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The Contribution of Forest Resources to the Historical Territorial Development of the Mountainous Areas in Northern Morocco

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ABSTRACT

The peculiar geographical configuration of the territory allocated to Spain in the Northern Morocco between 1912 and 1956 gave special importance to forest resources, not in vain, the land that could be exploited extended through almost the fourth part of 20,000 km² that should have been administered by the legal institution of the Protectorate. During the first years of Spanish presence, the cork oak species, that extended on over 110,000 hectares, was the objective of the agents in charge of forests, since they thought that its exploitation would be the driving force of the forest economy in this area. So, the first exploitation of cork was realized in 1916 around the city of Larache. In the early 30s, when the armed conflicts ended in the Rif, 300,000 kilograms of cork were put out to tender, consolidating this product as the main origin of rents in production and day's wages. We analysed an incipient development of exploitation of esparto grass and palmetto, as well as the sale of fire wood and charcoal. Although, in the middle of the 40s, Franco regime decided to impel definitely the Northern Morocco under the ideological principle called "to increase the value of Morocco", that it was realized, in our opinion, in three main sections. The "Policy of Forest Revaluation" in the decade between 1946 and 1955, which had a global investment of more than 19 million pesetas addressed to reforestation, regeneration of forests, and to building of forest houses. Otherwise the exploitation of the main timber species, especially of the cedar from the Rif and less of local oak and fir, was for urban growth, and for the building of tracks to extract the forest products aimed to articulate road communications in the Northern Morocco. The consolidation of industrial development to manufacture esparto grass, palmetto and tizra, which contributed to increase local inhabitants' per capita income in the North African area allocated to Spain.

1. INTRODUCTION

In recent years interest has increased in studying all the details of the Spanish presence in Northern Morocco during the period between 1912 and 1956, years that were developed under the legal form of protectorate. Therefore, it is easy to find works of authors like Madariaga, Villanova, or Martin Corrales, among others, whose research projects had this subject. However, despite the importance of land suitable for forestry in Northern Morocco, the study of this subject aroused little interest among researchers when Morocco gained its independence in 1956. This work is the result of a larger research that we developed in Northern

planning was done by Spanish authorities, and to examine the contribution of forest resources to regional development in this area.

2. THEORY AND METHODOLOGY

We based our research on three fundamental pillars. First, the literature review of published papers by leading engineers who worked in the Northern Morocco and of the main magazines in terms of science (as was the case of "Montes" or of "Memorial de Ingenieros"), or of general information (such was the case of "Africa" or of "Mauritania"). Secondly, the collection of statistical information, especially the one

published in the “Anuario Estadístico del Protectorado”, the one in archives (with visits to the archives of the main Spanish institutions and especially of the “Archivo General de la Administración”), and the legislative one (with the consultation of all forestry legislation appeared in the “Boletín Oficial de la Zona de Influencia de España en Marruecos”). Thirdly, fieldwork developed since 2004 in Morocco, a period during which we have realized more than twenty trips to discover “in situ” how was the territory managed by Spanish authorities between 1912 and 1956.

3. GENERAL CHARACTERISTICS OF THE MOUNTAINOUS AREAS OF NORTHERN MOROCCO: MAIN FOREST SPECIES

The Spanish Government paid special attention to forest resources due to the peculiar geographical configuration of the territory allocated to Spain in the Northern Morocco between 1912 and 1956. Not in vain, the land that could be exploited was almost the fourth part out of the 20,000 km² that had to be managed by the Public Administration of Protectorate (fig. 1).

For forest management, the Spanish authorities divided the territory in three parts: in the western area the main exploitation could be the cork, in the central part the timber species, and in the eastern area the shrub species as thuya, palmetto, or esparto grass (fig. 2).



Fig. 1. Zone allocated to Spain. Protectorate of Morocco (1912-1956).

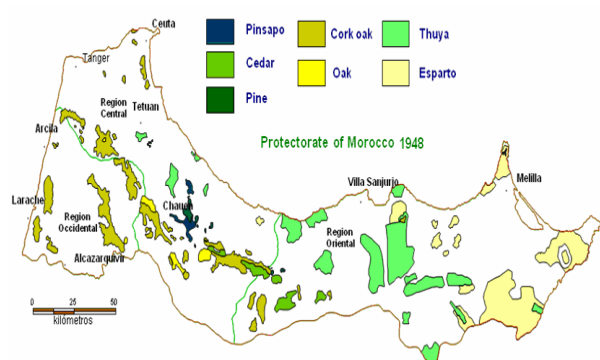


Fig. 2. General distribution of forest species.

