

CHAPTER 7

MANAGING COLLECTIVE LAND AND RANGELANDS

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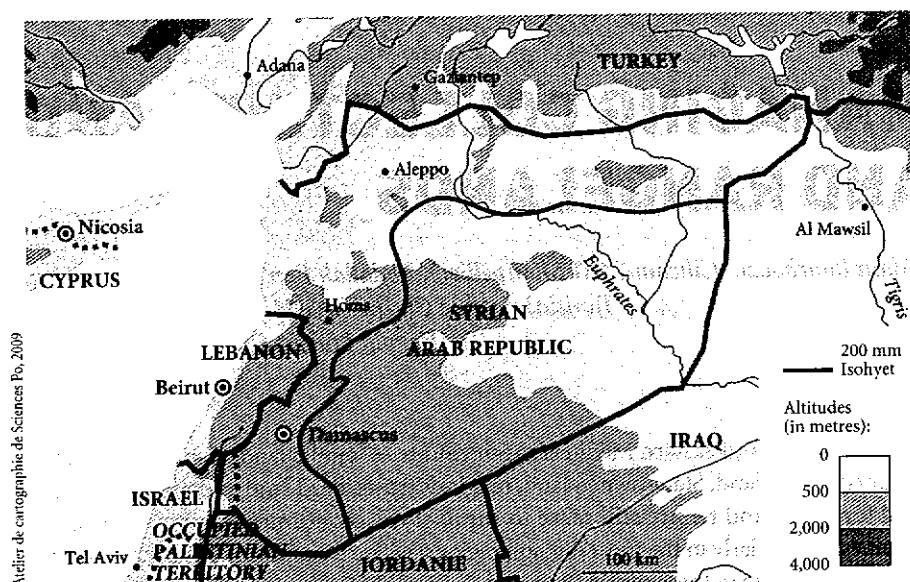
In the southern and eastern Mediterranean countries, public land, commons, tribal or douar collective land, State-owned land, religious trusts, dead land and numerous other legal forms of land tenure still serve to support the economies of many rural communities, particularly in the most difficult regions, where pastoralism is the main activity. The issues at stake in these regions are many and varied and merit closer attention: they are economic in nature, for the supply of meat to towns and cities needs to be regulated and the money transfers from emigrants to their communities of origin, which are fundamental to the economy of these regions, needs to be managed; they are sociological in that the conflicts amongst livestock farmers have to be controlled and action is needed to combat the poverty that prevails amongst the smallest farmers; they are political in that difficult areas, which are often border zones, need to be protected and internal emigration must be curbed; and, lastly, they are ecological in nature, since measures are needed to control erosion, overgrazing and the loss of biodiversity.

Land that is used communally, including collective land strictly speaking, is of course only one element of the pastoral problem, but it concerns vast areas and many different population groups who take part in the local economies. In the Maghreb, it is reckoned that 12 to 15 million people are living in difficult regions, steppeland areas, mountains and arid regions, where agro-pastoral systems using collective rangelands predominate. In Syria, the *badiya* (Syrian steppe), which includes areas where annual rainfall is less than 200 mm, covers 55% of the territory, and population estimates vary from 0.9 to 1.5 million people (cf. Map 1).

This wide variation is due to the fact that this population consists mainly of semi-nomadic families, who often have one fixed base, and sometimes several, situated outside the *badiya*. The main place of residence of many families can thus be defined as either inside or outside the *badiya*.

The exact population figures are uncertain, as are the figures on area, for the statistics on the rangelands that are actually used "communally" are very mixed: State-owned or common forestlands or rangelands that are wooded to a varying extent, farmland that

Map 1 - Locating the badiya



is lying fallow and long-term fallow land. In the case of Morocco, the 1996 census recorded 11.8 million ha of collective land, but this figure only includes delineated land, very little of which is registered. Approximately 1 million ha that are officially cultivated have to be subtracted (in actual fact probably twice that area) as well as wooded land or steppe that has been incorporated by law into the State-owned fixed assets (forests, esparto grasslands, etc., i.e. 6 to 7 million ha), which the pastoralists use communally, plus the arid and desert areas (30 million ha!), such as the Saharan south-west of the country, which is not yet covered by the Land Code. The authorities still seem to be sitting on the sidelines as regards the status to be given to these areas, which are still part of the land "assimilated to collective land" on the basis of the way in which it is used.

In Algeria, there are 39 million ha of State-owned rangelands (the former *arch*), excluding desert land, but there are as yet no precise data on the proportions that are under crop and those that are used for grazing. In Tunisia, 1.4 million hectares have recently been divided up (and most of this land is cultivated), and a further 200,000 hectares still have to be dealt with. There are only 1.4 million ha of common rangelands left, which are either in collective tenure (400,000 ha) or in forest tenure.

Collective rangelands in agrarian history

Although the Maghreb and Mashraq have very different histories, it can be said in general that collective land in the steppe regions and mountains (including forest areas) was farmed extensively in the mid 19th century by communities of nomadic farmers (the Arab Rahala in the Maghreb and the Bedouins in the Mashraq), who lived in tent settlements and moved around the region with their herds of camels and flocks of sheep

and goats. These pastoral areas, whose borders were fairly fluid, were divided into areas of influence or territories with focal points situated around the limited areas of cropland¹ and the water points used in the summer. Nomadism was organised in large armed groups, whose extensive mobility was structured around three imperatives: to defend and watch over the tribal territory, to seek pastureland that could be farmed in accordance with the climate sequences, and to get to markets, for it was not possible for these nomads to be self-sufficient; they traded and bartered goods (sheep and goats for cereals, dates, henna, etc.) using large herds of camels for transport (and mules in the mountain areas), which accompanied them everywhere.

When the Maghreb became part of the French colonial empire,² colonisation in the steppelands and mountain areas took the form of supervision rather than occupation, which was the case in the plains. This episode thus did not involve extensive land spoliation, nor did it disrupt pastoral production methods. But the changes that came about, whether welcome or not, were nonetheless far-reaching: the precarious existence of these population groups was attenuated through the introduction of preventive measures for animal and human health, and through action to open up these enclaved pastoral societies to the national economy; furthermore, lawyers in Algeria, Tunisia and Morocco were called upon to "produce an interpretation of the indigenous land tenure system that would allow the colonists to appropriate land and at the same time preserve the minimum of agricultural area necessary to the survival of the rural communities". The strategies adopted differed somewhat from one country to another.

Algeria, which first came under the control of the Ottoman Empire and was then colonised by France, and where the pastoral areas were the collective property of the tribes, was a veritable field of legal experimentation. In the early days of colonisation there were advocates of a very state-centred vision of Muslim land law. "The pre-colonial state, and thus its colonial successor, owned the land of the country and tenancy was merely a leniency granted to the tribes by the sovereign; one could thus simply draw on these as yet uncultivated land reserves in order to create official colonial property." Others, who were supported by the colonists, held, on the contrary, that the land – and in particular the collective tribal land – was owned under private law (*kharaj* land) and was therefore deliverable to the market without any legal constraint. These issues are expressed specifically in the main laws of the colonial period. The Senatus Consulte Law of 1863 makes a distinction in the territory of each group between *beylik* property (belonging to the State), *melks* property (belonging to individuals), common property and collective property, the last two categories being group property. This law, which came into effect at the end of the 19th century, stipulated that the territories of the tribes and *douars* were to be delimited and that private property was to be created. Since it was considered at the time that the steppes could not be colonised, the only delimitation measures that were carried out concerned the tribal territories.

The legislation introduced in 1873 and 1887, on the other hand, aimed to facilitate access for colonists to collective land by returning to the concept of *arch* land in the sense of

1 - The few areas of arable land in the lowlands or flood areas were open to all for individual use, which was organised in various ways (drawing of lots each year for the distribution of the parcels, and so on).

2 - Algeria was colonised in 1845, Tunisia became a protectorate in 1881, followed by Morocco, which, although the colonial power was present from 1906 onwards, was not completely occupied until 1937.

tenancy tolerated by the State. The changes concerning forestland were more radical for the various population groups. Before colonisation, forests, "dead lands", that is to say, "land which produced nothing and belonged to no one", were the property of the *beylik* (central power), and the riparian populations were entitled to use it (for grazing, cutting, hunting, and ploughing clearings). The French State took over from the *beylik* and appropriated the forestland. Colonisation subsequently limited rights drastically and grazing was only allowed according to what the colonial power considered to be the forest's "potential". It was prohibited to bring animals into the forest that were intended for resale as well as animals that were tended by one person for another person; furthermore, the law of 18 July 1874 prohibited grazing for six years after any forest fire.

