

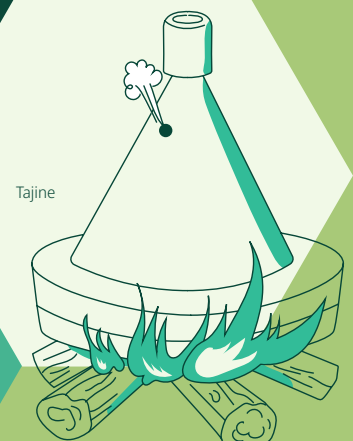
HIGH ATLAS (MOROCCO)

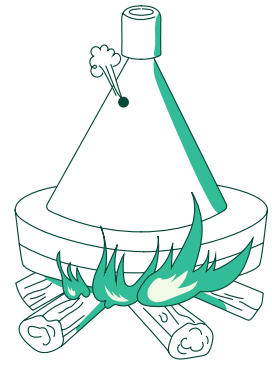
Pastoralism in the High Atlas
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THE LANDSCAPES OF THE HIGH ATLAS MOUNTAINS IN MOROCCO HAVE BEEN SHAPED BY MILLENNIAL RELATIONSHIPS BETWEEN HUMANS AND NATURE.

Rural communities still maintain ancient practices, including seasonal transhumance, traditional irrigation systems and communal management of pastures and plants. The focus area is the central to eastern arc of the High Atlas that extends from the Al Haouz Province in the Marrakech-Safi Region to the adjacent Azilal Province in the Béni Mellal-Khénifra Region. The project focuses on the *agdals* and terraced agroecosystems of the local communes of Ait M'hamed, Oukaïmeden and Imegdâl in the regions of Azilal and Al Haouz. There is also a programme launched for a fourth commune, Zaouiât Ahansal in the Azilal province.

- **Imegdâl** is located approximately 75km south of Marrakech. It has a high density and diversity of vegetation. Most of Imegdâl's inhabitants identify as Ishelhin and speak Tashelhit, one of the Amazigh languages. Their livelihoods are dependent on subsistence farming, grazing and collection of non-timber forest products.
- **Ait M'hamed** lies approximately 180 km east of Marrakech, covers an approximate area of 560 km² and has altitudes ranging from 950 to 2600m. The local population bases their livelihoods on subsistence agriculture and farming. The region has two Sites of Biological and Ecological Interest (SIBEs): Aqqa Wabzaza and Oued Lakhdar.
- **Oukaïmeden** is located approximately 75 km south of Marrakech, and rises to a maximum altitude of 2,650m. It is characterised by montane grasslands flora rich in endemics and plants of alpine and boreal origin, with a total of 198 known species from 122 genera and 38 families. Local livelihoods are dependent primarily on subsistence agriculture and grazing. Important revenues are generated from ecotourism, since Oukaïmeden is famous for being the highest winter sports resort in Africa and for its renowned prehistoric rock carvings.