In general, during those years, this area was characterized above all by small villages, named *duares*, with ten houses more or less, dispersed on an area very far from the main roads and with very difficult access. Under these circumstances, it is easy to understand that people had to use the forest resources to be able to live. Therefore, the evolution of the rural communities in the Rif Mountains was linked to forest exploitation as inhabitants had to keep their domestic economies. Still, as we will explain with more details later, the local people’s way to exploit forests caused many problems for the members of the Forestry Service.

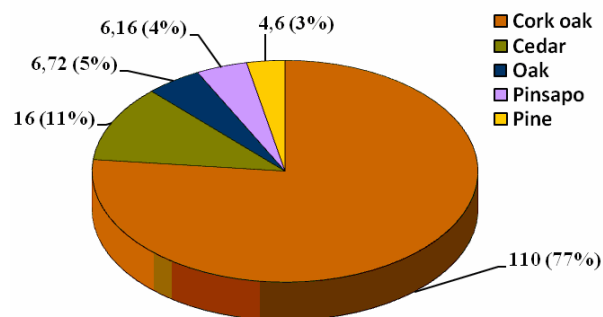


Fig. 3. Surface structure of the main species of trees (1948).

From a superficial point of view (see Figure 3), the main tree species existing in Northern Morocco was the cork oak that occupied 110,000 hectares, mainly located around Larache, in areas where altitude did not exceed 200 meters or in Chefchaouen, where it grew at above 1,500 meters. Next in importance, the cedar, *Cedrus atlantica*, occupied 16,000 hectares. A representative example was “El Cedral de Gomara”, one of the forests that influenced urban development as cedar was used to build most of the civil constructions in the Northern Morocco. Other species were the oak and the pine. The first one occupied an area of 6,720 hectares, especially in Buhassen, near Chauen city, and the second one grew on 4,600 hectares, mainly in Masukan and also in Buhassen at higher altitudes than the oak. Finally, it is worth mentioning the presence of pinsapo, on a 6,100 hectare surface in Talassentane, the only area with this species in Morocco. There it formed a dense forest where it is easy to find more than 18 meter high trees.

Related to shrub species, we showed that most of them were in the eastern part of the protectorate. An area with low rainfall, scarcely 200 mm/m², with high temperature, high erosion rates, and consequently with pre-desert landscape. The main productive species were thuya, palmetto, and esparto grass, with a total of 323,000 hectares. Out of these, the esparto grass occupied the largest area (150,000 hectares). Because of its function as protection for soil and moisture maintainer, enabling the existence of grass for pasturage in the area, it had a major role in the habitat

model that one may notice in the rural communities of this area. Secondly, the thuya, with 106,000 hectares, was mainly located in the National Park of Alhoceima, although one could see some in Ben Karrich, on the road linking the towns of Tetouan and Chefchaouen. Finally, the palmetto, with 67,000 hectares, spread throughout the study area and was constantly threatened by the advance of agriculture, above all in the central region.

4. CONTRIBUTION OF FOREST RESOURCES TO TERRITORIAL DEVELOPMENT

The beginning of Forestry Service management was not easy in the Northern Morocco. Kabilas' violence in the Rif Mountains, where the main timber species grew, and the scarce military support in the area, forced engineers concentrate their activity around the military districts of Ceuta, Melilla, and of Larache, places where they felt protected by troops. Initial efforts focused on three main issues. First, engineer Arias Chacel, the first chief of the Forestry Service, realized an inventory that enlarged the contributions of a lot of scientists and explorers researching the area: Dantin Cereceda, Ceballos, Satorras, Bolaños, Mas y Guindal or Font y Quer, just to mention some representative examples [5, 6]. Secondly, the focus was on legislative tasks, with the appearance of *dahir* that regulated forest exploitation and Forest Police. Thirdly, the works of forest management focused on the correction of littoral dunes and on the improvement of cork oak. We discuss these issues and their importance for development in the Northern Morocco in the next paragraphs [2].

