Analysis of socio-economic mutations in the Benslimane forest Lever for sustainable development (Province of Benslimane, Morocco)

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Abstract

The Benslimane forest, which is part of the geographical region of the Atlantic cork oak, is characterized by remarkable floristic and faunistic diversity, its contributes to the biological and ecological balance and have a very important socio-economic role. As part of the integrated management of this forest massif, and in order to deepen its knowledge about the integration of the population and the changes in its socio-economic environment, we have identified characteristics socio-demographic analysis, analysis of space exploitation and management systems and forestry practices related to the management of the natural environment, based on the analysis of available data, participatory workshops and socio-economic surveys on a representative sample of user douars. The estimated population of 15350, approximately 2578 households, is moderately poor with a poverty rate of 12.8. Its socio-economic environment is characterized by a deficit in basic infrastructure and an acceleration of the rural exodus. Agriculture, mainly subsistence farming, combined with extensive livestock farming, are the main activities of this population. Agricultural activity in the study area is based on agro-sylvo pastoralism, with livestock mainly composed of sheep and cattle. Indeed, the forest of Benslimane suffers from an acute overgrazing, with a herd of 50046 BUP, an overgrazing rate of 73% and a length of stay in the forest of 228 days per year.

1. Introduction

The Moroccan forest covers about 9 million hectares (HCEFLCD, 2013). It provides production functions (wood, firewood, mushrooms, honey, medicinal plants) and protection and recreation (protection of soils, fight against erosion, storage of carbon, improvement of the framework life and landscape and aesthetic value, etc.). Nevertheless, Moroccan forests are landscapes that are very open to their socio-economic environment and therefore subject to strong anthropogenic pressure, leading to the degradation of forest and peri-forest ecosystems through deforestation (31000 ha / year) [1].

The rural populations in Morocco live from a subsistence economy based on livestock (HCEFLCD, 2013). The forest is exploited for leaf fodder and fuelwood; this exploitation is regulated by customary institutions [2].

Analysis of the data on the distribution of the different overgrazing classes on a national scale shows that grazing pressure is relatively low in 9% of the national territory; whereas it is strong and excessive on 26% of the territory, with an overrun of the potentialities of 2 to 5 times depending on the zones [3].

The forest of Benslimane is one of the most important forests of cork oak in Morocco. It is characterized by a flora presenting a biological spectrum common to the flora of Morocco, located in the Mediterranean-Atlantic floristic domain. It is composed mainly of stands of Cork oak, Thuya and Cistes's Matorrals, which reflect the result of the interaction of the various factors in the physical, ecological and socio-economic environment, condition the current state of this biological association.

The forest area of Benslimane highlights a real integration of the using population and their practices in the adjacent forest environment. It is located close to the user douars who maintain a permanent contact with the forest, expressed by the exercise of its right of use governed by the regulations in force. Parallel to this legal practice which largely dominates the relationship between the forest and the rural population, it unlawfully and

excessively harvests firewood, forage units and secondary products. These aspects make the global operating system undergoing profound changes that must be taken into account when drawing up the concerted development plan.

It has proved very useful to approach this change and analyze its impact on the future of the forest resources in the study area. In addition, our study aimed to analyze changes in the environment Socioeconomic factors and the various factors at the origin of the changes, namely socio-demographic characteristics, systems of exploitation and management of space, energy consumption and forest management practices related to natural ressources management.