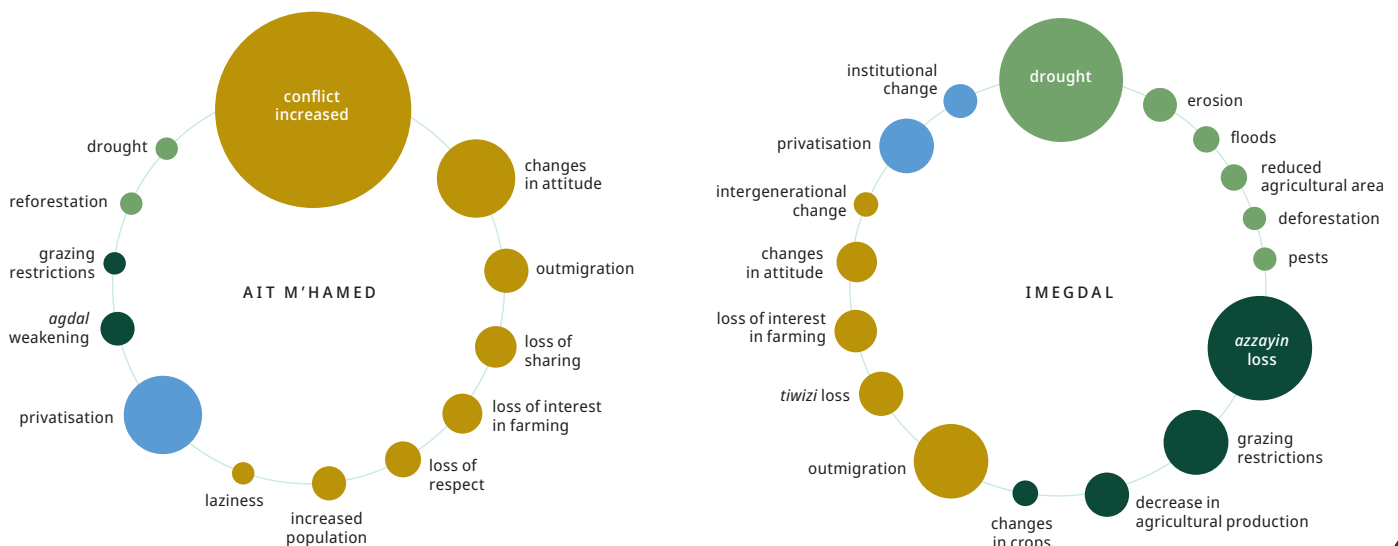


Source: © Global Diversity Foundation

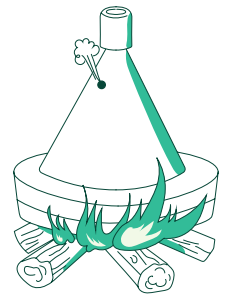
CURRENT CHALLENGES

The High Atlas communes are under threat from the changing environmental, economic and social conditions. The traditional practices of the Amazigh's people have shaped the High Atlas landscapes since the beginning of time. Traditional water management, agroforestry and community-based management of pastures contribute to the diverse and rich biodiversity of the High Atlas. However, the traditional knowledge and practices are being abandoned. Socioeconomic and environmental conditions in High Atlas rural communities are changing quickly and radically. Increasingly severe droughts, decreasing monetary rewards from traditional agriculture and pastoralism, and massive rural exodus contribute to the erosion of cultural values and community cohesion.

The difficulties of making a living in the harsh High Atlas environment contribute to a loss of interest in the younger generation in traditional knowledge and practices. When analysing the drivers of change, both men and women emphasised the importance of maintaining local values and traditions in a changing environment, while adapting to present contexts. Inhabitants from the communes of Ait M'hamed and Imegdâl identified multiple aspects of change in rural life, as shown in the figure below: environmental (light green), agricultural (dark green), sociodemographic and cultural (yellow) and administrative/ institutional (blue). The size of the labelled circles corresponds to the frequency of each listed response.



Source: [Cultural Practices of Conservation in the High Atlas](#)
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NEGATIVE IMPACTS ON BIODIVERSITY

Although exceptional in many respects, the High Atlas is a typical Mediterranean high mountain system in terms of its elevation range, general aridity, cycle of winter precipitation and summer drought, high biodiversity and presence of local communities that engage in agro-silvo-pastoral subsistence systems.

A large number of Morocco's Important Plant Areas (IPAs) are found in the High Atlas, since there is a high level of plant endemism, with approximately 500 endemic species (65% of Morocco's total endemic flora) – as well as 250 rare species.

Besides maintaining cultural integrity of local communities, the *agdals* practices help conserve the high biodiversity and ecological values of the High Atlas. Several *agdals* have been included in the International ICCA Registry, affirming their roles as Territories of Life and Indigenous and Community Conserved Areas (ICCAs). *Agdals* have also been considered as Important Plant Areas (IPAs) and Key Biodiversity Areas (KBAs), for their significance in favouring and maintaining biodiversity and ecosystem's health.

Local community participation is critical to the success of biodiversity conservation efforts. Therefore, a community herbarium, three community seed banks, and four community plant nurseries have been established in the local communities. A total of 100.000 medicinal and aromatic plants have been collected and distributed to families in the High Atlas. This initiative aims to distribute and reintroduce wild, medicinal, threatened, useful, and endemic species in the wild and on community lands. These plant distributions help reintroduce selected species back to the wild, enhance rural incomes and decrease harvesting pressure on wild populations.

Finally, another project seeks to ensure the conservation and expand the livelihood benefits of five locally important, genetically diverse crops included in the Multilateral System of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA): alfalfa (*Medicago sativa*), fava bean (*Vicia faba*), pea (*Pisum sativum*), barley (*Hordeum vulgare*) and durum wheat (*Triticum durum*).