After Independence (in 1962), the nationalisation of *arch* land (in 1971) prepared the way for incorporating the steppes into the new Pastoral Code in 1975, bringing them under municipal management. The authorities antagonised big and small farmers; the legislation was a failure and it brought the end of consensus. A law passed in 1983 then allowed access to individual ownership of these areas, provided that the land allocated by the State was developed agriculturally (access to agricultural land ownership). Here again, the legislation was unsuccessful. The 1990 Land Planning Act then endeavoured to give a more effective definition of steppes (land below the 300 mm isohyet) said to be "for pastoral use" and to integrate them into the property owned by the State, thus providing a basis for a new policy for developing land through leasehold (Bessaoud, 2002). The legislator was well aware that crops were grown on rangelands and made provision for a new law (which has yet to materialise) that was to define the ways and means of granting rights to the perpetual use and enjoyment of that cropland. In actual fact, land tenure in the steppes has always been open-access tenure, and herdsmen have been duty-bound by custom to respect the cleared areas under crop.

In Tunisia, the colonial authorities first drew on the *melk* lands in the north of the country and along the coast when looking for land to distribute to the colonists; subsequently, in order to cope with growing demand, they sought legitimacy in Muslim law in order to appropriate part of the collective land of the tribes. The *beylik* decree of 1896 declared that dead lands (*mawat*) belonged to the State, thus denying the tribes the right of ownership which throughout Islamic countries derived from occupation and ancestral enjoyment. The same decree recognised that there were 3 million ha of collective land in the centre and south of the country and called upon the administration to delimit that land without delay. This was done between 1905 and 1912. Some land was thus recovered, becoming State property, and was then distributed to the colonists, but, as was to be the case in Morocco some time later, there was heated debate amongst the colonial lawyers, some of whom, such as Dumas, almost alone against all, defended "the ancestral right of the tribes to the enjoyment and collective ownership of their lands". The decree promulgated in 1935 officialised the status of the lands enjoyed by the tribes, also making provision for granting legal personality to a tribe by creating a management council, which replaced the traditional council of notables (*myad*). By adopting this measure the colonial administration made this structure more democratic, since the designation of members of the council by the notables themselves was replaced by the election of members by heads of families. The notables, who were worried about control by the administration and the risk of land spoliation, proceeded to divide up flood areas (*felta*) as of 1905 on a strictly egalitarian basis. By 1935, their appetites had been whetted

and the land was allocated according to the "vivification" rule, which, in Muslim law, ratifies clearing operations and, so to speak, rewards the efforts made but creates major inequalities. This was compounded by the land divisions carried out on the basis of the legal costs incurred by each head of family as the result of the numerous lawsuits amongst neighbouring communities over boundaries...

Just before Tunisian independence (1956), there were 3 million ha of collective land, i.e. almost one third of the country's farmland: 1,550,000 ha for agricultural use and 1,450,000 ha for use as pastureland. Successive land divisions for crop-growing, population pressures and the administration's constant concern to "settle the nomads" paved the way for the major parcelling operations that were to follow. These began in 1972-1974 and are still continuing today (see below).

In Morocco, colonial legislation, which was experimental in Algeria and already in its stride in Tunisia, opted for a pluralist system that made a distinction between State-owned property, *melk* property, registered private property, *habous* lands and collective land. In the case of the latter, the famous 1919 Dahir stipulated that "the tribes' right of ownership of the cropland and rangelands which they enjoy collectively can only be exercised under State supervision". The communities were thus fully authorised to conduct the internal management of their territories. The operations to mark out territories (defining boundaries and rights of use) laid the groundwork for land use, settling tribes definitively on their territories and officialising the collective status of the latter as it is currently laid down by law. The intentions of the colonial authorities were more or less laudable: although they were admittedly aiming to protect the collective lands from the appetite of the colonists, they placed the communities under close political control. Louis Milliot, the eminent lawyer from the Algiers School, whom the Protectorate consulted in 1921, was explicit as to the justification of this option: "Let us guard against uprooting the population and congesting towns and cities with a proletariat that is liable to fall in with troublemakers. Any untimely or premature measure such as distributing large numbers of smallholder parcels to settlers would convince that proletariat that it is going to be the victim of successive spoliations; serious unrest could ensue."

Despite these relative protections, the land and distribution operations completely disrupted pastoralist movements. An entire population was either driven to marginal areas or attracted by the new incomes procured by work on colonial farms, in mines or esparto grass yards or by emigration. More serious, the conferring of State-owned status on "any land covered with woody vegetation of natural origin" was perceived by these (essentially Berber-speaking) population groups as an infringement of their rights. This concept of State ownership, which was applicable to forest areas where customs were veritable rights, has been an eternal source of conflict ever since, ranging in intensity from one country to another.

Although Turkey is not part of the Mashraq, the country played a major role in this chapter of land history. Turkish legislation governing collective and common land dates back to the zenith of the Ottoman Empire. General census records were introduced under the reign of Suleiman the Magnificent (1520-1566) in order to determine land tenure rights, and these records were subsequently complemented by a large number of *firman* (orders issued by the Sultan in writing) and eventually incorporated into the

Land Code in 1858, which left its mark on all of the territories of the Empire from the Balkans to Algeria. That Code made a distinction between five main categories of land: land in private property (*mullak*); *miri* land, mainly agricultural, where tenancy was granted by the State; this land was gradually assimilated to private property; land belonging to religious institutions (*waqf*); land which one or several villages were entitled to use and which could not be appropriated (*matruka*); and, lastly, "dead" land (*mawat*) or uncultivated land which was reserved for grazing and on which Islamic law awarded *ihya*, which granted the land to whoever developed it. The latter two categories, *matruka* and *mawat*, were for common use. In 1923, Atatürk proclaimed the Republic and modernised the law of the Empire by adopting provisions from the codes of western countries. But the instruments concerning land allocated as collective pastureland were so vague that the former instruments continued to be authoritative and the former provisions of the Land Code and of Ottoman customary law still have to be applied today in judicial decisions. This body of former rules obviously does not adequately meet the needs of present-day pastoralism in Turkey.

In Syria, the Ottoman *qanun* or Syrian Civil Code did not define any categories for designating "tribal territories" (*dirah*). Uncultivated steppes corresponded to dead land (*mawat*), which was open to everyone. At the beginning of the 20th century, "the world of the steppe was divided into three main tribal groups: camel-herding tribes, sheep-raising tribes and semi-nomadic tribes. The Bedouin economy was based on animal husbandry and, in the case of camel-herding tribes, on plunder and 'safe passage' or other tolls."³ The use of these territories, whose boundaries were fluid, was connected with the water points, wells or water tanks, to which access depended on tribal affiliation. The Mandate administration was well aware of the strategic importance of these wells and water tanks, which marked the tribal migration orbits; they were listed and mapped together with the tribal migration areas by the French military in the 1930s (Métral, 2006).

Around the 1940s, nomadic pastoralism seemed doomed as a lifestyle when the tribal raids and 'safe passage' tolls came to an end, the caravan trade collapsed and the camel stock was seriously depleted. Crop expansion into the steppelands marked the beginning of considerable changes (Chatty, 1986). Although the fluid boundaries of the tribal territories were compatible with rangeland use, they became a source of conflict when the pastureland was cultivated. Negotiations on the delimitation of the territories continued in the 1940s and 1950s and resulted in the conclusion of territorial agreements. The tribes had two primary objectives: to specify the area where their members could submit an application for land for cultivation and to ensure their access to pastureland (Rae, 2006). These agreements constituted recognition of customary and tribal rites. The vivification principle granted the tribe that was authorised to cultivate the land the right of ownership until the harvest, and once the crop had been harvested the field returned to open-access status.

These years were marked by rapid growth in the cultivated areas in the *badiya*, more specifically in the plains in the east of the country, where almost 1 million ha were cultivated within a space of some 10 years. Together with the increase in cotton-growing in irrigable areas, this expansion contributed to the rapid growth in agriculture in the

3 - Métral (2006).

1950s and was led by farm contractors, most of whom were from Aleppo and who had invested in the purchase of tractors and harvesters. These contractors farmed the land in conjunction with the chiefs of the Bedouin tribes, providing seeds and carrying out all of the work; 80% of the harvest accrued to them and the remaining 20% went to the tribal chiefs, who were also entitled to use the straw and stubble for feeding their animals. The agricultural enterprises farmed several thousand hectares individually, and the crops spread to the detriment of the best pastureland.