2. Material and Methods

2.1. *Presentation of the study area*

The forest of Benslimane extends to the north of the town of Benslimane, over an area of approximately 12262 hectares (Figure 1). Geographically, it is located between Rabat and Casablanca, almost 25 km south of the highway linking the two capitals. Administratively, the forest is part of the Wilaya of Casa-Settat, Province of Benslimane, Cercle of Benslimane, Caidat of Ziaïda, distributed between the two communes of Aïn Tizgha (94%) and Benslimane (6%) with a relatively unequal proportion. The area is located in a semi-arid bioclimate, with the exception of the coastal strip (Bouznika) which is subjected to a wet bioclimate (present stuady). Average annual rainfall is about 401 mm. It is a very gentle plain, exposed to the northwest, whose extreme altitude does not exceed 280 m. The best known geological formations are primary shale, sandstone and quartzite, triassic, limestone, marl, sandstone, sand and quaternary silt [4].
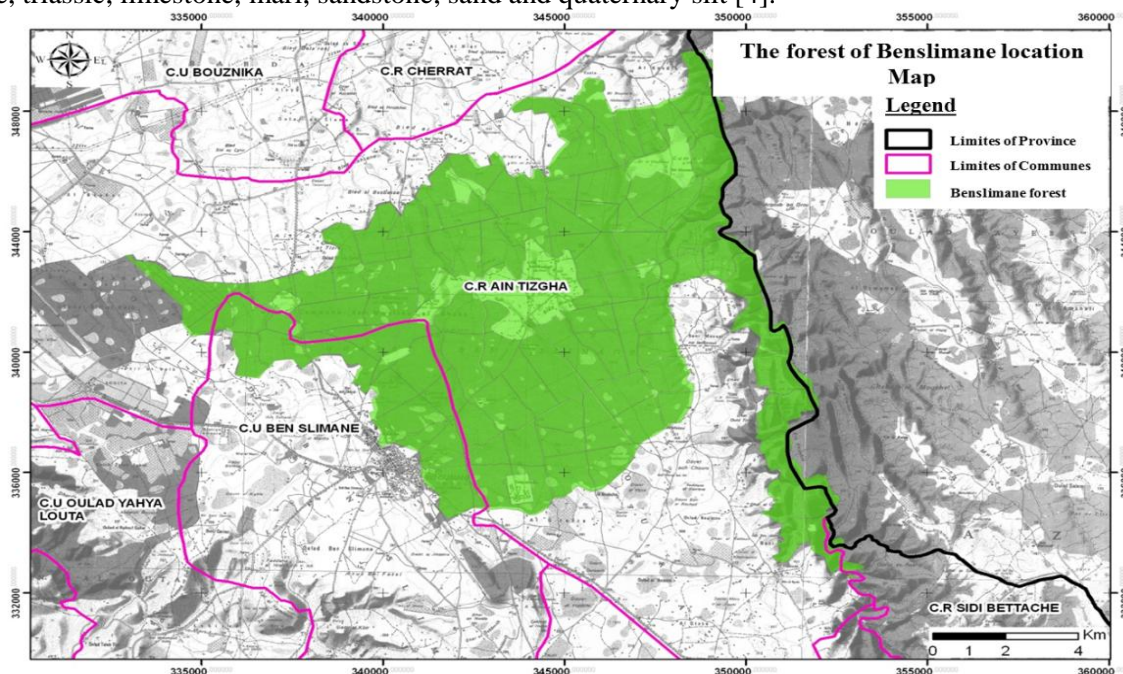

Figure 1:*The forest of Benslimane location Map*

2.2. *Criteria for choosing Douars*

In order to meet the objectives assigned to this study, the approach adopted was based, on the one hand on the exploitation of existing data [5] and [6], on official statistics [7] and [8] the form of a series of socio-economic surveys on a representative sample of user douars (a rate of 44%, which largely exceeds the rates recommended by FAO (5-7%)) [9]. On the other hand, on consultation workshops with all stakeholders in the province of Benslimane (rural population, communal councilors, local authority, forest managers, etc.).

The selection of the target douars was carried out according to an approach based on an adapted multicriteria analysis, taking into account the following criteria (Table 1).

The combination of the three qualification criteria, through the summation of the scores assigned to each criterion, allowed the classification of user douars according to the state and urgency of the interventions.

2.3. *Socio-demographic characteristics*

2.3.1. *Socio-economic factors*

In this part, the aspects that have been studied are user population, population structure, rural exodus, external incomes, equipment, etc.

2.3.2. *Growth rate*

The calculation of the growth rate of n years: $T (\%) = (y / x)^{1/n} - 1$, with: X and Y correspond respectively to the population size according to the census of GCHCP (General Census of the High Commission for Plan) in n1 and n2.

Table 1 : *Criteria for choosing Douars*

Criteria	Identifying data	Classes
Degree of proximity of douars In relation to forest	Distance to forest	1 : >= 1000 m 2 : 400 m<…<1000 m 3 : <= 400 m
Anthropogenic **pressure**	Number of offenses committed by douar user	1 : <= 30% 2 : 30%<…<50% 3 : >= 50%
Appreciation of the forester And resource persons	The experience of local forestry personnel w are familiar with the close link between the user population and the forest under study	1 : low link 2 : Average link 3 : Strong Link

2.3.3. *The dependency ratio (Rd)*

The dependency ratio (Rd) represents the economic burden to be borne by the active segment of the population. It is calculated by relating the inactive population to the potential labor force (formula below):

$$Rd = \{P(0\text{-}14)+P(+60)\}/ P (15\text{-}59)$$

With :

P (0-14): Population aged less than 15 years P (+60): Population aged 60 and over
P (15-59): Population aged 15 to 59 years

2.3.4. *Agricultural practice:*

Among the data sought from representatives of the douars, the ownership structure, agricultural production system and related problems.

2.3.5. *Livestock and pasture*

This component allows to deepen the knowledge on two levels: that of the breeder and the other of the ground:

* That of the breeder: This is the identification of the numbers of livestock, the mode of production, the conduct of the livestock including feeding, etc..
* The other field: based on the bibliographic study and the various data available in parallel to the survey, we will identify the forage balance and the various range loads:
- The livestock's forage requirement: estimated in forage units on the basis of a maintenance ration of 300 FU / year by SLU .
- Overall evaluation of forage potential: in forage units (FU), taking into account all the natural and artificial forest areas in the Benslimane forest; Namely: cork oak, Eucalyptus and Pine. These areas provide forage units with different productions. For reforestation, density or cover is very influential on production: Eucalyptus and Pins can vary from 25 FU / Ha / year to 100 FU / Ha / year.
- To make livestock data homogeneous, it was considered useful to convert the enumerated numbers into a single unit (Small livestock unit: SLU): The standards used: SLU = Small Cattle Unit (1 Cattle = 5 SLU, 1 Sheep = 1 SLU; 1 Goat = 0.8 SLU)
- Apparent load (AL) (SLU / Ha): Number of herd (SLU) / Area (Ha)
- Real animal load (RL) (SLU / Ha):Apparent load * residence time / 365 days
- Balance load (BL): BL = Offer (FU) / Demand (FU)
* Offer: Average production at the forested area
* Demand: Annual demand in forage units (300 FU / ha / year)
- The overgrazing coefficient (O): O = (1 - BL / RL) * 100
- The forage deficit (FD): is expressed in % in relation to the overall needs of the livestock, it is equal to:
FD = (Forage requirements (FR) - Forage offer (FO)) / FR x100

3. Results and discussion

3.1. *The Douars interviewed*

Write a small paragraph that gives how many households were interviewed, their socio-demographic profile (Table 2 and figure 2)

Table 2 : *Results of the multicriteria analysis for the choice of target douars*

| Commune	Fraction	Douars	Distance/ forest (m)	Class	Number of offenses committed	% of offenses committed	Class	Appreciation of the forester	Final note
Rural Commune of Ain Tizgha	**Béni Oura**	Al Ayoun	258	3	118	39%	2	2	7
		Al Koudia	306	3	155	50%	3	3	9
	Béni Mexal	Beni Aissi	146	3	170	57%	3	3	9
		Labrabcha	511	2	42	14%	1	3	6
	Lahsasna	Labsabes Est	0	3	183	67%	3	3	9
		Oulad Ahmed Sahel	103	3	85	31%	2	2	7
	Dghaghia	Bouchouitina	2450	1	83	100%	3	3	7
Urban commune of Benslimane		Ain Chaâra	431	2	100	91%	3	3	8
Total	**8 douars**				**1068**				
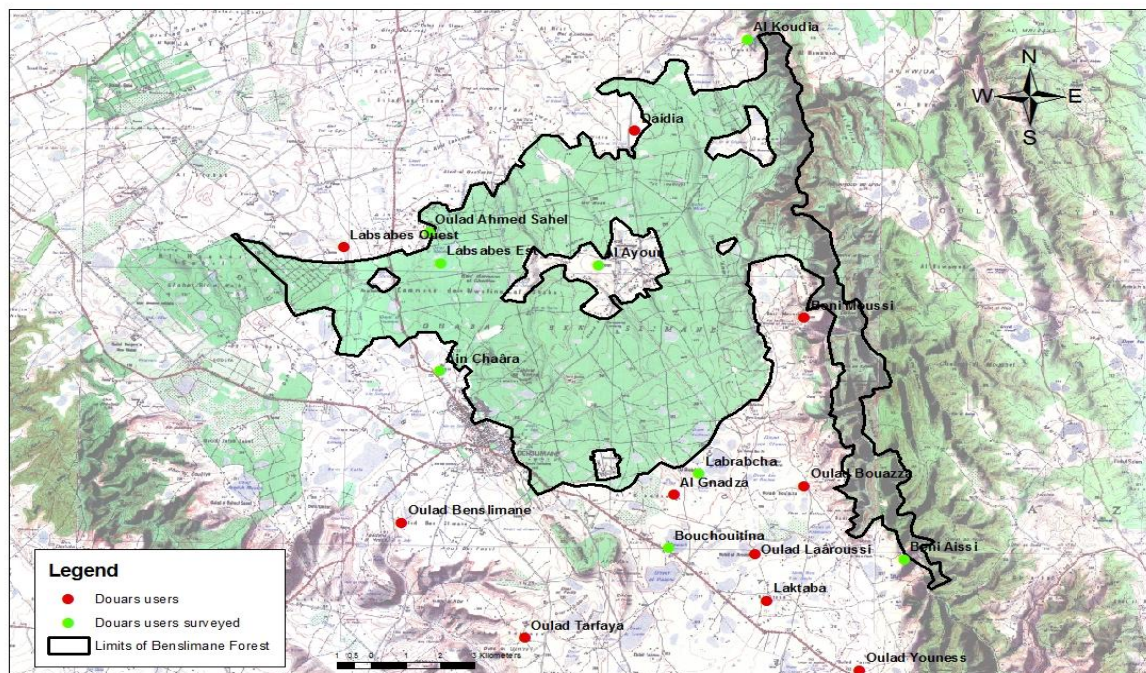
Figure 2 : *Location map of douars users surveys*

3.2. *Socio-demographic characteristics*

3.2.1. *Population users*

The entire territory of the study area is divided between the Beni Oura, Beni Mexal, Lahsasna and Dghaghia fractions. The socio-demographic analysis made it possible to identify the main rural actors acting on the forest, based on the definition of real users, which directly exploits natural resources (Table 3). The forest user population is estimated at 15350 (about 2578 households). The rate of increase recorded a low value between 2004 and 2014 (2.82% for the commune of Ain Tizgha and 1.6% for the commune of Benslimane).

