

# Adaptation to Climate Change in Morocco by Protecting Genetic Resources and Retaining their Fair Use

## Summary

Morocco's geographical position provides it with an exceptional range of very diverse bioclimates and hence a **great diversity of ecosystems**, species and genetic resources. These are important for the livelihoods of rural communities and the country's economic development. Many ecosystem services are being over-utilised or degraded, and their potential for use is increasingly **threatened by the impacts of climate change**.

The Government of Morocco is making extensive political and strategic efforts to conserve natural resources, namely biodiversity. The Government is being supported by a GIZ project that aims to assist state institutions in introducing methods and instruments for environmental protection and the sustainable and **efficient use** of ecosystem services. The risks associated with climate change have been duly taken into account.

## Challenge

The Kingdom of Morocco is home to a great diversity of ecosystems, species and genetic resources, which constitute an important basis for the livelihoods of rural communities and the country's economic development. But in Morocco there is a general trend toward biodiversity degradation and loss caused by both human interference and climate change (Fig. 1). At present, over 600 endangered species have been identified throughout the country, and of the 7,000 taxa comprising Morocco's fauna, more than 1,700 are considered as rare and/or threatened according to

a national study on biodiversity, representing a potential loss of 24% of plant diversity (Convention on Biological Diversity, 2010).

The **economic potential of ecosystem services**, such as natural products, genetic resources, and water purification, regulation and recharge, are currently being inadequately or unsustainably used. Many ecosystem services are being overutilised or degraded, and their potential for use is being increasingly threatened by the impacts of climate change.

The Government of Morocco is making extensive political and strategic efforts to conserve these resources, particularly biodiversity, taking into account climate risks in the development of affected sectors, including agriculture, nature conservation and tourism (Fig. 2). However, the responsible state institutions have thus far lacked the appropriate instruments for promoting the sustainable use of ecosystem services.

## Setup

GIZ has been working in Morocco on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) since 1975. The GIZ project 'Adaptation to Climate Change/ Implementation of the Nagoya Protocol (ACCN)' was launched in order to assist Morocco's state institutions in creating environmental instruments **for adaptation to the impacts of climate change**. The lead executing agency is the Ministry Delegate to the Ministry of Energy, Mines, Water and Environment responsible for the environment and the High Commission for Waters, Forests



Fig. 1: Soil erosion is triggered by climate change impacts, endangering vegetation and fields in the valleys



Fig. 2: The protection of wild mammals pose many problems in MENA countries

and Combating Desertification. The project shall last through June 2016. To consolidate the previous results of the ACCN project in the field of climate change adaptation, biodiversity and ecosystem services, a follow-up GIZ programme is planned on behalf of BMZ entitled 'Environmental and Climate Governance' (January 2016–December 2018).

## Opportunities

Since 2013 the government has been supported by a GIZ project which aims at assisting state institutions in introducing methods and instruments for the sustainable and efficient use of ecosystem services. The risks associated with climate change must be duly taken into account. The programme's capacity development measures are focused on three areas of action:

1. safeguarding and sustainable use of ecosystem services with the consideration of climate risks;
2. expansion of a regional monitoring and advisory system for climate change adaptation and biodiversity management;
3. development of a legal and institutional framework for the access and benefit-sharing mechanism (**Nagoya Protocol**) and consideration of ecosystem services and climate change adaptation in national strategies and programmes.

Across all three areas of action, the programme is placing a particular focus on promoting **cross-sectoral coordination and cooperation**. It is concentrating its efforts on the southern region of Souss-Massa (Agadir) as well as Beni Mellal-Khénifra in the Middle Atlas. The programme efforts complement other German and multilateral development cooperation activities.

### Nagoya Protocol

'The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) to the Convention on Biological Diversity is a supplementary agreement to the Convention on Biological Diversity. It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of benefits arising out of the utilization of genetic resources. The Nagoya Protocol on ABS was adopted on 29 October 2010 in Nagoya, Japan and entered into force on 12 October 2014'.

<https://www.cbd.int/abs/about/>

The Nagoya Protocol has been ratified by Morocco. It shall preserve local communities' access to local genetic resources and prevent international biopiracy.

As part of the project, a capacity development programme was developed for incorporating **ecosystem services** and **climate change adaptation** into regional and municipal development plans and is currently being implemented. Those involved in the Regional Observatories for Environment and Sustainable Development (**ORED**) from the regional authorities and municipalities in the pilot regions are receiving support to strengthen their roles and responsibilities related to climate change adaptation.

Sustainability standards were developed for local **ecotourism** in the Souss-Massa pilot region, particularly for protected areas as well as the **argan forest and its products** (Fig. 3). The basic groundwork for certification was created among Moroccan ecotourism providers.



Fig. 3: Argan tree in Souss-Massa region

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The programme is helping to **improve regional environmental governance**. A monitoring system for climate change adaptation was established for the OREDD in the pilot regions. In cooperation with the stakeholders and all regional actors, the programme developed and agreed upon indicators for climate change adaptation and **biodiversity management**. The programme laid down obligations regarding roles and responsibilities for the collection and provision of **climate and biodiversity data**.

The **Observatoire National de l'Environnement et du Développement Durable** (National Observatory for the Environment and Sustainable Development) decided to apply this innovation across all of Morocco's 16 regions (wilayas), integrate the collected data into the **Regional Environmental Information System** (SIRE) and incorporate this into municipal **planning processes**.

## Outlook

**Lessons learned:** Achieving goals such as protecting the environment, preserving biodiversity or adapting to climate change requires much more than just appealing to decision makers or the public. The GIZ ACCN project shows the way. It includes (a) the development of the legal and institutional framework in support of the Moroccan Government; (b) awareness raising; (c) incorporation of ecosystem services and climate change adaptation into regional and municipal development plans; (d) improved environmental monitoring; (e) assistance in making use of Morocco's biological resources; and many other aspects. This holistic approach is the basis for the success of the project.

**Upscaling:** Until now the project is concentrating its efforts on the southern region of Souss-Massa-Drâa and Tadla Azilal in the Middle Atlas. A next step could be expanding to all wilayas of the country.

Along with its Moroccan partners from the academic and private sectors, the programme has begun developing **the legal and institutional framework** for access and benefit-sharing (ABS). An initial draft of the legislation for implementing the Nagoya Protocol in Morocco has been drawn up and made available for first reading. In addition, a development partnership was agreed upon with a European cosmetics company on the use of Morocco's biological resources and their exploitation for cosmetics in accordance with the ABS certification mechanism.

A cofinancing agreement was concluded with Morocco's highway authority (*Société Nationale des Autoroute du Maroc*), the National Institute for Agricultural Research (INRA) and the Dresden-based engineering company IPROconsult. Climate change **adaptation measures (erosion protection)** should be implemented along stretches of **highway** that are threatened by heavy rainfall and erosion.

**Transferability:** Cooperation between the representatives of a more conservative society and staff members of an internationally operating agency is never without friction, but it seems to be feasible, and as this example shows, for the best of society and the environment. The concept has a wide scope, including creating legal frameworks, helping to improve regional environmental governance, collecting data, developing partnerships (e.g. with a cosmetics company) and protecting the highway as climate change adaptation measures. It is a convincing concept based on a trusting partnership that is well adaptable to the conditions in other countries.

This project seems to be a suitable case study for political decision-makers in other Arab countries for how to achieve legal and practical protection for natural resources and the fair use of environmental services.

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