Works for the correction of dunes, supported by the Spanish experience, were developed in the seaside area in Huelva and in Cádiz. This was the model of territorial articulation in the Northern Morocco. The flying sands, accumulated by wind, impeded the normal development of activities in the harbours of Río Martín, of Larache, and of Melilla, and therefore also the capacity to receive provisions and military support, the transportation in the road between Tetuán and Melilla, main highway of Northern zone, and the tillage of agricultural zones which were unprotected respect to the sea. These works of correction began in Larache and Río Martín and they continued in other areas like in Axdir, in Tamuda, or in Cabo del Agua during the period of Spanish presence. To guarantee the resource of pine and eucalyptus, the main exploited species, the Forestry Service developed a series of tree nurseries in Larache, Río Martín, Segangan, Chaouen, and in Tetuán. Sometimes, they also served for testing acclimation of species [10].

During the first years of Spanish presence, the cork oak, a species that extended over 110,000 hectares, was the objective of the agents who took charge of

forests, since they thought that its exploitation would be the driving force of forest economy in this area. So, the first exploitation of cork was realized in 1916, around the city of Larache [4, 11]. In the early 30s, 300,000 kilograms of cork were put out to tender, consolidating this product as the main origin of rents in production and day's wages. We analysed an incipient development of exploitation of esparto grass and palmetto, as well as the sale of fire wood and charcoal [13].

When the Rif war finished, for which the Spanish authorities dedicated almost all of their efforts, pacification supposed, as most researchers recognized, a truly civil action in the Northern Morocco. In forestry, this brought engineers José María García Viana's and Bernardo Cano Sáiz Trapega's initiatives. The first one proposed the reforestation of more 10,000 hectares of lands without vegetation and the creation of a great forest region, where all suitable surfaces were included, especially the ones situated where works of hydrologic correction were realized [7]. Bernardo Cano's tasks of recognition and research in the cedar forests near Tarquist were the beginning for the assessment of real timber possibilities in the Rif Mountains and the start of forest exploitation in this area. Both of them represented the basis for the period of highest forestry intervention in the Northern Morocco (1938-1956), during Franco's Government.

In the mid 40s, Franco regime decided to impel definitely Northern Morocco under the ideological principle called "to increase the value of Morocco", with the primary objective of ensuring the availability of resources and not relying on Spanish aid. This was realized, in our opinion, in three main sections. First, the "Policy of Forest Revaluation" in the decade between 1946 and 1955, which had a global investment of more than 19 million pesetas in reforestation, in regeneration of forests, and in building of forest houses. From the global budget, 93.5% was for works of reforestation, paying attention to three preferential factors: the protected function of operations like inundated soils of the Río Negro, technical criteria like the works in river banks, and productive ones, like the actions in the Tres Forcas peninsula. In spite of efforts, only half of the projected reforestation of 14,000 hectares in the Forestry Reassessment Plan was completed [1].

Otherwise the exploitation of the main timber species, especially of the cedar from the Rif and less of local oak and fir, led to urban growth and to the building of tracks to extract forest products aimed to articulate road communications in Northern Morocco. Regulating laws for cork and lumber exploitation appeared in September 1944 [8]. They had a double objective: on one hand, an economic purpose, since it was the beginning for the search of profits out of forest resources in the territory allocated to Spain and, on the other hand, a social one, as municipalities obtained

some basic income to improve local infrastructure. Globally, 360,597 m³ of timber were extracted from forests in the Northern Morocco, especially oak in Buhassen and pinsapo in Talassentane, 60% of them by RENFE (the railway company) for the development of Spanish infrastructure [3]. The other 40%, conceded to enterprises in the Moroccan territory, was for the necessities of timber of the enormous growth in administrative and in military administration in the Protectorate and less for the shipyard located in Larache.

Oak exploitation was realized by forestry administration during the first years, because of the low price of oak from the first peeling and because of property litigations that impeded private initiative at that time. However, all the oak exploitation of the Spanish Protectorate was given in monopoly to INCOME (Industrias Corcheras del Marruecos Español) in 1944, a company that was obligated not only to extract oak, but also to support the development of manufacturing, with the implantation of two factories, one of them in Chauen and another one in Dar Chaui. In spite of good hope generated by the increase of product value, the reality was very different because the company focused on those trees that offered higher outputs, relegating the other ones that needed forestry tasks or building paths facilitate access to extract oak. Besides, INCOME did not open the respective factories, and the firm exported in the rough most of the extracted oak, through the port of Tanger, impeding the consolidation of this economic sector in Northern Morocco [8].

Finally, the third main objective was industrial development generated from forest resources. Moreover, the sawmills were very important to supply timber to building. We underline the role of the industry associated with esparto grass, palmetto and heath, with more than fifty new factories dedicated to manufacture rope in the two first cases and pipes from heath timber. This dynamism of enterprises decisively contributed to the improvement of population's incomes, a population who lived from little agricultural lots and from shepherding very small herds.