Table 3: *Population users*

Rural /Urban commune	Douars users	Household	Population
Ain Tizgha	16	2016	12331
Benslimane	2	562	3019
Total	18	2578	15350

Source*: Socio-economic surveys 2014-2015*

3.2.2. *Social structure of douars*
The study area encompasses places of concentration of the population in douars and sometimes isolated dwellings linked to the more or less intensive crop areas. The Douars differ in size, level of resources, importance of immigration, degree of isolation or accessibility, level of socio-educational equipment and organizational capacity. Moreover, there is a broad representativeness of means and large douars. As for the size of households, it is still relatively high compared to the provincial average (5.95 people per household compared with 5.36 for the province).

3.2.3. *The structure of population*
As a result, the distribution of women and men by age group follows the same trend between the two sexes with a slight difference. Men are relatively more present in all age groups (Figure 3). The working-age population is the most dominant class, accounting for 61% of the total population, slightly higher than the provincial average for rural communities (60%).
The dependent population, which is not of working age (children and elderly people), represents 20% of the total population and is often involved in agro-sylvopastoral activities. This represents a potential labor force capable of participating in the development of the area.
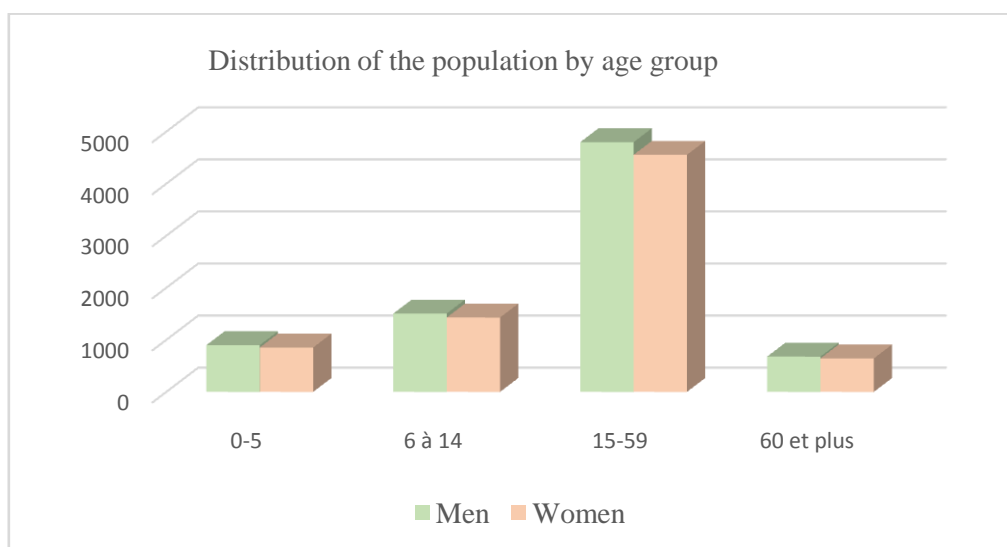

Figure 3 : *Distribution of the population by age group* (**Source :**Socio-economic surveys 2014-2015)

3.2.4. *Schooling and illiteracy*
The scolarisation rate is 24%, 15% for boys and 8% for girls. This low rate proves that the generalization of education is far from being a tangible reality. The rate of illiteracy is around 67%.

3.2.5. *Rural exodus*
The rural exodus in the forest users douars is a common phenomenon following the drought of the 1980. Thus the movements of the population temporarily or definitively that marks the region are oriented towards all overseas or to provincial and regional centers. However, in recent years, it has been registered departures of the whole family that sells its goods and settles in Mohammedia and Casablanca. This practice tends to develop, especially since the land costs more and more expensive since the demand is very important from the richs of Casablanca. It is therefore a fundamental element that influences the environment and promotes the real change currently under way in the study area, particularly with regard to this particular "tourism".

3.2.6. *Habitat*

The rural commune of Ain Tizgha has a high rate of precarious housing, with 13.2% of its dwellings classified as traditional housing. This rate is well above the provincial average of 5.3% for rural municipalities (GCPH 2004).

3.2.7. *Employment and dependency ratio*

The employment rate corresponds to the number of employed persons in relation to the total population aged 5 years and over. At the level of the study area, 36% of the population is active and occuped. The employment rate is around 41%. The pattern of employment by sector of activity shows the relatively high weight of Benslimane's agriculture, livestock and forest, a rate of 72%.

The sources of income are presented according to the 4 sectors of activity without taking into account their interdependencies (livestock, agriculture, forest, other sources). The analysis shows that livestock is the main economic activity (about 47%) followed by agriculture which contributes about 25-40% of household income. The other sectors have a small contribution to this income.

At the level of the study area, the dependency ratio is of the order of 0.64. This ratio obtained means that each inactive person is supported by about one active.

