Nepal

Improving food security in a changing climate

Setting the scene

In Jumla, a remote district in the mountainous mid-west of Nepal, the majority of the population depends on rice grown in the river delta and various other crops for their livelihoods. The district is accessible only by a rough agricultural road to the central market, and additional food is difficult to import and, for most of the population, too expensive to buy.

Climate change, manifesting both as slow-onset changes and as more calamitous extreme weather events, threatens to exacerbate the already chronic food insecurity of the region.

Improved agricultural techniques that target the climatic causes of regional food insecurity, such as harvesting rainwater or constructing greenhouses, can dramatically increase farmers' yields in a sustainable way. But, developing effective solutions requires a detailed understanding of changing climatic conditions, and the impacts of these changes on multiple aspects of agricultural production.

Project overview

This project aims to build capacity within local communities to monitor weather patterns, analyse historical meteorological data and understand long-term climatic trends. This information can be used to identify and develop improved agricultural technologies, and to enable regional farmers to be more forward-thinking, by diversifying their crops to include those more likely to flourish under future conditions.

This project is designed to link in with a pre-existing holistic development program in Jumla, which is improving livelihoods, education, health and nutrition at a community level. Its objectives include:

- conducting a climate vulnerability assessment with local communities to complement a review of national climate predictions;
- building the capacity of local staff, community-based organisations and local government departments to collect, record and analyse weather and agricultural data;
- bringing farmers together to determine how meteorological data correlates with practical experiences, and to cooperatively develop options to minimise future risks;

Many previously forested hills in Jumla are now devoid of trees because locals are dependent on wood to cook and to build and heat their homes.

Healthy hill slopes prevent erosion, increase the water holding capacity of soil and help maintain healthy ecosystems.

- ensure that changes in environmental conditions, as expressed in local data and by farmers, are incorporated into the design of future development activities to maximise their effectiveness and better address the causes of food insecurity.

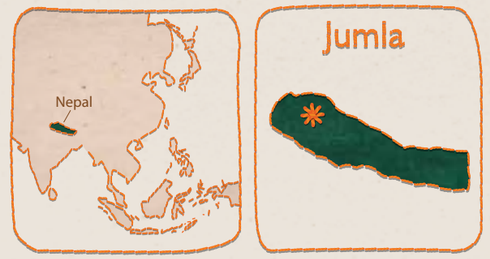
Targeting food insecurity through better information about changing environmental conditions

Key outcomes of the project so far include:

- establishing and analysing key areas of concern:
  a) unpredictable rainfall
  b) increasingly frequent heavy rainfall events which damage crops
  c) long-term decline in snowfall in the winter months which affects moisture levels in the soil during planting times

  This has resulted in proposals for improved agricultural techniques, such as rainwater harvesting to allow storage and strategic use of rainwater on sloping land;
- installation of a weather station, with local staff learning how to download and record temperature, rainfall, snowfall and wind speed data. An agreement with the local meteorological office enables sharing of information;
- collecting and analysing historical meteorological data in order to gain a better understanding of long-term local trends.
- identifying opportunities to improve food security in the face of an overall decline in monsoonal rains, including promoting potatoes as an alternative staple food to rice – as potatoes are producing much higher yields under current conditions;
- improvements to the design and management of household and community greenhouses which retain air temperature and soil moisture, allowing for the rearing of seedlings and the growing of a range of nutritious vegetables that are otherwise hard to cultivate year-round in Jumla.

By the end of the project, the initiative aims to have established data collection, analysis and dissemination practices that can be undertaken without external assistance. More importantly, it is seeking to embed the practise of examining quantitative data, correlating it with local qualitative evidence, and designing flexible, forward-thinking food security initiatives. The solutions being developed under this project are likely to improve local food security over the long term – despite the climate-related challenges in the region.



Project location: Jumla, Nepal

Target population (est): 130,000

Pilot project partners:
- World Vision Australia
- World Vision Nepal
- Jumla Bureau of Meteorology

Climate change adaptation:
- Soil erosion control
- Protecting water resources
- Natural resource management
- Food security

Project status: Pilot in progress

Total project cost: US$65,000

Next phase: Replication

World Vision staff engaging with community members