Agricultural landscapes, local development and territorial challenges
Case of Zaghouan, Tunisia

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Abstract
In the region of Zaghouan agricultural landscapes know profound mutations liable since years - we tried
to find out the major lines which will be presented and analysed in this essay. It is about evolution of
production systems, the ways of handling space and the use of natural resources, a whole set of
transformations leading to restructuring today the specifics of these agricultural landscapes.
The subject of this article, based on evaluative context, is analysing the main mutations in handling the
space and the use of natural resources; the viability of economic dynamics and the conditions for regional
development in the context of the environmental, economic and socio-territorial issues to which the
Zaghouan region is facing.
Key words: agrarian territory, rural landscape, rurality, socio-economic developments, agrarian change

1. Introduction
At the Zaghouan scale, economic and social development depends on an intense mobilization of the
natural resources of the region. This mobilization has implications for the balance and sustainability of
natural resources. In spite of efforts to diversify the regional and local economy, the Zaghouan region
has maintained its agricultural vocation (Riahi and Rezig, 2011). On the other hand, the area has, for
years, problems of demographic decline that the transformation of the agricultural sector with its job. -
and income losses has further aggravated. The establishment of certain economic sectors (manufacturing
industry and administrative and non-administrative services) was not able to create a dynamic and
sufficient procedure able to relieve the agricultural sector of human pressure.

2. Material and method
2.1. Study Area
The Zaghouan region enjoys a privileged and median position between the northern, north-western and
central governorates. Traditionally agricultural, the region has recently undergone a process of
industrialization. This agriculture generates little surplus to reinvest. If agriculture is not at its peak today,
due to the change in the status of the city, the consumption of certain agricultural areas through
urbanization, it is still the basis of the economy in Zaghouan which provides employment for a large
percentage of the population.
2.2. Demographic characterization
According to the censuses of 2014, the governorate of Zaghouan has 176945 inhabitants, of which 57% are living in rural areas, which already gives it its vocation and character. In Zaghouan, population densities are moderate with a density of 63, 9% (INS, 2014), this density is below the national average of 70.9%.
The study site shows a general rate of increase of population between 2004 and 2014 of around 0.99% lower than the national average of 1.7%.
If we compare the growth rate between 1994-2004 and 2004-2014, we found that this rate has fallen about 0.27% throughout the governorate. However, this rate shows inequalities between the delegations, while it shows positive growth in the Zaghouan and Zriba delegations, it has fallen slightly in Bir Mecherga and El Fahs, it has fallen considerably in Saouaf and Nadhour respectively from 0.87% to 0.48% and from 2.36% to 0.64% .The region also has negative net migration below the national average.

2.3. Land use

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Figure 1: Location of Zaghouan

Figure 2: Demographic evolution of the region between 1994 and 2014
Out of a total of 2820 00 ha of land that covers the Zaghouan region, 185 000 ha are arable which presents 65%, the rest is forest (65 600ha), ranges (17 000) and uncultivated land (10 000ha). With 275,562ha of useful agricultural land, this region accounts for about 6% of the national potential for agricultural production. This classification shows that arable land is ranked first, with percentages varying between 81% in Bir Mecherga and 56.6% in Saouaf (as a percentage of the area of the delegations), which reveals the region's vocation, agricultural par excellence. Forests appear in second place with percentages ranging from 33% in El Fahs to 8% in Bir Mecherga. The region of Zaghouan has a large area of forests that gives it its rich biodiversity. The patterns are considerably less important in the organization of land use. These areas are concentrated particularly in Bir Mecherga and also El Fahs and Nadhour. In the last place, uncultivated land is positioned with very low percentages ranking from 2% in the delegation of Bir Mecherga to 6% in Saouaf.

Table 2: Evolution of the different speculations between 1970 and 2014

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The agricultural activity in this region is dominated by extensive speculation: cereal farming and breeding farming, which are heavily subject to weather conditions. Arboriculture, irrigated perimeters are relatively less represented. The analysis of the table highlights the remarkable evolution of the different vocations in the Zaghouan region, an evolution which goes from the simple to the double in the arboriculture. Arboriculture occupies the third place after cereals and livestock in the value of the agricultural production of the region. This activity occupies an area of 49 600ha and is dominated mainly by olive trees. The second observation concerns the irrigated perimeters; this sector has seen a significant increase from 1970 to 2014 going from 1700 to 10277 hectares.
Breeding is a fundamental key sector in the economy of the region. The herd is based on goats, sheep and cattle. The breeding activity includes 43,500 head of goats, appearing notably in the delegation of Zriba, and 361600 head of sheep including 91850 heads concentrated in the delegation of El Fahs. This small herd of small ruminants has grown quite significantly. Cattle breeding also hold an important place in the sector with 25,650 head, this type of breeding is in particular to be found in the delegations of Bir Mecherga and El Fahs.