3.3. *Agricultural practice*
3.3.1. *The useful agricultural area (UAAs)*

The useful agricultural area occupies 33% (6224 Ha) of the total area of the commune of Ain Tizgha. Thus, agricultural land in this area is not sufficiently available to promote sustainable agriculture.

3.3.2. *Land use mode*

The use of leasing favors a category of small and medium-sized farms. Nevertheless, the direct use of land accounts for 87% of the area under cultivation in the whole study area. To this end, small farms use family labor, while large farms employ workers or "Khemas" (1/5) during harvesting.

3.3.3. *Nature of agricultural land*

The useful agricultural area (UAAs) are reduced in this area. This situation is aggravated by the predominance of the Bour lands with 95%. This prevents intensification of production and agricultural and non-agricultural diversification.

3.3.4. *The structure of farms*

The study area is characterized by a strong presence of small holdings. Thus, the majority of farms (59%) have an area of less than 5 hectares, including those without land (11% of households) and cultivate only 9% of the UAA. Conversely, about 30 farms only have almost half of the UAA (47%). The disparities in access to land are therefore deep and worsening with regard to the price of land. Only external investors have the financial means to buy plots. According to the field surveys, the price of the land is evaluated between 500 and 1000 DH/m^2 according to the situation of the plot. The price of land has increased over the last decade (Figures 4 and 5).
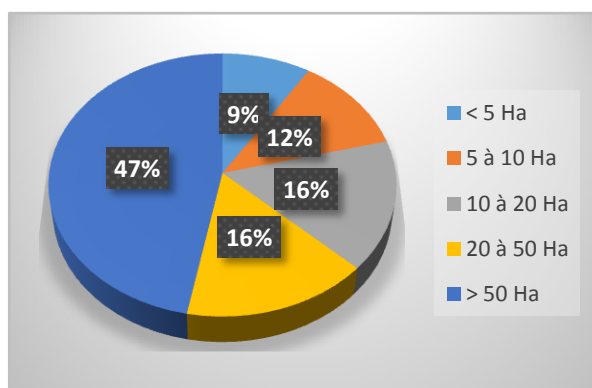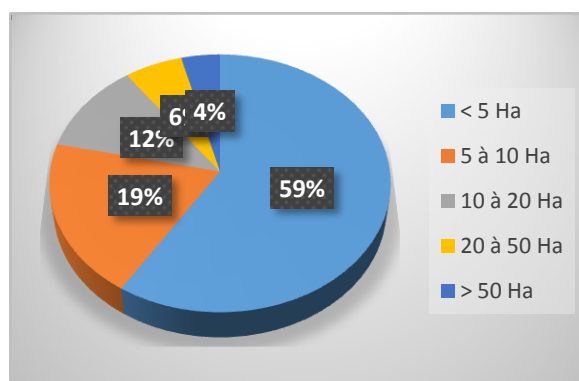

Figure 4 *: Distribution of UAA* **Figure 5** *: Breakdown of holdings by UAA*
Source:*Participatory Surveys and Workshops 2014-2015*

3.3.5. *The main agricultural speculation*

The size of the farm and the socio-economic factors that impact the overall functioning of small, medium, large and very large farms directly influence the choice of crops, specific techniques and rotation on each plot. The first criterion for choosing a crop is self-consumption and the family's need for food. In second place, the presence of the livestock on the farm, as well as its size and composition, which makes it possible to satisfy given annual forage demand.

As a result, agricultural speculation fits perfectly into the global system of space management. This management takes into account family needs as well as the economic situation and the weight of the past. The evolution of the occupation of the UAA is reported as follows (Table 4) :

Table 4: *Agricultural speculation at the study area*

Speculation	Land use (SAU en Ha)						
	Cereals	Pulses Crops	Vegetable crops	Forage crops	Fruits Plantations	fallow	Total
Area (Ha)	4500	290	90	560	284	500	**6224**
%	**72%**	**5%**	**1%**	**9%**	**5%**	**8%**	**100%**

Source*: Socio-economic surveys, 2014-2015*

The study area is a rainfed cereal area. Cereals rank first in the UAA. Of the cereals, soft wheat is the most important crop with about 55% of the cereal area. For pulses, there is a great diversity, dominated by peas. For forages, the choice is very wide, and the possibilities of development in parallel with the intensification of the rearing system seem encouraging. Among the fodder products are: forage cereals (barley, oats, maize), alfalfa, bersim, fatty strip, medicago, clover, etc. Market gardening essentially intended to meet the familiar need concerns virtually all vegetables with very small areas. It should also be pointed out that tree cultivation occupies a very important place, sometimes even in the formation of income from farming. There are several species, the most dominant of which is the vine, but in parallel and with minor importance we also find almond, plum and even avocado and several other fruit trees (apple, fig, pear, etc).