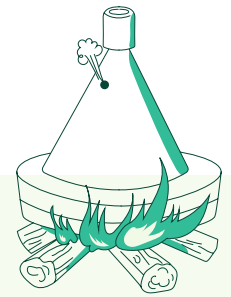


Tawala n anrar,
traditional threshing practice
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CULTURAL SUSTAINABLE LAND-USE PRACTICES

The cultural landscapes of High Atlas are maintained by the traditional practices of the Amazigh indigenous peoples. These practices support a regional biodiversity hotspot and ensure social and ecological resilience. Through a community-based approach, over 30 different practices have been identified, studied and documented:

- **Agdals**, meaning 'to prohibit' or 'to protect', are extended all over the Maghreb. Pastoral *agdals* are a traditional land management practice that governs access to communal pastoral lands and resources, mainly by fixing opening and closing dates. The main purpose of *agdals* is to serve as fodder reservoirs in critical periods of need while allowing for the regeneration of natural resources. They are collectively managed by several communities with specific regulations on access rights. *Agdals* provide animal fodder and allow for the regeneration of grazing plants in spring.
- **Tawala n anrar**, is the management system for threshing (a practice to separate the grain or seeds from hay in cereals and or other crops). Once the cereal is harvested and dried on rooftops, members of the community collaborate for the threshing of each other's grain.
- **Astour** refers to the practice of building small circular or square enclosures with stones to protect fruit trees in home gardens. This practice provides shade for vegetation, increases soil humidity and protects saplings in grazed areas.
- **Arras n targa** is an annual practice during which sediments in irrigation canals are cleaned when water levels are low. This practice ensures efficient irrigation of agricultural plots. It is considered a key activity due to the importance of irrigation to local livelihoods. One man from each household participates after agreeing on a date.
- **Tiwizi** is an important practice of solidarity and cooperation for the implementation of tasks that require significant effort and time. Examples are harvesting, threshing, building of stone walls and the cleaning of irrigation canals. However, this traditional non-monetary exchange system is increasingly monetised.



- **Aderass** are stone walls that are built to protect the land and increase agricultural production. They are used to delimit irrigated fields and home gardens, while keeping these areas free from rocks.
- **Azzwui** refers to the practice of harvesting fruits, by climbing in the trees or using long sticks to reach the fruit and make it fall to the ground. The timing is coordinated by the village or community, to ensure the order in which the fruit harvest proceeds.
- **Ighrem** refers to a stone and mud building constructed in places that are difficult to access. They are used throughout the year to store agricultural production and harvest, mainly alfalfa, cereals, pulses as well as nut and fruit trees. This practice is almost extinct, with some buildings still remaining but often used for other purposes.

BENEFITS OF HIGH ATLAS AS A CULTURAL LANDSCAPE

The Amazigh populations of the High Atlas have a rich and diverse ethnobiological knowledge of the plants and animals that provide key social and ecological services and strengthen the resilience of these communities. These knowledge systems, which include practices, beliefs and social institutions, are highly dynamic and prone to abandonment under recent social and ecological pressures. The plants grown in the community nurseries have all been selected in collaboration with local community

members. Through annual plant distributions, the community nurseries enhance the rural incomes and decrease harvesting pressure on wild populations. Several endemic, endangered and valuable plant species are cultivated, including thyme (*Thymus satureioides*), oregano (*Origanum majorana*) and lavender (*Lavandula dentata*). A part of the cultivated species is planted in designated areas to reintroduce them back to the wild.

The hydrology component works to enhance overall water management in High Atlas communities to secure clean domestic water provision, improved sanitation, and enhanced irrigation, which in turn ensures greater crop returns, livelihoods, and increased water flows to ecologically sensitive wild areas. Agricultural terraces are divided into several plots, irrigated by the drip irrigation system to save water.

The High Atlas cultural products are being commercialised by the local communities, for which they are supported through targeted training on product quality, certifications, labelling, packaging, marketing and pricing strategies. The first edition of the semi-annual High Atlas Food Market was organised in 2021, a celebration of the deep connection between humans and nature, as well as the importance of supporting local and biodiversity-friendly products. These gastronomy fairs aim to encourage networking between producers and high-end niche market retailers and chefs. Targeted workshops and training are provided to local farmers to support them in strengthening their skills in agroecology through merging of traditional practices with innovation in soil, pest and water management.



Cultivation of thyme (*Thymus satureioides*)
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