Reducing Climatic Risks and Building Resilient Communities

This Briefing Notes provides an overview of the response of Helvetas to climate change in Nepal. The negative effects of such change are often felt disproportionately by the poorest and most disadvantaged: Dalits, ethnic minorities, and women. We support vulnerable communities in building resilience to external shocks - fostering sustainable, adapted individual livelihoods and community institutions.

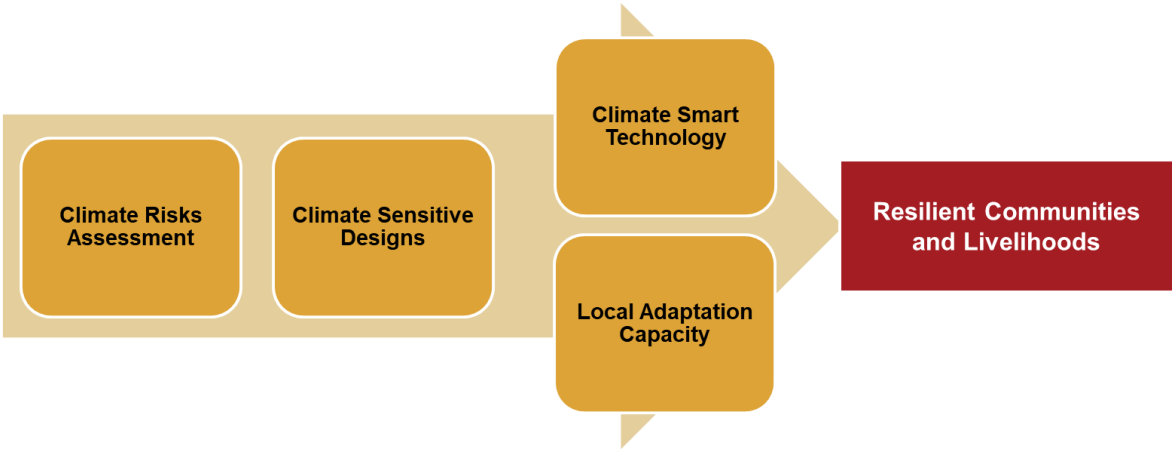
Lying in the middle of the Hindu Kush-Himalayan region, Nepal has an extremely rugged topography and a wide elevational range (60m to 8,848m). Whilst the climate is dominated by the monsoon with some 80% of rainfall occurring in the summer months, there are pronounced seasonal and spatial variations in precipitation due to topography. According to the Department of Hydrology and Meteorology (DHM 2017), all Nepal precipitation is in decreasing trend (1.3mm/year), but it is insignificant in the past 30 years. However, the number, timing, and intensity of rainy days is changing – leading to extreme events. Whilst there are regional differences, maximum temperatures are rising at an average annual rate of 0.056ºC across most of the country (ibid), with the number of warm days and nights increasing, and cool days decreasing. According the National Adaptation Programme of Action (2010), the most likely scenario is for mean annual temperature to increase by 1.2ºC by 2030, 1.7ºC by 2050 and 3ºC by 2100 compared to the pre-2000 baseline.

Such changing climatic norms have already impacted agriculture, water resources, biodiversity and rural access infrastructures in Nepal, and are likely to further do so in future. Water sources (*springs*) are drying in rural settlements that previously had abundant water. Torrential rain cause soil erosion, landslides and flooding - washing away bridges, roads, and sometimes whole settlements, with severe loss of life. New pests have emerged in agriculture, whilst the type and variety of crops suited to specific areas is changing, especially in response to rising temperature. In supporting resilient livelihoods, we work in a participatory manner – aiming to understand and build on the traditional knowledge of local people, complementing this with scientific knowledge on climate change adaptation.

Resilience *encompasses absorptive capacity, adaptive capacity and transformational response (Swiss NGO DRR Platform). Nepal's National Climate Change Policy (2019) and related policy frameworks also commit the country to enhancing its adaptation capacity, building resilience and building a climate resilient society. Helvetas Nepal ascribes to these global and national narratives. Present in Nepal since 1956, we have gained solid thematic competences in building the resilience of rural communities and smallholders to external shocks, including those caused by climate change.*

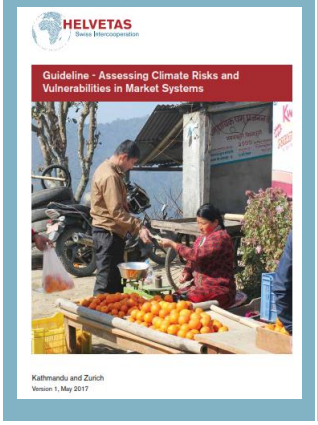
Our Approach in Reducing Climate Risks and Building Resilient Communities

Recognizing the growing risk to livelihoods posed by climate change, we work to build adaptive capacities at individual, household, and institutional level. At individual level, we promote adaptive livelihood strategies through skills and enterprise development, making labor migration safer, and supporting the productive use of remittances.