3.3.6. *Insufficient organization and supervision of the agricultural sector*

The main constraints faced by the agricultural sector are : climatic and socio-economic constraints. The climate in the study area is of the semi-arid type, characterized by the weakness and irregularity of precipitation from one year to the next, thus causing a shortage of water resources, which limits the gradual evolution of forest cover, yields, agricultural diversification by also making all agriculture dry. Socio-economic constraints include Fragmentation of holdings, low utilization of production factors and difficulty in obtaining agricultural credits. Concerning the fragmentation of holdings, uneven land distribution and high population growth contribute to the fragmentation of properties and thus impede land development through investment, modernization of techniques and improvement of farming methods, while low utilization of production factors (traditional cropping techniques, selected seeds and fertilizers) result in low yields compared to existing production potentials. Finally, the difficulty in obtaining agricultural credits are due to the problem of debt repayment by small farmers at the end of the difficult years. This negatively impacts the continuity of the distribution of credits, problems of land registration and inheritance problem.

3.4. *Livestock and pasture*
3.4.1. *Composition of livestock and effective in the study area*

Livestock is characterized by a clear dominance of sheep with 25000 unit, followed by cattle, with a headcount of 4800 unit and third, goats with 1308 unit. The total number of livestock is estimated at 50046 SLU.

3.4.2. *Feeding and Livestock management*

Livestock management is traditional and extensive, with limited genetic potential, with herds consisting mainly of local and cross breeds. Indeed, the practice of livestock farming, strongly linked to a predominantly subsistence agriculture, is intimately linked to the family itself. In addition, the practice of association in the forest users' douars is noted. This livestock mode allows poor farmers to have a large livestock population and to improve their income. Indeed, 10% of households are affected by this practice. The number of animals affected by this method of breeding constitutes 5% of the total number of livestock in the area. In this case, feeding is regularly carried out to livestock within the livestock unit. Animals take their food mainly from the forest domain. During The period of scarcity, the stubble and the straw constitute another support for feeding

the livestock. Fodder crops (9% of the UAA), fallow land (8% of the UAA) and supplementary feeding mainly of barley, dry beet pulp, oats and straw (tables 5, 6 and 7).

Livestock feed is mainly based on forest, cropland (thatch and fallow) and supplementation. The length of stay of the animals in the forest, which is of the order of 50046 SLU, is about 228 days per year. Moreover, the forest is an essential support for livestock. Once the grazing resources have been exhausted, local residents are obliged to use delimbing and peeling cork oak trees for the survival of their livestock.

Table 5: *The forage calendar of flocks in the study area*

Livestock	Sep	Oct	Nov	Dec	Jan	Feb	Ma	Apr	Mai	Jun	Jul	Aug
Cattle	F-S	F-S	F-S	J-S	J-S	J-S	F-J	F-J	F-J	F-C	F-C	F-C
Sheep	F	F	F-S	F-S	F-S	F-J-S	F-J	F-J	F-J	F-C	F-C	F-C
Goats	F	F	F	F-S	F-S	F-S	F	F	F	F-C	F-C	F-C

Source : *Socio-Economic Surveys (2014-2015)*
F : Forest   J : Fallow   S : Supplement   C : Chaume

Table 6: *The length of stay of the herd according to the seasons*

Season	Autumn		Winter		Spring		Summer		Total	Number
Duration of stay	Number of hours /day	Number of hours /season	Number of hours /day	Number of hours /season	Number of hours /day	Number of hours /season	Number of hours /day	Number of hours /season	Number of hours	of days
Cattle	8	720	0	0	9	810	7	630	2160	180
Sheep	11	990	6	540	13	1170	6	540	3240	270
Goats	12	1080	8	720	15	1350	9	540	3690	308

Source: Socio-Economic Surveys, 2014-2015

Table 7: *The length of stay of the pasture in the forest*

Livestock	Numbre of SLU	Numbre of days	Total Number of days	Average length of stay / year (days)
Cattle	24000	180	4320000	228
Sheep	25000	270	6750000	
Goats	1046	308	322168	
Total	50046		11392168	

Source: *Socio-Economic Surveys, 2014-2015*

3.4.3. *Need animal feed*
The annual requirements of the animals amount to 15013800 FU / year. Those of sheep account for 50%, followed by cattle 48% and finally goats with only 2%.

3.4.4. *Forest pasture*
The forage potential available at forestry level in the study area is 2221400 FU / year. Compared to livestock needs, the pastoral forest potential exploited covers only 15% of the annual needs of grazing livestock in the forest of Benslimane. This deficit is partially offset by purchases of livestock feed and excessive harvesting of forest resources that are causing their degradation (Tables 8 and 9).

3.4.5. *Supplementation*
Supplementation is offered to livestock during the winter and fall periods, which is a period of increased livestock needs following the birth and growth of young animals. The main elements distributed are barley, oats, dry pulp of beet and straw. The quantities distributed depend on the animal species, its physiological state, the state of the forest and the vision of the breeder.

According to the socio-economic investigations, the quantities of food distributed are given in the table below (Table 10). The pastoral forest potential exploited covers only 15% of the annual needs of grazing livestock in the Benslimane forest. This deficit is partially offset by livestock feed purchases (2279328 FU / year) and excessive harvesting of the forest resources that are causing their degradation.