After independence (1946), Syrian policy on the steppes and on nomadic pastoralists was called in question. The 1947 programme of the Baath party called expressly for measures to settle the Bedouins, and the project was included in the 1950 and 1953 Constitutions. Furthermore, the 1951 agrarian reform project made provision for expropriating the large demesnes which the Bedouin chiefs had established at the time of the Mandate. It met with opposition from landowners and the chiefs of tribes represented in the parliament and was never applied; the nomad settlement programme has also remained a dead letter.

The establishment of the Arab Republic uniting Syria and Egypt in 1958 marked a decisive turning point. In addition to the implementation of land reforms, the special legal provisions enjoyed by the nomadic tribes were abolished, and the very concept of tribe was eliminated from official discourse. However, contrary to what might have been expected of the Baath party, no settlement programme was introduced, and the extension of agriculture in the steppelands, the development of irrigation, the general introduction of power pumps and the boom in cotton production marked the recovery of a very opportunist and very reactive Bedouin economy.

In the early days of independence,⁴ the traditional pastoral societies of the Maghreb and of the Mashraq were already undergoing transformation: as the result of the population explosion, the population in the steppe regions quadrupled in just under a hundred years;⁵ nomad settlement, which had started at a very early date, was progressing rapidly; new-found security had resulted in the splintering of defensive groups into small units, which were more peaceable; the scope of nomadic movements was much reduced, and markets opened in the middle of the steppelands or on the borders; the most deprived had already left the steppes to seek employment elsewhere. Colonial management, protectorates and other mandates, thus left a deep mark on these pastoral areas.

The historical heritage

The upheavals described above are almost contemporary. Compared to the other Mediterranean countries, particularly those on the northern shores, pastoralism in the countries of the South exhibits several fundamental aspects dating from that history.

► *The persistence of vast territories used collectively.* Public land (collective tribal or *douar* land, dead land, etc.) still serves to support the economies of many communities in difficult regions and plays an important role in maintaining small peasants – the right

4 - Morocco and Tunisia in 1956, Algeria in 1962, and Syria in 1946.

5 - In the period from the late 19th century to the year 2000, the populations of Tunisia, Algeria and Morocco increased from 1.8 to 10 million, from 5 to 30 million and from 4.5 to 28 million respectively.

to collective land is "the right of the class which owns nothing". These land reserves are coveted and are an issue where the stakes are still as high as they were in the past.

- ▶ *Animal and human mobility.* Tents, huts or the yurts of the Yörük, the essential equipment of mobile herdsmen, still endure today in many regions (in the central and eastern High Atlas, in the Zemmour-Zaer region and in the steppes of eastern Morocco, in the high steppe and desert regions of Algeria, in the arid regions of El Ouara and the Dahar in Tunisia, in the Syrian and Jordan steppelands, and in the Taurus Mountains in Turkey). And even where the tents have been put away, or in regions of long-standing settlement where they were never used, migrations over long distances are nonetheless still undertaken, particularly in the case of large herds or flocks. It should be added that sedentary animal husbandry on rangelands is a practice found throughout these regions, "sedentary" meaning here that the herds and flocks often travel long distances but return to the village each evening. This form of animal husbandry is more common in agro-pastoral than in pastoral systems.
- ▶ *The persistence of the "tribal phenomenon" and the resistance of customary law.* As a corollary to the above, this is an aspect that administrations frequently dismiss or underestimate. Although it is not always the case, the modern administrative apportionment of a country (rural community, delegation, etc.) often aims to parcel out pastoral territories, in line with the general idea that "the *arouch* must be broken".⁶ But the rule that is applied – a rule that has been taken from customary law and incorporated into modern law – states that it is affiliation to a group (tribe, faction, lineage, etc.) that gives rise to the right to collective grazing. The use of collective resources and the conditions of use are based on these crossed rights and are thus controlled to a greater or lesser extent by the communities concerned. But this type of intention must be placed carefully in context, since situations differ widely from one country to another.

In Syria, the Baath revolution in 1963 tried to break the power of the tribal chiefs. In the Al-Jazira region, the implementation of a huge Euphrates project which would intensify agricultural production and bring a "new socialist society" was to be based on new frameworks. But in the 1970s the tribes asserted themselves as the inescapable vectors of the advantages granted by the regime, and their chiefs infiltrated the agricultural cooperatives. The successive Syrian regimes actually adopted a pragmatic attitude to the dominant tribal society, allowing the structures for controlling the population to be diverted to the advantage of a minority of sheiks from the semi-nomadic *châwaya* tribes, provided that they were active Baath Party executives. Do they still control the pastoral areas? Surveys conducted in Aleppo Province reveal clearly that customary law exists which is based on the concept of tribal territories (Rae *et al.*, 2002), but many farmers consider that the role played by the tribal authorities in pastoral management is weak (Wachholtz, 1996). Officially, the Syrian projects concerning the rangelands are very vague, mentioning the "Bedouin community" or pastoral communities, and they carefully avoid specifying any structures.

In Algeria, on the other hand, the power of the tribes was systematically eroded throughout the colonial period, and the pressures which the authorities brought to bear in order

6 - That is to say, the tribal system must be broken, to quote the expression attributed to Bourguiba.

to break the tribal chiefs (in particular during some ten peasant revolts which took place in the course of the century and which were severely repressed) were much more forceful than in the countries under mandate or protectorate. The ensuing War of Independence and its notorious strategy of regrouping the population followed by the incorporation of the *arch* lands into State property in the new Algerian State considerably reduced the influence of the old structures, which, although they were not completely eliminated, were greatly weakened (Bessaoud, 2002). However, in the context of the measures to provide access to agricultural land ownership where the land was granted for development to outsiders, it was preferable for the latter to pay the *arch* (tribe) "peace money" (*hak* or *affia*).

There have been no such practices in Morocco, where affiliation to an ethnic group gives rise to the right to collective grazing. The tribal framework and the custom-based organisation that often goes with it mean that pastureland can be managed at the local level despite numerous conflicts and malpractices concerning access to resources. The same applies to Tunisia, but less explicitly; there, the sharing of collective land depends on the management council, which is composed of six full members who are elected by the community. In actual fact these elections draw on custom, allowing each lineage to be represented by one or several members, depending on the significance of the lineage. In the "Deep South", the old tribal organisation still exists in attenuated form (see Prodesud project below).

The region's historical heritage thus prevails in the steppelands and marginal areas. But these societies are subject to numerous forces which together have been contributing to the upheaval and transformation of lifestyles and production methods, particularly since the 1960s, accentuating a movement that had begun to a large extent in the previous phases.

Pastoral management in the dock

Rangeland overgrazing?

All are agreed in denouncing the inefficient use of collective land. The vegetation on these lands is dominated by steppe in the arid desert plains (overwintering plants, wood species or grasses are predominant, covering 10% to 80% of the ground surface) and a little more diversified in the mountains. But clearing operations have developed to such an extent that rain-fed agriculture and tree farming have become permanently established both in the Maghreb and in the Mashraq, transforming agrarian systems and creating new landscapes that are less homogeneous and more "patchworked", and the collective lands are part of this mosaic.

The specialists' assessment seems conclusive: overgrazing, plant depletion, loss of plant stamina, and degradation of the ecosystem are the most evident signs of what is considered to be a worrying state of collective land, particularly in the steppe regions. Output potential is estimated to have dropped by 75% in Algeria, where esparto grass cover has decreased from 40% to 13% in fifteen years. Depletion is particularly marked in the case of palatable perennials. Cover crops remain for ecologists the worst enemy of collective areas, since they establish an irreversible situation, destroying plants and pulverizing the topsoil, which is thus made highly sensitive to wind erosion.

It is difficult to quantify the scale of the problem. It is estimated that a total of 5 of the country's 20 million ha have been seriously degraded. In Tunisia, the experts reckoned back in 1976 that 12% of the total area of the country was already "seriously affected" and 40% was "moderately affected". The problem seems to be more serious in forest areas (which for herders are simply areas that are grazed collectively), for disagreement between peasant farmers and the forestry departments is leading to the overtapping of forest resources; this is happening, for example, in the evergreen oak forests of the mountain regions of the Maghreb and Turkey.

In Syria, the question of the degradation of the *badiya* has been a matter of debate since the late 1960s. Given the present state of the vegetation, it is widely accepted that the Syrian steppes are today subject to rapid degradation, which is attributed to three major causes: bushes are being uprooted to provide firewood, pastures are overgrazed, and the area of cultivated land is expanding – the latter being unquestionably the most powerful factor in the transformation of the environment.