2.4. Land tenure

Regarding the land tenure, and as shown in the following table, private status accounts for almost 55% of the area (154028 ha) and state owned land 45% (127972 ha). State owned land for the entire governorate of Zaghouan is part of the rural domain. They present the result of an aggregate of factors, mainly the recovery of land from the colonial period and the dissociation of certain “Habous” (type of legislation relating to land ownership) public and mixed.

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<td>11650</td>
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<td>18450</td>
<td>54.3</td>
<td>15550</td>
<td>45.7</td>
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<td>El Fahs</td>
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<td>48600</td>
<td>54</td>
<td>41400</td>
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<tr>
<td>Bir Mecherga</td>
<td>54000</td>
<td>30078</td>
<td>55.7</td>
<td>23922</td>
<td>44.3</td>
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<tr>
<td>Total</td>
<td>282000</td>
<td>154028</td>
<td>54.9</td>
<td>127972</td>
<td>45.1</td>
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2.3. The structure of private exploitations

Referring to the results of the survey on farm structures for the 2004-2005 crop years carried out by the General Directorate of Planning, Development and Agricultural Investments of the Ministry of Agriculture, vast majority of the land is exploited by a minority of farmers. Indeed, only 3.9% of the
farmers own farms of 50 ha or more and hold 111,300 ha, or 58% of the area under management in the governorate with an average area of 232.3 ha. On the other hand, 72% of the holders have land with an area of less than 10 ha and cover 35,500 ha, or 18.5% of the exploited area with an average of 4.1 ha per farm.

![Figure 4: Exploitations: Distribution by size](image)

3. Results

3.1. Demographic change

The decline in demographic change refers to several socio-economic factors; first, the high unemployment rate in the region (16.9%) would have an impact on the decrease in household size. Social aspects can also influence legacy heritage strategies. The shortage of free agricultural land and the reduction of farmland in an area where agriculture remains the main activity would have an impact on the evolution of the population. It is envisaged that the population has adopted a strategy by limiting the number of children, which will make it possible to reduce the fragmentation of the land.

On the other hand, the net migration of the region is negative (-447), it is also able to explain the low evolution of the population, 23.55% of migrants leave the governorate in search of employment.

Migration is indeed a spontaneous and not necessarily controlled process of rebalancing in the space of the population-resource ratio (Picouet, 2006). Beyond this, we can think of the interactions that link all family, land, productive factors to other more subjective and measurable elements such as attachment to land, strong family solidarity. For 192 respondents throughout the region, less than 20% of respondents derive their main income from farming, while 13% report agriculture as a secondary activity. Of these respondents, 14% are farmers, and 18% work in agriculture as agricultural workers for the most part. Besides migration, there is a neglect of activity in the agricultural sector for the population of Zaghouan, rather oriented towards other sources of income, resulting in the use of agricultural activity as a secondary activity allowing additional profits. These changes are not without their impact on agrarian landscapes, which tend to decline or become a marginal contribution to the income of households of a part of the agricultural population which is limited to self-consumption and translates by the gradual abandonment of agriculture as a main source of income; or to be transformed by development of the exploitation manifested by the increase of the capital, intensification, the multiplication of livestocks and the expansion of the agricultural lands.

