THE RESERVE ADAPTS TO CLIMATE CHANGE

Nor Yauyos Cochas Landscape Reserve, Lima and Junin regions of Peru

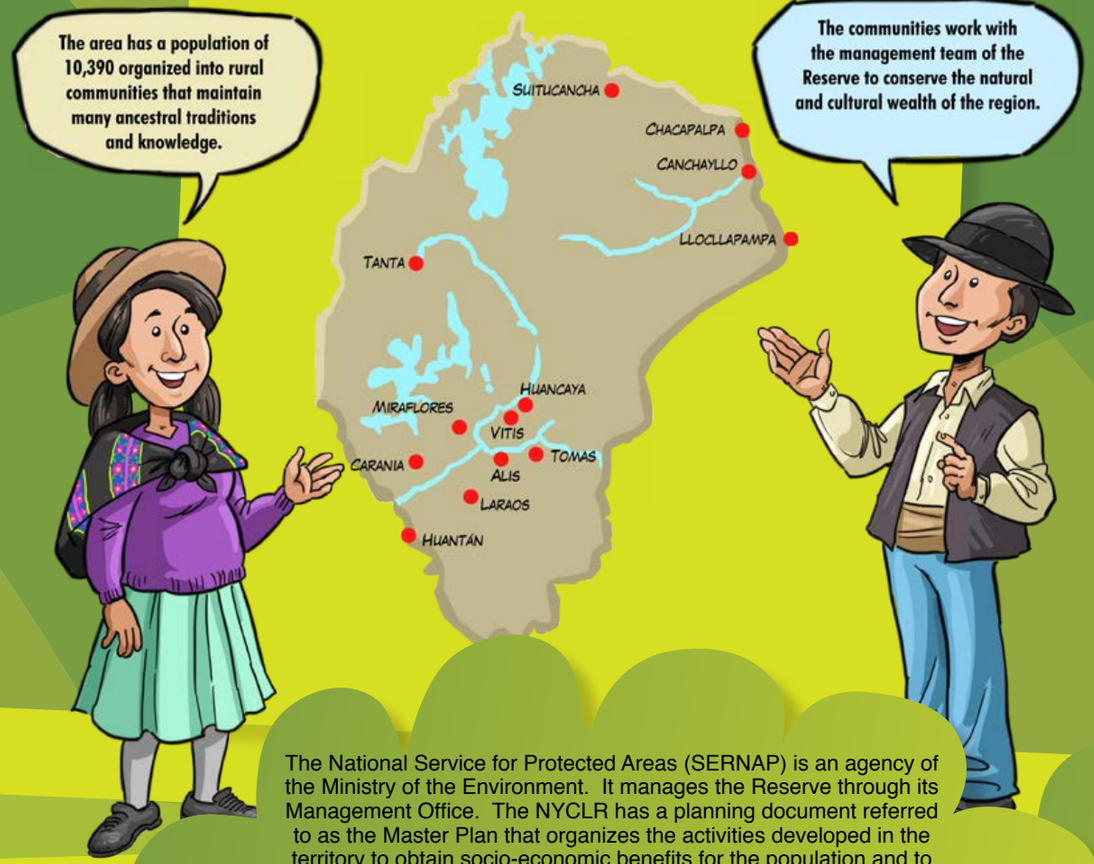
EBA mountain

Mountain Ecosystem-based Adaptation Project

NOR YAUYOS COCHAS LANDSCAPE RESERVE (NYCLR)

The RPNYC is located in the Central Andean Region of Peru in the Lima and Junin regions. It was created in 2001 to conserve the environments and landscapes of the Cañete and Cochas Pachacayo river basins. Natural wealth and the activities of rural communities that maintain their historical cultural values live together in harmony in this area.

Nor Yauyos Cochas is the first Landscape Reserve in Peru. Landscape reserves are areas that conserve environments that demonstrate harmony between man and nature.



The National Service for Protected Areas (SERNAP) is an agency of the Ministry of the Environment. It manages the Reserve through its Management Office. The NYCLR has a planning document referred to as the Master Plan that organizes the activities developed in the territory to obtain socio-economic benefits for the population and to conserve the environment.

BENEFITS OF THE NYCLR

The territory of the Reserve contains a large diversity of plants and animals that over time have become adapted to the different climate and altitude conditions of the Andean Region of Peru. It also contains numerous rivers and lagoons formed by rain water and melting glaciers that sustain the Reserve. This bounteous natural wealth is known as a mountain ecosystem. Some of the characteristic vegetation includes the forests (of queñoa, lloque, karkac and puya) and patches of scrubland, brushland and grasslands.

A large number of animals can be found here including Andean fox, puma, alpacas, llama vicugna, grey deer and many more.

The NYCLR ecosystems provide benefits to the communities: water, firewood, mineral resources and areas to plant food products and to raise stock. Also, because of its soil and vegetation, these ecosystems function like a sponge to store water, offering protection from drought and flooding. Plants also prevent soil erosion and clean the air. In addition these ecosystems provide opportunities for developing other economic activities such as ecotourism.

