

WORLD AGROFORESTRY IN PRACTICE

THE DIFFORMED ASH TREES OF THE HIGH ATLAS

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LOCATION Africa, Morocco

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TYPE OF PRACTICES Sylvopastoralism

PRODUCTION Wood, fodder, seeds, dyes

1 GENERAL CONTEXT

Most of the Moroccan forests are rural or domestic, their shapes and management is closely related to the way of life of the communities that rely on them, and to their mingled ecological and cultural importance. In the center of the High Atlas, trees supply a large diversity of resources and forests are part of the domestic universe of the local populations.



Cultural landscape of exploited difformed ash trees

2 ENVIRONMENTAL CHARACTERISTICS

The deformed ash tree grows in the regions with mountainous climate (characterized by intense temperature variations), on poor soils sometimes planted with cereals and cover crops. Patches of these trees can be seen all along the Northern slopes of the High Atlas.

Pollarded trees as a key component of a pastoral system with resources scarcity



3 DESCRIPTION AND INTEREST

Deformed ash trees appear in little groves shaped during centuries to supply a wide diversity of resources (timber, fuel-wood, fodder, seeds, dyes...). Apart from some collective areas, most of these groves are owned and managed by individuals. The number of trees owned by each family is very heterogeneous (from 8 to more than 3000 trees). However, whatever the number of trees, their management system seems not to differ.

One of the most remarkable characteristics of these ash trees is their wide trunks composed of various stems woven together. This is the result of a special practice: farmers progressively build a stone wall around the young trees to protect them from animal browsing until they reach a sufficient height (1,30 or 1,40 meters). Most vigorous young stems are then braided and tied together to force them to anastomosis, until one day they form a single big trunk. This practice boosts the leaf productivity of the trees.

This agroforestry system is designed BY and FOR the farmers, to answer local needs and enhance its ecological and social resilience. The existence of this special landscape is directly linked to the local traditional way of life; and their future will depend on the evolution of the societies and of the access to external resources.



4 TREE SPECIES

The *Fraxinus dimorpha* is an endemic species of the Northern Africa and Occidental Asia, that spontaneously grows in lowlands or high plateau (around 1200 and 1800m of altitude in the case of the High Atlas). This tree is spontaneous, hence never planted or sown by the local population.

5 PRODUCTS AND USES

The deformed ash trees supply a wood that is resistant and flexible at the same time, used for the construction of roofs (poles or rafters) and agricultural tools. Its fruits can be crushed to make traditional spices or drugs, and its leaves can make dyes. The periodicity of the harvest of the branches is precise to get specific calibrated products (for example poles of 3,5m height and 7cm diameter) to facilitate the construction of roofs.

However, one of the most interesting feats of the ash tree is that it can still supply quality fodder in Autumn, a very dry season when pasture grow very slowly. The mean consumption of leaves by the animals is around 220g of dry matter per head per day, hence around 50% of the food need for a non-complemented herd.



6 LANDSCAPE MANAGEMENT

The trees are pruned until a height where cattle cannot reach it, allowing the foliage to grow. It is developed in a true pasture up-in-the-air that can be harvested and offered to cattle directly on the ground for browsing. Between August and November, the farmers pollard their tree by pruning part or the majority of the branches. These branches, of 3,50m height and 4-5cm diameter are then put on the ground and eaten directly by the herd. Pollarding is made at precise periods: every 4 years, with pruning of the majority of the new stems. Sometimes, especially straight stems are kept, trimmed over 3,5m so that they can be harvested after 8 years to make poles or left even longer on the tree so that they can become rafters. You can see on the same living tree various stages of branches to make diversified materials, with different cycles of exploitation (4 years for fodder, 8 for poles and 28-30 years for rafters).

Youssef HUSSAIN

(farmer from Guiè/Tankouri):

“The tree is life in our mountains. The Imts (name of the deformed ash tree in the Berber language) allows us to feed our animals, build our roofs and several tools, and even heal ourselves... My family is big and I had the bad luck to inherit poor lands with very few trees on the rocky Lahbab plateau, so I make a lot of tahboucht (protective stone walls) to protect the trees, and not bequeath a desert to my children, inch’Allah.”

WORDS FROM THE FIELD



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