On the rangelands, even in rainy years, the plant cover is composed essentially of annual species and geophytes and is more dense during the wet season; there are very few, or no, perennial bushes. Crops have been banned, but regeneration of the vegetation is very slow or is not taking place at all. The hypothesis of overgrazing, which is coherent with the increase in the number of animals since the 1970s, has not in fact been verified. In the western region of the *badiya*, analysis of the vegetation trend since 1975 shows that the stable zones account for an average of 82% of the area studied and that vegetation has decreased on 6% of that area and has become more dense on 12% (Debaine *et al.*, 2006). The fact that the increase in the number of sheep does not seem to have caused overgrazing can be explained by the considerable extension of exploitable area compared to what it was in the 1950s and the shorter time spent in the steppes.

Collecting firewood remains common practice, as is testified by the heaps of bushes near encampment areas or houses, but it is mainly the older bushes that are taken, since they provide more woody matter. The collection of bushes would not cause the perennial vegetation in a given area to die out, at least, not immediately.

Certain points must thus be qualified. Ecologists, who are concerned at the cultivation of pastureland and the disappearance of pastoral ecosystems, do not always review their opinions on the status of the natural vegetation, even where the agrarian system has changed completely to an agro-pastoral or agricultural system. Few arguments have been put forward to substantiate the fact that the cultivation of collective land is systematically harmful to the environment, as specialists keep hammering out. Furthermore, the claim that the states of degradation are irreversible does not always hold, for the resilience of the steppe systems (their ability to return to a state of balance) is greater than expected and is surprising even the most pessimistic. Similarly, the fact that resources are being overtapped does not mean that there are no areas that are underexploited or left fallow in certain situations (conflicts, joint tenancy, very active emigration, etc.), as is the case in low mountain regions (the Rif area, Kabylia, Khrumiria) or in the semi-desert regions in southern Morocco, Algeria or Tunisia (El Ouara, the Dahar).

The management of pasture resources on collective land thus must not be called in question in the same way everywhere. In addition to systems that have been completely

disrupted, having been undermined by conflict and having overtapped resources, the social management in many areas is peaceable and more concerned with the well-being of the community than is suggested by the hackneyed expression of "the tragedy of the commons", which has been constructed in theory and suggests that since these collective lands are doomed to disaster the only possible form of progress would be to divide them up. This is obviously a fundamental issue of debate.

Pastoral organisation and disorganisation, conflicts

Forms of pastoral organisation on collective rangelands

The importance of customary forms of rangeland organisation has often been neglected for lack of knowledge. Although they have practically disappeared, barring an inventory, from countries such as Algeria, Syria or Jordan, there are many examples in the Moroccan mountains, for example. They operate on the following principles:

1) *The dividing of pastoral territories.* The herdsman use a specific pastoral area, which can be called, and which they themselves consider to be, their "territory", and which is composed of rangelands that have collective and State-owned status. These lands are grazed and allocated to specific assignees, and it is affiliation to an ethnic group which gives rise to the right to use them. Pastoral territories are not always used exclusively by a particular group: there are intertribal pastures, tribal territories, faction territories and village collective lands. The latter develop in a number of outlying sectors that are too far away to be used by all of the villages in a faction. Only the closest villages eventually establish the right to use the land exclusively, which is then consolidated by the construction of sheepfolds and the cultivation of the land. The boundaries are not impassable barriers, except in specific cases, and the herders cross them frequently while grazing their animals on the neighbours' land, provided that they do not sleep there, and perhaps in some cases that the animals are not watered there – they thus have a right of way. On the rangelands they will carefully avoid the "areas of respect" (*itissaa*) in the immediate surroundings of a tent, sheepfold, cereal plot or water point. Everyone knows the boundaries of these temporarily private areas and abides by the rules of propriety.

2) *Customary rules and resource management.* Customary institutions do not merely guarantee territories and identify rightful claimants; they also establish numerous rules and specific practices. Custom grants the right to cut grass or forbids the cutting of grass, the right to graze cows or sheep, the right to allow a permanent shelter, or *azib*, to be built or to forbid any such construction, the right to grow crops, to install a tent while grazing animals or to graze animals without installing a tent. Seasonal prohibition of grazing (*agdal*) is also a widespread practice.

The institution of *agdal*

This institution is still very much alive in the High Atlas mountains of Morocco. It involves prohibiting grazing on a clearly delimited area of the most productive part of the rangelands in the spring or in early summer. This ban on grazing in the most sensitive period for plants, since it is when they draw on their reserves and then flower, is extremely judicious, since it is a means of strengthening vegetation stamina and ensuring a reserve of standing biomass that will be available at the end of the season.

The system always follows the traditional pattern: the pastureland is closed and opened on agreed dates, which are laid down by custom but can also be changed at the request of a party, depending on the status of resources, and the pastures are watched by guards, who are paid by the community of herdsmen or, as the case may be, by the tribal faction located in the remotest area which fears infringements most. Their role is simply to report any offenders to the *jmaa*⁷ during the two or three months of their mandate; if the offenders are from the tribe they will be punished according to custom (they were formerly required to sacrifice a sheep, but nowadays they are fined). As is the case with the pastoral territories, a distinction is made between several types of *agdal*: intertribal, tribal, applied by a faction; or applied by only a few villages. In the case of the most modest village systems, pastoral management seems to be peaceable and consensual, but at more ambitious levels (100,000 head of livestock, 1000 herdsmen), the *agdal* owe their success to the very active control by leadership (the *zaouia* in former times, nowadays the local administration as a political authority).

3) *The institutions.* The collective resources are used individually, irrespective of the conditions of access. It is in principle the *jmaa* that manages the collective, although it is not defined by law. Since the term denotes a group of persons who are bound by common interests, this assembly is not always the same in a given area. There is a tribe, faction, village, district or lineage *jmaa* depending on the type of problem to be dealt with. When it is declared that "the tribe has decided on the *agdal* opening dates", this simply means that the herdsmen most concerned have held a meeting, generally at the mosque after Friday prayers. The same applies to the drawing of lots to distribute the *azib* (shelters) or the consent to allow an outside flock into the pastureland, which only concerns a very restricted group of users who are directly concerned.

The *jmaa* can designate a delegate, *amghar n'tuga* (a 'grass chief'), or simply a *moqqadem* (loosely equivalent to a rural policeman), who is in charge of supervising transhumance activities (pitching of tents and of a "tent-cum-mosque-cum-meeting-place", use of the collective *azib*, mutual aid and searches for animals that have strayed). It also designates the *agdal* guards, who are paid by the community and who watch over the pastures during the bans and ensure that offenders are punished. More officially, the *jmaa* of each of the lineages or factions of the tribe can in certain circumstances designate a "collective land delegate", who is approved by the chief; it is this *naïb* who represents the interests of the group within the "collective land *jmaa*", which states its opinion in particular on how the land is to be divided up and on the establishment of shelters.

Regression of forms of customary organisation and pastoral conflicts

These organisational models are fragile. It is frequently declared that rangeland rights are the same for all. These virtuous professions of faith do not stand up to analysis, however, for, over and above the formal principle, vigorous strategies are developed by individuals but also by lineages or villages, which introduce major inequalities. As far as the individual is concerned, the only real stratagem for establishing one's control of a portion of collective rangeland is to take possession of a shelter (*azib*); this serves as a prelude to definitive control, which is obtained by clearing land, sowing a crop or

7 - *Jmaa*: village assembly of heads of families.

digging a well. It is thus important for a herdsman to strengthen his position on a territory by putting up *azib* in various complementary environments.

In Morocco, for example, the approval for putting up a new shelter should normally be granted at tribal level (the collective land *jmaa*) and covered by the chief. In actual practice, more limited spheres of influence are recognised where groups of various sizes have a say – the lineage, the village, the faction and, more rarely, the tribe. The area is thus much more segmented than declarations suggest, for the theoretical freedom of a flock and the permits for building shelters are constantly hampered by strict control of the rangeland at these various levels. What is more, not everyone who wants a shelter actually obtains one. When the persons concerned say, "The tribe has decided", in reality the decision has no doubt involved a complex and subtle process in which the political weight of the applicant, the consent of several influential neighbours, or even the intervention of the collective land *jmaa* or the chief himself has played a role. The final decision is often celebrated with a meal, to which a number of heads of family from the tribe or village are invited.

The fundamental principles of custom-based forms of organisation are thus constantly flouted. These pastoral societies are rarely peaceable, and the conflicts which stir them can involve killings. They occupy vast expanses that are often difficult to monitor, and they come up against problems of rights of use and limits where customary law and modern law are intermingled. Many current conflicts seem to be of little consequence (conflicts over boundaries, right of way and trespassing on transhumance trails, conflicts over reciprocity, sheepfold ownership, the right to grow crops, livestock theft, and so on) and are often masked or dormant, for in the field amicable arrangements amongst herdsmen are more often the norm. On the other hand, any intervention aiming to improve the rangelands is liable to reactivate a latent problem and raise the stakes. The local authorities then freeze all action, but do not resolve the conflict.