The benefits provided by Reserve ecosystems are being affected by lack of organization and practices such as overgrazing and burning pastures. Also the climate is changing and this causes further damage.

THE CLIMATE IN THE NYCLR IS CHANGING

The RPNYC climate has always been changing, but now temperatures, rains, humidity and wind vary a great deal from year to year, during the same year and even during the same day. This change in the Reserve climate, is also occurring in other parts of the world and it is referred to as climate change.

In the Reserve climate change is additional to other problems causing an impact on water, grasslands, plants and animals. It also affects communities and their economic activities.

CAUSES OF CLIMATE CHANGE

Greenhouse gases (GHG) are naturally found in the gaseous layer that surrounds the earth, called the atmosphere. These gases can hold heat and allow the atmosphere to function like a greenhouse. In other words, they let the sun rays into the earth and warm its surface and prevent heat from escaping, conserving it (greenhouse effect). This gives the earth an adequate temperature for all of us.

Humans, through their activities, have released great quantities of GHG over the years and increasing the quantity of GHG in the atmosphere. As the quantity of GHG increases, these hold more heat than before making the greenhouse effect stronger. This causes global warming and climate imbalance, which today we call climate change.

Human activities that generate Greenhouse Gases (GHG)

Burning fossil fuels (coal, petroleum and natural gas): used to produce electrical energy to operate vehicles, industries and homes.

Changes in land use: logging of forests and burning grasslands to extend areas for agricultural uses.

Waste: production of great quantities of waste in communities.

IMPACT OF THE CLIMATE CHANGE ON THE NYCLR

The benefits that the NYCLR provides depend to a large extent on climate, but climate change is affecting these benefits and the livelihood of the communities.

Testimony by park ranger, Jacinto Jimenez, on the impact of climate change on the NYCLR: "Blocks of ice are being lost near the Pariacacca glacier that is retreating due to global warming. We have also seen the loss of springs and emergence of new diseases that were not previously present in the Reserve, for example: scabies in sheep that did not exist 6 or 8 years ago"

Climate change in the Reserve causes:

...glaciers to melt.
...stronger and more frequent flooding, avalanches, drought, icing, hail, landslides and mudslides.
...water sources, such as ponds and springs to disappear during the dry season.
...planting seasons to change.
...planting at higher altitudes.
...pastures and crops to spoil.

Communities in the Reserve are affected because:

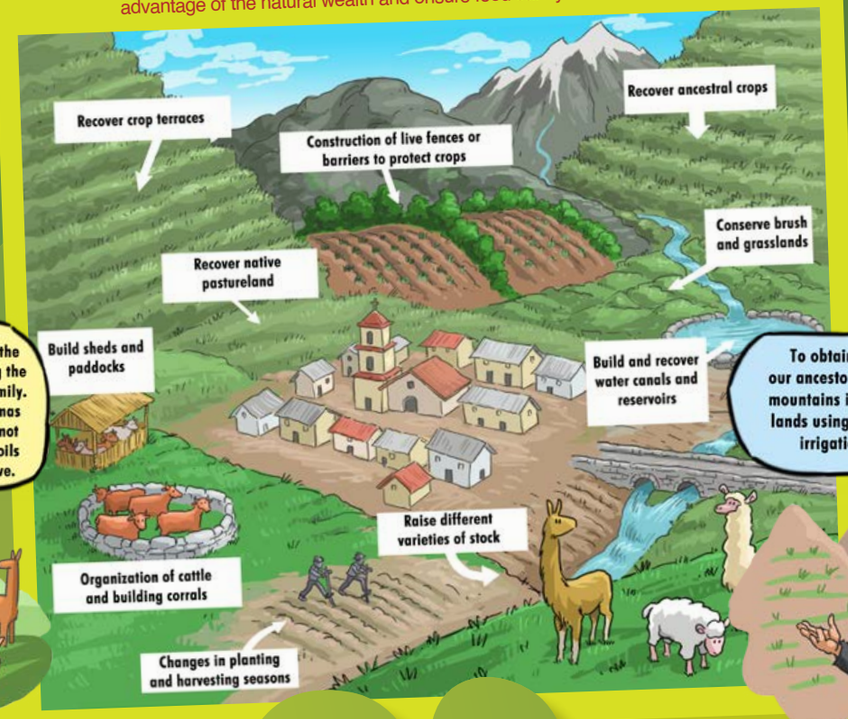
...reduced income from livestock.
...less food produced for families and for trade.
...higher costs of crops and livestock breeding.
...emergence of fungi, worms and insects that destroy crops.
...increased frequency of colds and flu in children and adults.

There are many ways to adapt. Keeping the Reserve healthy and conserving its natural wealth and benefits it provides is another way to adapt to climate change.

ADAPTING TO CLIMATE CHANGE

Measures to adapt to climate change are the actions that each community can take to be better prepared in the face of climate change. Adaptation measures seek to reduce the impact of climate change on the life and economy of the families and the environment.

The ancestral communities of the RPNYC knew how to face changing climate conditions and take advantage of the natural wealth and ensure food safety for their families.



