operation and maintenance of STWs (20 local government officials and 135 farmers who are users of STWs).	
Activity 3.3	Organize lessons learned/review reflection workshops at local and national level on the project results		
	Achieved	Yes	
	Comments	Mid-year and end-of-year project reviews were organized at provincial level to share the status, experiences, lessons learned, actions taken and highlights of the project.	

Partnerships and Outreach

For more information, please contact: Reporting@fao.org

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CC6849EN/1/07.23