The dispute between forestry departments and herdsmen is one of these eternal unresolved problems. Dealing with the relations between forestry and animal husbandry involves reflecting on the combination of two radically different systems of organisation which have ignored or fought each other for many years. They are indeed diametrically opposed in every aspect: their aims (to produce wood or meat), producer organisations and representative bodies (forestry officer or agricultural adviser), action plans implemented in time frames of a century or a year, and so on. Yet the concept of agro-sylvo-pastoralism is a reality and a key element of survival in mountain regions. It has been created specifically to illustrate systems that work (argan forests, forest *agdal*, etc.). The incorporation of land into State property is a recent phenomenon in the Maghreb, and since the herdsmen feel they have been deprived of their meagre heritage there is latent or violent conflict with the forestry departments, which leads to serious problems: the typical damage caused by firewood cutting is compounded by widespread land clearing for cultivation, overgrazing and excessive foliage cutting.

When one analyses this traditional form of management and the institutions which control it one has the double impression of coherence and equilibrium, on the one hand, in a system serving mutually supportive management that is flexible and adapted closely to a complex environment, and on the other hand a more turbulent picture reflecting

the conflicts and individualistic practices developed by herdsmen in order to appropriate space. To what extent can these various forms of organisation manage resources efficiently? What are the lessons to be drawn from studying them, and what principles are to be adopted for better management of mobility?

Major changes in production systems

There are many factors which are contributing to the far-reaching transformation of animal husbandry systems on these collective lands. Some are exogenous, such as a strong top-down agricultural policy that is applied without prevarication (as is the case in Tunisia or Syria). Other factors are endogenous and are closely connected with the changes taking place within pastoral society as it opens up to the national economy. Amongst all of these various factors, key issues for the future of these regions are emerging in the course of the debate on social change – upheavals in land tenancy, a new form of mobility and innovative agro-food systems, and the reorganisation of marketing chains and of the sheep market.

The transformation of pastoral societies

This is a subject that merits special treatment exceeding the limits of the present report. The topic of “new territories” is discussed elsewhere. We shall confine ourselves here to highlighting two essential factors concerning the way in which resources are used.

The influence of the notables (kbir) and their control of collective lands

Pastoral societies in the southern Mediterranean countries have long been founded on notability. The notables, by reason of their economic power, their knowledge of networks of influence and their respectability, have always been skilled at defending the interests of their own ethnic group through their own private interests – a lesser evil. Even today, in difficult regions the political authorities rely to a large extent on this mode of governance, and the notables, all of whom are big farmers, hold sway, motivated as much by political conviction as by the aspiration to move up the social ladder. Multiplying their sources of income (emigration of relatives, acquisition of businesses, official duties) and residing temporarily in cities where their children study, they extend their control over their homeland by breaking customary rules, swell their flocks by recruiting shepherds, sow cereals where they are banned while the authorities turn a blind eye, come to agreements amongst themselves from one community to another by breaking access rules, and surround themselves with opaque networks of numerous “clients”.

Yet the notables are indubitably the vectors of modernity in pastoral environments, particularly since agricultural policies (and the aids, incentives and emoluments that accompany them) are implemented through these very networks of notability and spheres of influence and recognition. They promote innovation: trucks, feed supplementation, cultivation, sinking of wells, fattening of lambs, separation of rams, prohibition of milking ewes raised for meat production, etc. But their territorial, economic and political power can be exorbitant, and pastoralism is suffering from these phenomena of influence and alliance with the administration, perhaps more than any other field of activity. It is to be feared that a class of very big farmers (600 to 3000 sheep

or more) will eventually occupy the greater part of these steppe regions: very well equipped, very well adapted to the context, growing vast fields of cereals with unpredictable yields, living in town with their entire families and leaving the flocks in the care of paid shepherds, who live with their families in tents.

Spatial reorganisation of families

The populations of difficult environments were obviously the first to be concerned by emigration as a means of survival and of diversifying their incomes. It can be a very ancient tradition, as in the case in the Matmata Hills in southern Tunisia, or a more recent phenomenon (since the 1960s) in most steppe and mountain regions throughout the countries of the zone. Except for several regions where the networks failed to get established, there is not one family in these pastoral societies, whether rich or poor, that has not seen at least one of its members leave for the city or go abroad. The activities of the various members of the family are thus organised in concentric circles moving outwards from the core of members who remain and practice animal husbandry; these circles move farther and farther afield, from 20 or 30 km (living and working in small towns in the steppe or foothills and returning every week) to several hundred or several thousand kilometres (returning two or three times a year in the holidays for religious festivals). Financial solidarity plays a major role: money must be sent regularly, since the women and children often stay back home. This spatial fragmentation and these extra incomes are accompanied by the complete reorganisation of lifestyles and systems of husbandry. It is impossible to explain the buoyancy of the pastoral economy in these regions without referring to these migratory flows.

Thus, in the rangeland regions, pastoral territories that are used by users and rightful claimants who identify socially with the region and claim it as theirs can almost always be described as the “territory to which the group belongs” and which is operational in terms of rural area management and rural development and equivalent to the “local area” in agricultural regions. But for the last ten or twenty years developments such as family fragmentation, the close connection between the steppeland areas and the small towns which develop there, the extensive mobility of flocks and the opening of distant markets, etc., have meant that a more extensive area fairly close to the concept of “country” is involved.

From collective rangelands to individual cultivation (the *melk*)

The essential issue of debate is whether or not the collective rangelands should be parcelled out. Does dividing the land into individual plots offer better prospects of investment and development? Does it not exclude the weakest through the play of land market forces? Are there, on the other hand, efficient institutional mechanisms for managing pastoral resources collectively?

“Rampant” privatisation that is more or less tolerated

The number of people anxious to obtain a piece of rangeland in order to sow cereals or to co-plant it has been growing considerably over the past thirty or forty years. In Algeria, free access to the steppes has become virtually obsolete in the least unfavourable zones, since “owner-users” have been carving out large areas of pastureland for themselves: the strategy consists of clearing small areas (*gdel*) or simply drawing a line with a plough,

which delimits an impassable pastoral enclave, since the customary rule of respecting crops applies. The operation stops at the boundaries of the territory of the immediate neighbour, who does likewise.

In Morocco, where the State refuses to accept any dividing of collective pasturelands, the status quo seems to be continuing, but this is only on the surface, since illegal cultivation is to be found dotted over the landscape; in some cases it is just slowly eating away the pastureland, but in other cases it is more offensive (involving urban capital for large-scale development operations, to which the authorities turn a blind eye), and the "azib" (shelter) strategy is pursued. In the steppelands in the east of the country, *zniga*, long narrow strips of cleared rangeland that is roughly sown with cereals, complemented with a few tents and water tanks cleverly arranged in arc formation are used to reserve entire stretches of territory. Appropriation can also be the collective wish of a group, as is the case with the cactus plantations in the south of the Guelmim region, for example, which are run illegally on thousands of hectares of open collective tribal land (the Tekna tribe in this particular case).

But is it really illegal? In Muslim land law, "land belongs to God and thus to His representative, the Sultan." The tribes thus have much more than simply the right to use their area, and it is the power structures that decide who conquers new territory. Muslim law applies two principles, which can be contradictory: the principle of the free use of natural resources (which in fact prohibits appropriation by individuals), and the principle of vivification (*ihyaa*), according to which the land belongs to whoever has developed it and "revives" it. From this point of view, pastureland does not engender development and thus does not permit appropriation, but in actual practice the person who takes the initiative to develop it is granted the exclusive right to dispose of it.

Syrian hesitation between steppe and crops

In Syria, the objectives of conserving and restoring vegetation emerged in the 1960s and became predominant, if not exclusive, in the second half of the 1990s. The agricultural cooperatives established in the semi-arid zones held a marginal place in agricultural policy; they did not enjoy the same advantages as those enjoyed in more favourable regions and had little success. And the failure was even more marked in the case of the animal husbandry cooperatives operating in the *badiya*, which tried to establish a traditional form of pastoral organisation (see below). The permits for cultivating steppeland were thus the subject of endless procrastination reflecting the conflict between the aims of production and those of restoring vegetation: the 1970 decree authorising the cultivation of a maximum acreage of 45 ha per family, prohibition of cultivation in 1982, abolition of the ban in 1983 combined with the obligation to plant fodder shrubs on 30% of that acreage; this was then reduced to 20% following intervention by the farmers' union. But this approach was no more successful than that of the cooperatives: 95% of the plantations created within the framework of these regulations had disappeared by 1992 (Leybourne *et al.*, 1993).

