

Climate change and agrobiodiversity

Strengthening adaptability and resilience

Over the past two years the Platform for Agrobiodiversity Research had synthesized information about the use of agrobiodiversity by indigenous and traditional agricultural communities to adapt to climate change. Based on the review of more than 200 case studies key adaptation measures have been identified, which are illustrated with examples in this poster. The full set of studies can be accessed on the Platform's website.

www.agrobiodiversityplatform.org/climate_change



The continuous process of experimentation and innovation based on traditional knowledge has led to a number of new practices.

In Burkina Faso, to fight desertification and rehabilitate degraded land, trees are planted in the fields and around villages with the zaï - a traditional water harvesting and soil improvement technique. The zaï, in combination with crop diversification, has resulted in the development of an integrated agro-sylvo-pastoral system with higher resilience to droughts.



Revival of traditional water harvesting and pasture management systems.

The Turkana pastoralists in northern Kenya, and Sukuma agro pastoralists in Shinyanga, Tanzania, have restored degraded woodlands through the revival of local institutions for natural resource management.

In drought affected Rajasthan in India, a community-led watershed restoration programme reinstated johads, a traditional rainwater harvesting system, which provide water for irrigation, livestock and wildlife. Restoration of over 5000 johads in 1000 villages has resulted in the restoration of the Avari River.



The protection and improvement of landraces

In a village in Nepal, 69 varieties of local rice landraces, many with drought-resistant and water-logging tolerant characteristics suitable to cope with adverse impacts from climate variability, have been reintroduced and used in a Participatory Plant Breeding programme to improve stress-tolerance and productivity.



Adaptation projects are often linked to the initiatives aiming to protect traditional knowledge and indigenous people's rights and cultural heritage.

The Potato Park in Peru created to protect the genetic diversity of local potato varieties and associated indigenous knowledge illustrates the link between agrobiodiversity and the protection of indigenous people's rights, livelihoods and culture. Indigenous Quechua communities have brought back from a gene bank into their fields over 400 potato varieties.



Women's initiatives to protect and reintroduce traditional crops and varieties have resulted in the establishment of community seed banks.

In Sri Lanka, the protection and cultivation of about 60 indigenous varieties of root and tuber crops is promoted through community seed banks. Indigenous roots and tubers tolerate a broad range of climatic conditions including prolonged droughts or rains.



Adaptability and resilience is enhanced through a strategy of diversifying the agricultural landscape, the species in the agricultural system and the variations within the species.

In Bangladesh, intercropping with fruit trees, crop-fish-livestock integration, diverse home gardens and traditional stress-tolerant crops and varieties, including saline-resistant cereals and vegetables, have contributed to the resilience of local food systems to climate change associated stresses including floods and droughts.



Ecosystem protection and restoration, landscape rehabilitation and reforestation decrease vulnerability to the effects of climate change.

Ecosystem-based initiatives aim to reduce the vulnerability to extreme weather events, droughts, excessive rainfall and seawater intrusion. In the coastal regions of Asia and Africa, communities have engaged in the restoration of mangroves, which function as a protection against storms and minimize the effects of sea level rise.