At household level, we work to ensure a safe and reliable supply of drinking water, a nutritious family diet, and a fairer distribution of household income and workload. At institutional level, we focus on strengthening the capacities of local governments in climate risk assessment and planning (LDCRP), developing climate smart solutions and developing implementation strategies that place the most vulnerable citizens at the center.

Risk Assessment



Globally, Helvetas has engaged in the development of various tools to assess climate risks and tailor appropriate solutions. In the Melamchi watershed area, we applied the Community based Risk Screening Tool-Adaptation and Learning (CRiSTAL) to assess climate-related risks in local water resource management under the transboundary water governance project Building Effective Water Governance in Asian Highlands. When facilitating municipal Water Use Master Plans, we ensure that climate change implications are addressed. In agriculture, we have used climate scenario mapping to predict the suitability of specific areas for long term crops such as coffee and nut-bearing trees. We have also developed organizational guidelines for assessing climate risk and vulnerability in market systems.

Climate Sensitive Designs	We design our programmes and projects based on the assessed climate risks. Testing, modifying, and scaling up innovative measures based on our existing experience is our approaches in all our interventions. We aim, as far as possible, to use local resources, and to draw on traditional know-how and practices. We highly respect the autonomous adaptation practices that are proven.

Climate Sensitive Designs: **Water**

In our Integrated Water Resources Management Program, we seek efficient water use at territorial (municipal) as well as very local level. Within micro-catchments or spring shed, we have widely implemented the 3R approach – recharge, retention and reuse of water. This includes measures such as recharge pits and ponds, planting vegetative cover such as grasses and leguminous shrubs, and spring revival measures. We also promote Multiple Use Schemes (MUS) whereby water is captured and used for different purposes - such as run-off from a domestic tap being directed to irrigate a home garden. Rainwater harvesting and solar pumps are other technologies used to ensure that communities experiencing water hardship have all-year-round drinking water

Climate Sensitive Designs: **Agriculture**

Through our various agriculture projects, we have extensive experience in promoting sustainable soil and water management practices such as mulching, the efficient use of farmyard manure, low tillage, polytunnels, and terrace improvements. We further support the judicious use of water through drip irrigation and farm ponds. We advise on the cultivation of appropriate crops, cropping patterns and crop varieties (considering drought, hail, frost and flood resistant properties as necessary). In seeking to minimize the use of costly pesticides that are potential harmful to human health, we promote Integrated Pest Management (IPM) – training farmers in the preparation and use of bio-pesticides but also in the timely recognition and control of specific pests and diseases (such as fall armyworm).

Climate Sensitive Designs: Infrastructure

Under a bilateral agreement between the Governments of Nepal and Switzerland (SDC), Helvetas has long provided technical support for trail bridge construction across the country. Trail bridge designs are now being adapted to the heightened risk of flooding and bank erosion. This includes micro piles foundations in Terai and river training measures to protect bridge foundations.

Road water harvesting pond for groundwater recharge, Dailekh

Danav khola trail bridge towers on pile foundation

Cultivation of legumes as forage crop

Adaptation Capacity at Municipal level

Helvetas strives to work in close collaboration with Nepal's government structures and institutions at all levels in strengthening the country's response to climate change. Following federalization, we work particularly closely with local governments (municipalities and rural municipalities). This includes, wherever possible, supporting them in developing their Local Disaster and Climate Resilience Plans (LDCRPs). We also support local governments in identifying those citizens most likely to require special assistance in adapting to the impacts of climate change.

Local Adaption Capacity at community level through schools:

Helvetas has also worked in schools to build community awareness about climate change and adaptation measures. Focusing on the integration of climate and environmental education into school curricula, the project Community Practice in Schools for Learning Climate Change Adaptation (COPILA, 2011-2016) worked in 17 government schools in Ramechhap and Sindhupalchowk raising awareness amongst teachers, pupils and local farming communities and introducing simple adaptation measures. Similar interventions are being implemented by the Integrated Water Resources Program in Karnali province through the Blue Schools intervention, in which pupils learn about the efficient use of water resources as well as the importance of hygiene and sanitation

Climate Smart Technologies

Helvetas strikes to be innovative and climate-smart – whether by tailoring existing technologies to local conditions or creating something new. Examples include the use of solar-powered pumps for supplying water to water-deprived communities in Karnali, the promotion of fuel-efficient stoves and the introduction of improved watermills in earthquake-affected communities of the Melamchi valley. In agriculture, Helvetas has worked with the National Agriculture Research Council through an SDC project to test various labor-saving technologies for women farmers including devices for mechanical weeding, jab planting, direct planting of rice seedlings, mini-tillers, and maize de-husking.

HELVETAS NEPAL

HELVETAS Swiss Intercooperation Nepal
Dhobighat-3, P.O.Box 688, Lalitpur Nepal
Phone: +977 1 5524026
Email: co.np@helvetas.org
Web: https://www.helvetas.org/en/nepal