The ban on crops below the 200 mm isohyet promulgated in 1995 marked a clean break with former policy to the advantage of the objectives of conserving and restoring vegetation. It is still effective today and is complied with fairly generally, to the great

annoyance of the villages established in the steppes. This "200 mm" limit that was laid down in the 1970s separating the agricultural areas from the *badiya* corresponds in the west of the country with the 1942 "desert" line, i.e. the boundary of the area occupied by non-migrant or semi-nomadic villages. In order to better protect these population groups a demarcation line was drawn between the cultivated area under the authority of the civilian authorities and the *badiya*, the Bedouin sphere of influence, which is controlled by the army. This delimitation dividing the country into two legally separate fields ought logically to have disappeared as soon as independence was gained and certainly after the Baath Party came to power. The elimination of the special provisions and privileges which the nomadic tribes had enjoyed under the Mandate was in fact one of the Baath Party's main objectives, as has already been mentioned. The fact that the administrative division under the Mandate corresponded with the presumed position of the 200 mm isohyet obscured its political origin by giving it climatic justification. The concept of rainfall boundary has no real basis, however, and does not reflect heterogeneity in terms of soil aridity, which is largely conditioned by soil variety, topography (lowlands, etc.) and drainage system.

Activist policy in Tunisia

In more official terms, the process has progressed furthest in Tunisia. The State has been endeavouring to settle the nomadic peoples in the south of the country since the early 1970s, in particular by creating numerous village centres that are equipped with all of the services necessary to modern life (electricity, schools, and dispensaries). This settlement process has been accompanied with the extension of cultivated areas (tree farming, in particular with aid from special funds). With the laws passed in 1971 and 1973, the Tunisian State embarked on a policy to "break the lethargy of these lands by involving them in the dynamics of economic channels" by parcelling out the collective lands into individual properties... It was a veritable agrarian revolution.

The right to use and enjoy the land was transformed into the right of ownership on co-planted land or on arable land where it could be proved that crops had been grown and people had been residing for more than five years. And as for the rangelands, the arable part could be divided amongst the members of the community and the non-arable area was delimited and brought under the forest tenure system. Of course, this division, which was carried out under the authority of the management council (six members elected amongst the lineages) left only the worst sectors to the forestry administration (5% to 20% of the rangelands), which was ill-prepared for managing such barren land.

Two allocation methods were used, the normal procedure and the so-called "accelerated" procedure. The normal procedure, for which provision is made in the 1971 law, is precise, costly and slow. So slow that since 1973 the procedure has been simply to carry out possession surveys in conjunction with the management councils and with the assistance of a "topographer" (trained on the spot), a secretary for taking the minutes and two workers (for holding the surveyor's chains). Once the procedure has been completed, the owner is issued with a provisional title (the "green title"), which entitles him to bank loans and to the benefits granted by the State. By 2006, 1,350,000 ha, i.e. 87% of the rangelands "for agricultural use", had been allocated to almost 100,000 assignees.

The divisions were in actual fact rarely egalitarian (there were a few cases in small communities), for, since the right of *ihyaa* was applied, the most enterprising and the best informed carved out the lion's share for themselves introducing major inequalities in the rural areas of southern Tunisia. It is a subject of great controversy, which we shall only mention briefly. This privatisation had a dual effect: the number of small farms soared and land was concentrated in the hands of the few. To the north of Gafsa, on the rangelands after the land division, 26% of the owners of less than 10 ha occupy 6% of the land, and 13% of the owners of over 50 ha occupy 45% of the land. Many peasant farmers in this region (46% in the Bled Amra plain) opted to abandon their farms and move to the city (34% of them selling all or part of their land). The future is less gloomy for those who remain. As soon as the allotment operations had been completed, the farmers, equipped with their land certificates, generally sold three-quarters of their flocks in order to finance wells, pumps, basic agricultural implements and fruit saplings. They then reorganised their farms around a small irrigated area (1 or 2 ha) with semi-irrigated tree crops (pistachio trees and olive trees), rain-fed crops, etc. and gradually built up their sheep-rearing activity again based on the thin-tailed Algerian breed, which is more demanding (i.e. more agricultural) than the fat-tailed Barbarine breed. The return on investment has been excellent for the well-off farmers (20% to 30% of the assignees) and the land development through irrigation, which was made possible by the land division, has been spectacular and is held up as an example. The problem is that all of these wells that were sunk in 15 years have caused a drawdown in the water table and many of them have been abandoned as a result (1900 of the total of 4500 wells listed in Gafsa and Tataouine in 2006 have been abandoned), so that the administration is forced to control this development more efficiently. Entire stretches of the former collective pastoral territories are thus cut up by a form of agriculture of uncertain sustainability, which fragments the land, closes transhumance passages and severs the rangelands from the most productive areas.

Reorganisation of mobility: the era of the truck

Motorisation is the most spectacular change and one which has attracted the least comment and has neither been promoted or explicitly integrated into any pastoral policy; beginning in 1955-1960 it spread throughout the steppes (to a lesser extent in mountainous regions) from the 1970s onwards. Throughout the Maghreb and the Mashraq, wherever the trails can take vehicles, trucks, pick-ups or animal-drawn carts have made far-reaching changes in farming methods: water and cattle feed are now taken out to the animals every day rather than the reverse, sales are organised more efficiently, decisions to make a journey are taken more rapidly and the farmers travel farther as the case may be. The flocks belonging to the big farmers are transported by truck and take over the area to the detriment of smaller flocks. But almost everyone now has either bought (or borrows or rents) some sort of motor vehicle making the pasturelands more accessible. In the Algerian steppes in particular, trucks cut back and forth and it would seem that the traditional summer transhumance to the croplands in the north (*achaba*) is gradually dwindling – although studies have still to be conducted on the subject – and is being replaced by a growing flow of steppe-bound traffic transporting feed and fodder that are produced in the north of the country.

It is a fact that in the steppelands family settlement is accelerating in Morocco and Syria and has been virtually completed in Algeria and Tunisia, but at the same time the flocks, which are now increasingly being led by professional shepherds, are still very mobile. Family lifestyle and flock husbandry are thus organised at two different levels and are gradually becoming disconnected. Only the poor continue to live in the steppes as they did in the past (with very few exceptions, as in Syria, where they no doubt mingle with the semi-nomads who have settled in the villages of the *badiya* and where certain rich families are “real” nomads with flocks of up to several thousand head of sheep). However, the big sheep farmers are gradually settling in the towns as a general rule (a bipolar system with “one foot in the steppes and the other in town”), for they have to maintain their social rank and defend their interests. In the Moroccan and Algerian steppelands, where bigamy is still common practice, the natural setup with this bipolar system is that the first (older) wife stays in the steppes and the second wife lives in town, where she mainly looks after the children who are at school.

New flock husbandry methods and anti-risk strategies

The decisive role of supplementary feed inputs

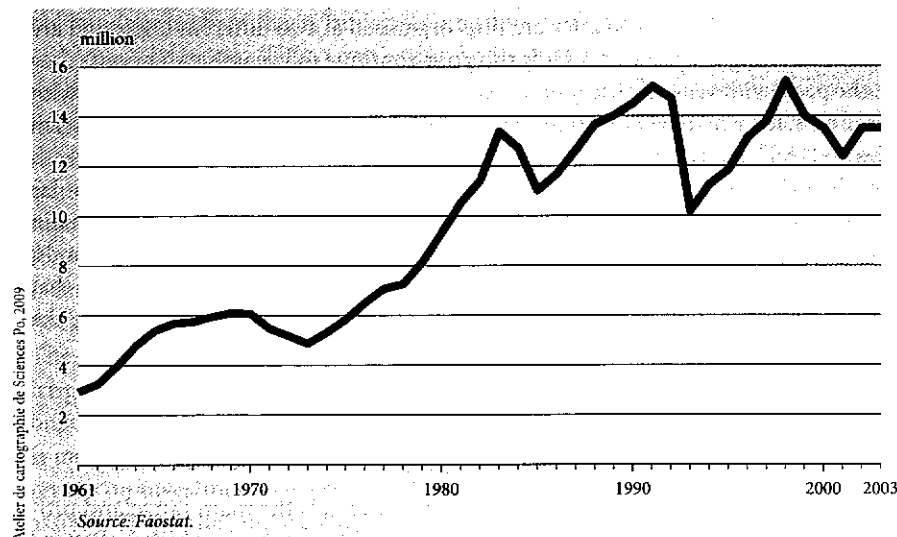
Small ruminant meat production (which, in this context, is the main rangeland product rather than beef) is now managed on a radically different basis, which is dictated by the powerful imperative of adapting to risk and managing risk based on an extensive combination of factors.