Table 8: *Evaluation of the forage potential offered by the forest*

Species	Area open to the range	Potential in FU / Ha / year	Fodder potential FU / year	%
Cork oak	4800	300	1440000	**64.82**
Thuya	400	40	16000	**0.72**
Eucalyptus	1800	50	90000	**4.05**
Pins	200	40	8000	**0.36**
Matorral	3337	200	667400	**30.04**
Total	**10537**		**2221400**	**100**

Source:*Calculations Based on Study Data*

Table 9:*Evaluation of annual livestock requirements in fodder units*

Livestocl	Number	Number of SLU	Fodder Needs UF / year	%
Cattle	4800	24000	7200000	48
Sheep	25000	25000	7500000	50
Goats	1308	1046	313800	2
Total	**31108**	**50046**	**15013800**	**100**

Source:*Calculations Based on Study Data*

Table 10 :*The supplementation of the livestock in the study area (in Kg and in FU)*

Food	Quantities distributed in (Kg)	Nutritional value (FU / Kg)	Quantities distributed in FU
Barley	1804600	1.05	1894830
Oat	360920	0.45	162414
Straw	670280	0.3	201084
Dry Beet Pulp	30000	0.7	21000
Total	**2865800**		**2279328**

Source:*Socio-Economic Surveys 2014-2015, [30].*

3.4.6.*Forage Balance Sheet*
The forage balance showed that the study area has a forage deficit and an overload that manifests itself through (Table 11):

Table 11 :*Calculation of forage balance*

indicators	Valeur
Total Small livestock unit	50046
Forage Requirements (FU / year)	15013800
Forage potential in FU / year	2221400
Forage deficit (%)	85.20
Apparent load: AL (SLU / Ha)	4.08
Real load: RL (SLU / Ha)	2.55
Offer: Average production (FU/ ha / year): Any species confused	210.82
Balance load: BL	0.70
Overgrazing coefficient (OC) (%): any species confused	**72**

The overgrazing coefficient is about 72%, which expresses that the nutritional needs of the herd far exceed the potential of the forest. This situation is very apparent, as evidenced by the state of the forest and the presence, if

not dominance, of some of the overgrazing indicator species (*Stipa retorta*, and *Ferula communis*) is due, on the one hand, to the small area occupied by the sylvo-pastoral area which generates a low contribution of the forage resources offered by the sylvo-pastoral resources, and on the other hand the acquisition of the very large numbers of flocks by the population and their maintenance during a good part of the year.

In times of scarcity, shepherds practice delimbing and peeling to feed their herds and this inappropriate action causes the cork oak trees to be injured; Which contributes to their decline;

Conclusion

At the end of the socio-economic analyzes, the main factors that influence the way in which space is managed are highlighted. The socio-economic change currently under way in the area favors the stability of the livestock and its reduction and limits the use of cultivated land belonging to the forest domain.

Indeed, production systems are characterized by low productivity dependent on climatic conditions, water availability and habitats that are generally dispersed. Given the problems of poverty, the lack of basic infrastructure and the lack of supervision and support of users, young people and women find themselves unemployed. Thus, since young people can not bear long periods of unemployment, they are obliged to move to precarious jobs that generate very low incomes, or to emigrate to the nearest urban centers. Hence, the agricultural, livestock and forest sectors deserve to be promoted and valued more in order to create full employment in rural areas, to improve the standard of living of local residents and to against poverty.

In addition, other practices in the region, namely the beekeeping practice, which can provide additional remunerative income, are neglected. Hence, the interest to promote the creation of apiary cooperatives and to popularize the related techniques and in order to achieve a program beneficial for the riparian population.

We should also note the significant change that is taking place in the region, particularly the departure of rural families and the arrival of new urban occupants along the roads. This change deeply affects the spatial management system as well as the local practice that will be oriented towards recreation and tourism.

In conclusion, the perspective of community-based forest management through the participatory and partnership approach is affirmed. It leads to taking into account the know-how and local priorities for the organization of local populations for the collective use of forests. This problem shows the interest of identifying and initiating forms of operational organization in the management of natural resources. In order to do this, the challenge is to assess the role of these entities, their progressive transformation (regulatory framework, development strategy) so that they become true actors in sustainable community management of forests.