3.2. The mutations of the agrarian system

The governorate of Zaghouan consists of a mixed agrarian system, a sylvo-pastoral system of mountain and a system of plain valued by the cereal culture and the arboriculture. The region has evolved since independence and especially since the early 1980s. It has been demonstrated both by the considerable increase in dry-growing arboriculture, and in particular the olive tree and almond and irrigated...
perimeters, and by the low development of rangelands and the decline of cereal crops (Louhichi, 2011). As far as livestock production is concerned, it is the main economic activity in all “douars” and most families. With a predominance of small ruminants, this activity has also evolved considerably. This evolution of the agrarian system is manifested by a significant increase in livestock numbers, and a very weak or even stagnant evolution in terms of the area of the range. This twofold development puts pressure on natural resources and has not been accompanied by a strategy of forage crops in cropping systems. All this was manifested by pressure on the pastoral resources, particularly those of natural rangelands and forests and by a structural forage deficit of the governorate. Considering the development of agriculture and the changes in agrarian systems have revealed a radical change in the organization of rural society, on the one hand, the reduction of the traditional organization of the population based on communities, and the growth of individual farmers and, on the other hand, the emergence of a new figure of social organization and relationship to the land. The balance sheet represents a transition from a tribal agro-pastoral society to a peasant agricultural society. These modes of organization of social relations and belonging diverge from one social structure to another, as well as relations with the land, these evolutions must be taken into consideration and analysed both: in the analysis of the relationship of the population to natural resources and, on the other hand, in the elaboration of representative bodies of communities and in the establishment of basic agricultural establishments.

3.3. Challenges of agricultural development in the region
The main problem of the agricultural sector in the region remains in the small area of the farms (72% of the land is less than 10 ha). Indeed, the predominance of these small farms is mainly due to the problems of agricultural land status and the division and extreme division of land as a result of inheritance. Indeed, these small farmers usually manage family breeding projects. In fact their production system remains subject to a traditional mode of operation little diversified and particularly focused on self-consumption. These small farms are most often topographically marginal and unfavorable to cultivation. The rugged terrain and the nature of the soils greatly reduce their ability to farm. The lack of land resources and their properties, the lack of financing and the instability of production generally lead farmers to a total rejection of risks (no land exploited for rent or share cropping, no recourse to credit, etc.) and a lack of dynamism (Louhichi, 2001). The second problem concerns the financing of private agricultural investment in the governorate of Zaghouan. This is largely due to self-financing and bank loans, which account for 92% of the total. (CNEA, 2014). The banking system should consolidate local dynamics and generate positive influences from the sectors of the economy following private investment in agriculture. However, the credit terms are limited on the one hand by the constraints linked to farms and on the other hand by the reduced number of agricultural investors. The main constraints relate to the land situation which presents the greatest handicap for access to credit, the excessive fragmentation of plots which makes it difficult to design projects, the nature of the actions which may be punctual and which do not justify a satisfactory return and the low reimbursement rates of most farmers. The rather conjectural observation in the region reduces the admission to the formal system of agricultural credit. Provision should therefore be made for the revision of this system in order to ensure a better integration of the private sector into its economic and financial environment.

3.4. The forest: a low dynamic source of income
Families are getting their income from various activities provided by the head of household and other active members. In this multi activity strategy, the loss of agriculture in the family income is always present with varying proportions according to the climatic conditions of the year and the size of the farm. Other sources of income are mainly forestry and services. The Zaghouan forest is a large population housing area, which is still exploited to supply the population. Indeed, alongside agriculture and grazing, the population exploits wood and non-wood forest resources, including fuel wood, beekeeping, coal and the locust bean harvest. The forest also provides a source of employment for the elderly population working in the regional yards. The region’s forest heritage provides potential resources that can be exploited thanks to its wealth of
Aleppo pine, rosemary, wood and medicinal plants. Other activities related to secondary forest products are largely clandestine or without prior authorization and are practiced only by a limited number of families. However, in spite of the wealth of forest resources, the population, due to their isolation and low institutional and technical levels, has not been able to profit adequately from these resources; they are waiting for the state to put in place local development projects. The lack of initiatives dampens the economic dynamics in these forest areas.

4. Conclusion
The cross-references we have made to this contribution in the Zaghouan region have made it possible to identify and analyze some aspects of the changes in agrarian landscapes that affect the economy, societies and space. In order to frame these changes that the region has just experienced, it is imperative to rethink the rational management of natural and human resources and to exploit the regional potential on a sustainable basis.

In this context, it becomes essential to ensure, at the same time as resource sustainability, economic development and social equity. The achievement of these objectives involves the participation of all the actors of the territory with an institutional framework more appropriate to this participation. Moreover, this policy package can’t succeed without a political framework that gives the necessary impetus to the economy and guides and coordinates relations between sectors.

References