First and foremost, supplementary feedingstuffs – barley in particular, which comes from the cleared land that has been expanding steadily as the land has been privatised. The crops are sown every two, three or four years depending on rainfall, and the grain and straw are stocked and redistributed in poor years. This very random extension of crops, which compromises flock mobility, restricts pastoral areas and depletes biodiversity, cannot continue indefinitely and must obviously be limited strictly to the areas where it is justified. The whole problem lies in defining that limit or point of balance – a classical question of comparative economic advantages but one which is particularly difficult to resolve, for in many places crops and pastures form a veritable patchwork which changes in pattern depending on harvests.

In regions where rainfall varies widely and is less than 200-250 mm per year, the output of this rain-fed crop husbandry is in general very inadequate for the flocks, and the new trend is to rely systematically on supplementation with purchased products. This practice, which was started in the Maghreb by big farmers and encouraged by a succession of dry years (1981-1984 and then 1991 and 1998), has spread to all animal farmers. In Algeria, where the capacity of the steppe rangelands has decreased by half in fifteen years, the steppes, which should now be supporting no more than 2 million sheep, actually support five times as many and supplementation covers 60% to 80% of needs. In southern Tunisia, the rangelands now only cover 40% of animal needs in dry years and 80% in wet years.

The situation in the Syrian steppes is even more incredible; flocks have grown spectacularly as the result of a very active export market (cf. Chart 1).

Chart 1 - Sheep population trend in Syria, 1961-2003



This has only been possible thanks to a substantial increase in available feedingstuffs. Several factors have combined in this context. Irrigated crop acreage, where the residue is grazed by flocks, increased from almost 450,000 ha in 1969 to over 780,000 ha in 1991. The development of the agro-food industry has brought an increase in the available by-products that can be used as feed, such as sugarbeet pulp or cottonseed cake. Furthermore, barley production in the steppelands gradually expanded in the 1970s and 1980s, and flock husbandry changed completely from then on. The use of trucks now means that animal feedingstuffs can be transported to the areas where flocks are grazing in the steppes or in cultivated areas, or the flocks themselves can be transported. Thus, for the last thirty years, migratory animal husbandry has been based on dual mobility: flock mobility on the one hand and feed and water mobility on the other.

The rangelands are grazed in the spring, but the flocks stay in the steppes at all times of year for varying lengths of time. The steppes are a grazing and stabling area, which some call a "parking" area. At the beginning of the 1960s, it was estimated that the rangelands in the steppes covered 70% of flock feed needs. They now only supply 5% to 20% of annual feed, depending on the variations in forage production connected with rainfall and feeding strategies (Bahhady, 1981; Leybourne, 1997). Annual intake is composed of over 80% of distributed feedingstuffs (barley, cereal straw, agro-industrial by-products) and residue from irrigated crops. At the beginning of the 1990s, it was estimated that almost 1.5 million tonnes of feedingstuffs were transported to the steppelands each year (Treacher, 1993).

Cash flow and "controlled" flock reduction

In dry years (two or three out of five years), the quantities purchased are so large (approximately € 30 to € 40 per ewe per year in southern Tunisia) that the farmers' cash

flow is inadequate. The system survives – except in the case of the poorest farmers – through the sale of ewes, which amounts to a more or less "controlled" reduction of the flock (the animals are not thin even after two years of drought and they fetch a better price than they did in the past). Clearly the best safeguard is thus to have a flock that is large enough (200-300 head) in order to be sure to guard against the risks of prolonged drought. Not all farmers manage to do so – far from it – and during the last major drought in eastern Morocco in 1998-1999 several hundred small farmers had to sell their entire flocks and find work elsewhere.

This strategy of adaptation to risk, which we consider efficient, is strongly criticised. Most pastoral projects promote a more authentic return to pastoralism; their planners advocate measures to restore the rangelands, which is legitimate, but they regard the use of supplementary feed as the worst evil. They inveigh against farmers who swell their flocks by buying feed and overcrowd the rangelands with flocks out of all proportion with the grazing capacity. But by what right should the rangelands be the exclusive resource for feeding flocks? Why fear an increase in flocks if the deficit can be covered by means of external supplementary inputs? What is more, it is an approach which disregards several factors: a farmer cannot increase his flock beyond a certain point without impunity; there are certain thresholds (regarding shepherding, for example, or the size of trucks or water tanks and watering). And lastly, it underestimates the flexibility of the flock reduction/replenishment system described above, which is only viable when supplementary feedingstuffs are used.

Strategies for adapting to risk

Supplementing feed and reducing stock are not the only means of guarding against risks. Strategies have become diversified. In the short term, the problems posed by drought can be overcome for the time being through flexible management (adjustment of transhumance departure dates, combining of flocks) of the mobility that farmers/flock owners acquire through motorisation (pickup trucks for backup supplies of feed, etc.) and of shepherd mobility (encampments, tents, etc.). In the long term, the aim would be to guard the system against climate hazards well before drought sets in. Extending irrigation could be viewed as the "absolute weapon" for protecting oneself, but of course this depends on groundwater resources. In most cases, water input is much too limited to ensure the security of the pastoral system at affordable cost, for the prospects of costly irrigation for producing forage are very limited. The strategy that farmers tend to adopt is to extend the rain-fed crop acreage and to risk sowing cereals, which, in one in every four or five years, can produce whole-grain barley and straw; the advantage of these feedingstuffs is that they can be stocked and their use can thus be postponed (for at least two or three years). Non-agricultural incomes from emigration, business or other trades remain the only real long-term answer. They are the most efficient form of protection. The sums mobilised for the occasion are large, and the best-endowed can thus slow down the reduction of their ewe flocks. With external support the system can resist as long as the drought lasts, without losing its ability to bounce back as soon as the rain returns.

Economy of the system and dynamics of the marketing chains of pastoral areas

Little attention has been devoted to the economic aspect of the problem in the pastoral environment. This system of reducing/replenishing flocks, which farmers are obliged to use in order to adjust to climate hazards, is only viable if the terms of trade do not swing too far to the disadvantage of producers and if producers can afford to use it. The strategy thus can only work and be economically viable if the "live kg mutton/kg barley" ratio⁸ is well above 10 at all times, since it takes just under 10 kg of barley to produce 1 kg of meat in flock fattening terms. There are thus two conditions which must be met:

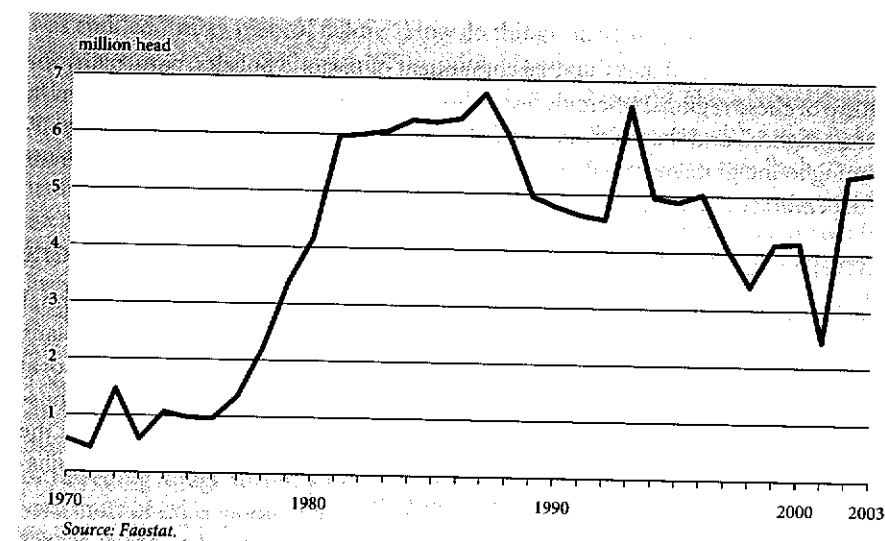
1) Feed prices must not rise too high in periods of drought when everyone is buying; the supply chain (cereals, by-products, etc.) must thus be reliable, diversified and monitored. This is more or less the case in Tunisia and Algeria, where the feedingstuffs market has become very diversified (production of hay and straw in the north of the country, which is then transported to the steppes by special dealers, olive cakes, etc.). What is more, the State has been intervening regularly since the 1980s by means of recovery plans facilitating transport through grants and placing subsidised feeds on the market (criticism focuses here on the procedures for granting subsidised products, but there does indeed seem to be a regulatory effect on prices on the open market) or by importing cereals where necessary. Feedingstuffs are also very diversified in Syria, where the State intervened in the 1970s and 1980s, supplying feed at subsidised prices which could cover up to 20% of needs.