5. PROBLEMS BECAUSE OF THE USE OF FOREST RESOURCES

Despite, as we have already said, forest resources greatly contributed to the development of the Northern area of Morocco, the use that the population gave them led to many problems for the members of the Protectorate Mounts Service. Three were the main issues: uncontrolled wood extraction, forest fires, and overgrazing. Not for nothing around 4,000 complaints were received in the offices of Forest Keepers, out of which nearly half were related with indiscriminate tree pruning.

Many North Africans natives' domestic economies depended on the wood they extracted. Especially women, who lived outside villages, needed it for heating, cooking, for building their own houses, and for making tools in order to be able to use these resources. This way of living caused a lot of pressure on forest ecosystems because the locals only wanted to satisfy their needs without taking into account anything else, knowing that they owned the forest so they could use as many resources as they needed for the development of their activities [12, 14]. One of the most damaged trees because of this behaviour was the cork tree, highly demanded due to its calorific power. The excessive pruning of this tree in some cases led to the disappearance of whole forests of this species, which had to be replaced with pine tree. This behaviour is unfortunately still present so anywhere we go along Northern Morocco it is easy to find hills with one or two cork trees where there used to be a huge mass of trees with the possibility of extracting cork. In Figure 4, taken nearly two years ago in the Rif Mountains, close to Bab Berret, we can clearly see an example of what we discussed above. Knowing about the locals' need to use those resources but without decreasing the productivity of the main forest species, during the 40s, Spanish authorities, carried out a huge plan to plant mostly Acacia, Eucalyptus, and other quick growing species such as the pine or the banana tree. The chosen area was the triangle formed by the city of Larache, the French frontier and the Atlantic coast, 140 km² where they tried to get some of the demanded wood. Unfortunately the plan was not as profitable as they thought because when the first wood cut was made the Independence of Morocco was reached so the lands turned to be the Moroccan Government's property.

The second big problem members of the Mounts Service had to deal with was represented by forest fires. In fact we can count around 17,000 burnt hectares between 1944 and 1955 and more than 800 complaints because of this made by Rif's locals. The main cause of the registered fires had to do with the necessity of looking for new places to practice agriculture, a technique known as "shir" (fig. 5).

In a generic way, the process was made in two phases: in the first one all the shrub was cut and chopped, and it was spread along the area that was going to be burnt, and in the second phase they proceeded to put fire to everything. The mixture of ashes with earth helped the later sowing. The problem came when the fire got out of the parcel and went into the nearby forests.

Fighting against this practice was not easy because, without it the little villages would be experiencing economic problems, but at least the Spanish authorities could decrease its effects because they forced the users to call the Mounts Services to give them permission and they fixed the day and time for

fire avoiding the destructive effects that could appear with uncontrolled fire.



Fig. 4. Deforested hill. Road from Yebba to Bab Berret (November 2004).



Fig. 5. Example of "shir" in the surroundings of Chaven (November 2004).

The third big problem is overgrazing in some forest areas in the North of Morocco. This issue was sometimes caused by weather conditions, because in years of drought places available for grazing decreased so this forced shepherds to concentrate all the cattle in small areas. However, in many other cases, overgrazing was the inevitable consequence of the reduction of the lands devoted to pasture. This was because the Spanish authorities chose areas for reforestation. Although in all legislative decrees they underlined the importance of the small livestock for the economy of Northern Morocco and inhabitants were even exempted from fees, this issue turned to be a conflict of interests which maintained the whole period of Spanish rule in the Northern part of Morocco.

6. CONCLUSION

There is not the slightest doubt about the importance of forests, keeping in mind that 25% of the territory assigned to Spain was capable of logging.

The two species that most contributed to territorial development in Northern Morocco were cork oak and cedar.

The main forestry action started once the Rif war finished, especially since Franco regime, when the "Policy of Forest Revaluation" appeared, which was a real boost in this area. Furthermore, since the early 40s, a whole set of laws to improve forest management appeared.

Forest resources were instrumental in maintaining rural communities in the Rif Mountains, considering that forest provided timber, firewood, and plants that were essential for inhabitants' daily living.

Related to the way of life in rural communities, the members of the Protectorate Forest Service faced three important problems: uncontrolled extraction of timber and firewood, overgrazing, and forest fires. The misuse of these resources deteriorated much some important forest enclaves.

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