References

1. Schreiber G., Promotion of local natural resource management, agriculture and sustainable development, I (1994) 25-28.
2. Laouina A., Chaker M., Naciri R. & Nafaa R., Anthropogenic erosion in the Mediterranean countries, the case of northern Morocco, *Bull. Assoc. Géogr. Franç,* (1993) 384- 398.
3. Nafaa R., Laouina A. & Watfeh A., Occupation of soils and land degradation in the Maamora, *Forêt Méditerranée* 1.2 (1997) 45- 53.
4. Rodier J., Water analysis, naturel waters, wast water, seawater, *Dunod Edit., Paris,* (1980) 1135.
5. Umlil J., Le patrimoine forestier de la province de Benslimane, les enjeux et les défis de la gestion durable, les travaux du symposium national «Gestion environnementale et développement durable», *Pub. Chair. UNESCO.GS. Natural.* 2 (1999) 17- 26.
6. Chninigue J., Potentiel écologique et pastoral de la forêt de Benslimane, actes du symposium national «Gestion environnementale et développement durable», *Pub. Chair. UNESCO.GS. Natural*. 2 (1999) 53- 58
7. Laouina A., Naciri R., Chaker M., Ferreira A., Karine Boulet A., Coelho C. & Nafaa R., Les médias et les sols de la Région de Benslimane, la caractérisation des médias et l'analyse des processus de dégradation, les procédures Du symposium national «Gestion de l'environnement et développement durable»*Pub. Chair. UNESCO.GS. Natural.*2 (1999) 59- 82.
8. Iraki A., Sekrouhi A., Benslimane, une province qui glisse entre les espaces de subsistance et les questions nationales, les actes du symposium national «Gestion de l'environnement et développement durable», *Pub. Chair. UNESCO.GS. Natural*. 2 (1999) 113- 134.

9. Benbrahim K.F., Ismaili M., Bennrahim S.F., Tribak A., Issues of environmental degradation through desertification and deforestation: the impact of the phenomenon in Morocco. Drought, 15(4) (2004) 307-20

10. Liu J., Integrating ecology with human demography, behavior, and socioeconomics: Needs and approaches. Ecological Modelling, 140 (2001) 1-8.

11. The National Action Programme to Combat Desertification, Updating and adaptation to the specific zonal, Summary Report, (2013) 30.

12. Tsouli Faroukh A., Tellal R. & Qarro M., Evaluation and Analysis of Forest Dynamics of the Forest of Benslimane, Morocco, *IJLRST* 5 (2016) 5-10.

13. General information on the Moroccan Agriculture General Census of Agriculture (CGA) (1996).

14. General census of population and habitat (GCPH), High Commission for Planning (HCP), Morocco, (2004-2014).

15. FAO, Rome, Participation of the population in the development of the forest, (1982).

16. Rural Commune of Ain Tizgha, Participatory Diagnosis of the Rural Municipality of Ain Tizgha, (2009) 15-86.

17. High Commission for Water and Forests and Combating Desertification, Benslimane forest management files, (1998) 1.

18. FAO, Impact of development strategies on rural populations, (1989).

19. IRAKI A. & SEKROUHI A., Benslimane: A province that oscillates between subsistence spaces and spaces with national stakes. Symposium on the sustainable development of the province of Benslimane, the place of forest and forestry activities, *Pub. Chair. UNESCO.GS. Natural*. 2 (1999) 113-135.

20. ONU, New York, Policies for the participation of the population as a means of advancing social integration, (1987).

21. Hmmad Chalrhami H., Mahdioui L., Allali H., El Mzouri E. & ABBAS Y., Analysis of anthropogenic impacts on the achach forest degradation in central plateau, Morocco, *IJLRST* 3 (2014) 176-180.

22. Laaribya S., il est nécessaire de sauver la forêt de Maamora (Maroc), Forêt méditerranéenne t. *XXVII*, 1 (2006) 65- 72.

23. Dessoussa E., El Antry S., Kadiri Z. &Abourouh M., Problems of cork oak in the Mediterranean basin "Rehabilitation of cork oak forests", *Annal. Rech. Forest.Maroc*, 39 (2008) 63- 84.

24. Machouri N., Changes in the lifestyle of the population and consequences on the sustainability of forest resources, the case of the rural communes of sidi Bettache and Bir Ennasr (Benslimane province), *RGM. Pub. ANAGEM,* 25 (2009) 131- 146.

25. Machouri N. & Laouina A., Erosion phenomena in forest and perforest areas: between natural fragility, anthropogenic actions and forest management techniques. Proceedings of the scientific meeting on "Anthropogenic erosion in Morocco: Methods of study, extension and processes", *Groupe Pars Géo 14, Université Ibn Tofail, FLSH, Kenitra,* (2008) 83- 94.

26. Buckley R., Environmental impacts in the encyclopedia of ecotourism, *Oxon, UK, New York, NY: CABIPub,*(2001) 363- 378.

27. Machouri N., Laouina A. & Ibnattya A., Contribution to the evaluation of the pastoral potential of the Oued Tifsassine forest, Benslimane Province, *Pub. RGM,* 22 (2006) 20- 37.

28. Blamey R K., Principles of ecotourism in the encyclopedia of ecotourism, *Oxon, UK, New York, NY: CABI Pub,*(2001) 5- 22.

29. Machouri N., Sfa M. & Laouina A., Contribution to the development of a participatory sustainable development strategy for a Moroccan forest region, *Pub. ANAGEM*, 2 (2008) 553- 567.

30. Machouri N., Laouina A., & Ibnattya A., Contribution à l'évaluation des potentialités pastorales de la forêt d'Oued Tifsassine, Province Benslimane. Pub, Revue de Géographie du Maroc (RGM), N°1- 2, 22 (2006) 20-37.

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