Practice and revalue ancestral knowledge, supplementing it with other adaptation measures will permit families in the Reserve to be better prepared to face climate change in the future.

WHAT IS THE EBA PROJECT?

The EbA project carries out activities in mountain ecosystems to keep them healthy. Its objective is to demonstrate that, even if the climate changes, ecosystems will continue to provide benefits to the communities when used responsibly and conserved and restored.

Project members together with RPNYC management implement climate change ecosystem-based adaptation measures. The measures were prepared by an exchange of knowledge between communities, authorities and local researchers, as well as the technical and scientific contributions of diverse professionals.

The Nor Yauyos Cochas Landscape Reserve in Peru was selected to implement the project because of its natural wealth, ancestral knowledge of its communities, their social community organization for agricultural-cattle production and the commitment of their authorities and inhabitants to conserve the environment and historical culture.

ACTIVITIES CARRIED OUT IN THE RESERVE

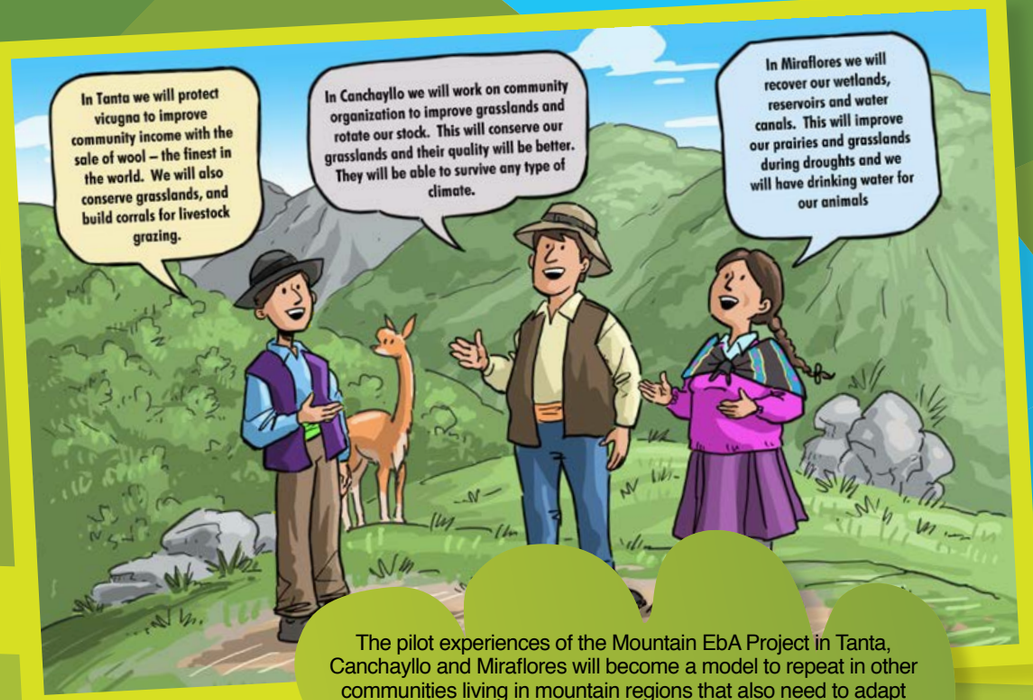
The Tanta, Canchayllo and Miraflores communities are developing ecosystem-based adaptation measures. These pilot actions, that help prepare to face climate change, strengthen conservation activities already carried out on the Reserve as part of the Master Plan.

What ecosystem-based adaptation activities are developed?

* **At TANTA** they are working on sustainable management of vicugna to obtain and commercialize wool, cattle organization and management of natural grasslands.

* **At CANCHAYLLO** they are working to store and conserve water by the reconstruction of canals and reservoirs. They are also developing a grassland and water management plan and local researchers are being trained, to strengthen organizations and technical knowledge in the region.

* **At MIRAFLORES** they are also developing a grassland and water management plan and training local researchers to strengthen community organization and technical knowledge of the population.



The pilot experiences of the Mountain EbA Project in Tanta, Canchayllo and Miraflores will become a model to repeat in other communities living in mountain regions that also need to adapt to climate change. That is why everyone's participation is so important!

The Ecosystem based Adaptation (EbA) in mountain ecosystems Programme is a collaborative initiative of the United Nations Environment Programme (UNEP), the International Union for Conservation of Nature (IUCN) and the United Nations Development Programme (UNDP), funded by Germany's Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB). In Peru, the programme is commissioned by the Ministry of Environment of Peru (MINAM for its Spanish acronym) and is implemented in the Nor Yauyos Cochas Landscape Reserve with the support of the National Service of Natural Protected Areas (SERNANP for its Spanish acronym). The activities under IUCN's responsibility are implemented in partnership with The Mountain Institute (TMI) in the communities of Canchayllo and Miraflores.

The Mountain Ecosystem-based Adaptation Program is implemented in the Nor Yauyos Cochas Landscape Reserve in Peru, the Himalayas in Nepal (Kaski, Parbat and Syanja Districts) and Mount Elgon in Uganda.

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