2) Meat prices must not collapse as the result of the operations of livestock dealers, who are quick to take advantage of critical situations. The State does not control their activities in any way, nor indeed does it control livestock markets. However, since the sheep market chains are now more closely connected with distant markets in the plains and cities than they were in the past (livestock is transported by truck, mobile phones are now in general use), and since urban demand for red meat is high, price speculation is not as significant as it used to be.

The system has in fact been completely reorganised: more animals are put on the market in dry years (male and female lambs and reduction of ewe stock) than in wet years (only male lambs), since the stocks are to be replenished. In Syria, sheep-raising stagnated until 1974, after which stocks increased by almost 10% per year for over fifteen years. This increase was directly related to the increase in oil prices and the ensuing rise in incomes and increase in meat consumption. Syria did not produce oil but benefited from the oil revenue of the producer countries through emigrants' transfers and from the direct financial support of the Gulf countries as a contribution to the military expenditure incurred by the front-line countries. In addition to the national market, Syrian farmers benefited from the boom in the oil-producing countries. In Saudi Arabia, the main foreign market for Syrian products, the growth in live sheep imports was virtually exponential in the period from 1975 to 1980 (cf. Chart 2).

⁸ - or, more generally, the price of the feed unit provided as a trough feeding supplement.

Chart 2 - Saudi live sheep imports



Atelier de cartographie de Sciences Po, 2009

This market is relatively protected in that, according to regional standards, Australian or New Zealand products are not substitutes of comparable quality for the products obtained from local breeds.

The Syrian administration has made several attempts to limit exports in order to contain price increases in the country, particularly during religious festivals. Although Syria is the leading sheep exporter in the Middle East, the authorities have had to import sheep from Romania and Bulgaria on several occasions in order to contain prices and supply the national market. The period of rapid growth came to an end at the beginning of the 1990s, since which date the volume of livestock has oscillated between 10 and 15 million head of sheep depending on market conditions and variations in rainfall.

Although we must stress in conclusion that most farmers now adopt explicitly economic attitudes and that the rather outmoded image of the pastoralist who keeps large unproductive flocks "for reasons of prestige" is a thing of the past, many strategies are nevertheless difficult to decode and economic factors do not explain everything – far from it. Many of the decisions that are taken by farmers are governed by compromise, and other factors have to be taken into account (labour, cash flow and whether the farmer has a bank account, relations with neighbours, production for own consumption, etc.). Furthermore, the notables are all big farmers and their large flocks contribute to their prestige, enabling them to move rapidly up the social ladder by means of active patronage.

Pastoral policies

Land policies

Land policies are an absolutely essential component of pastoral policies, particularly for the future of these regions, where decisive choices are being made. As we have seen in both the Maghreb and the Mashraq, with the advent of independence new land policies aiming to integrate marginal zones more effectively were implemented at different paces depending on the legislation in effect in each country.

The main technical achievements of research and development

The various development plans have constantly laid emphasis on improving animal husbandry on the rangelands rather than on crop growing or tree farming. These plans have two components: improving feed by attaching special importance to pastoral resources (i.e. improving rangelands and organising farmers), and improving flock husbandry and animal production. A number of technical achievements brought by the research and development work carried out in various institutions have been mobilised in the context of numerous development projects.

In pastoral areas, particularly collective pastures, a choice has to be made between heavy techniques (directly affecting vegetation management: these include controlled fires, clearing by chemical or mechanical means or by biological means – i.e. by the animals themselves, through sowing, fertilisation, etc.) and light techniques (affecting how the rangelands are used by the animals: these include controlling stocking rate, choosing grazing periods, organising those periods, and managing fencing and water points).

Although the technique of short-term grazing bans has proved its worth in a number of pastoral projects, controlling stocking rate is a challenge on collective rangelands, where the rightful users do not accept the limitation of stock as a matter of principle. The methods used are thus confined to limiting grazing time rather than stock, which is an indirect way of limiting the stocking rate. Attempts to reduce the number of animals by authoritarian methods or to charge for the grass are generally unsuccessful.

Creating water points is another means of acting on how animals are distributed over rangelands and is an operation that can easily be implemented in most programmes. It can lead to errors, however, since the water available must be in proportion to the available vegetation. The discharge can often be reasonably limited with a simple manual or mechanical water lift, while allowing a specific group to take care of the social management of the water.

Where so-called heavy techniques are used, the rule should be to restore the most degraded pastureland first of all and then to enrich areas where vegetation can still grow again easily. But given the vast areas involved, the task must be approached with due modesty. One of the methods that should be adopted is to plant forage shrubs, since this is the main way to restore degraded rangelands.

Major rangeland development projects

A 1990, a publication on rangeland development projects in the Maghreb (Alaoui, 1990) was entitled “thirty years of failure”. How do things stand at present in the Maghreb and the Mashraq? In the 1960s and 1970s, animal husbandry cooperatives in Syria tried to establish a traditional form of pastoral organisation (*hema*).⁹ These cooperatives were to be assisted by other cooperatives which fattened lambs for sale with a view to keeping only the ewes and lambs necessary for renewing the flocks in the steppes. Each cooperative had the task of controlling a stretch of rangeland whose use was to be restricted to its members. The plan was a failure. No rangeland protection measures of any significance were implemented. The programme focused in actual practice exclusively on supplying livestock feed. The ban on cultivation under the 200 mm line that was promulgated in 1995 was a contributing factor to the obtaining of international funding in 1998 for conducting a “steppe rangeland development project” covering an area of 3 million ha. The project received funding from the Arab Fund for Economic and Social Development amounting to 60 million dollars as well as a 20 million dollar loan from the IFAD. The main objective of the project was to ensure rapid regeneration of ecosystems by planting or reseeding forage shrubs and by extending grazing bans, but the results obtained fall very short of expectations. One of the principal achievements was the planting of forage shrubs, particularly on the areas cultivated by the villages in the *badiya* near the boundary of the agricultural zone. Since the end of the 1960s, *Atriplex* has been the species selected for regenerating steppe vegetation, since it is widely considered to be the most suitable restoration species. *Atriplex* grazing by sheep poses several problems, however. The salinity of the forage considerably increases the animals’ water needs, and the most favourable grazing period is at the end of the summer when a large proportion of the flocks are no longer in the steppes. Only 3000 of the 35,000 hectares of *Atriplex* that were planted have survived.

In Algeria, it is recognised that measures need to be taken to involve agro-pastoralists more closely in several projects (Centre for Research in Applied Economics for Development – CREAD), which are endeavouring to innovate in this field. The administration in charge of development is hesitating to delegate its decision-making authority to the grassroots communities.

There has been a succession of projects in Morocco with limited success, although the excellent work carried out has considerably expanded the range of knowledge on the subject. All evaluation reports agree that they have had little impact, having failed to take account of social developments and to convey the imperative of incorporating technical rationalities into social reality. The techniques themselves are tainted with serious contradictions and are in actual fact very difficult to apply (sophisticated rotations, reseeding and excessive fertilisation unconnected with the economic efficiency of the system, limitation of stock, with no details as to how such a revolution is to be brought about, etc.). Many technicians continue to be overoptimistic as to the success of some of these projects, which should really be classed as misguided ideas, such as the *Atriplex* plantations in Syria, which are undeniably valuable as forage but whose spread rate is mediocre, the acacia projects, dry farming etc. Similarly, all the pasture reseeding, tillage

⁹ - Very similar to our description of *agdal*.

and fertilisation work would seem to be questionable on the whole and only to have favourable effects in experimental situations which can rarely be reproduced in the field. When one tries to evaluate the economic and financial profitability of these extensive efforts it is rarely proven.

The only really successful example is that of the (IFAD-financed) project in the east of the country, where a new type of "ethno-lineage" cooperatives have been set up, in which an attempt is made to reconcile the advantages of a modern structure and those of traditional organisation managing collective rights of rangeland use. The basic hypothesis is simple: the traditional ethnic group is an asset from the outset because it functions collectively. It will thus provide a favourable basic structure for the cooperative, which is another form of collective organisation. This hypothesis has not always been confirmed, however, for in many cases a compromise has been necessary in order to avoid completely distorting the cooperative institution. The measures to ban grazing on almost 300,000 ha are the most conspicuous and have been the most decisive in involving farmers in the project, even if the sustainability of the system is compromised by severe droughts or by the monopolisation of aids by the big farmers. There are two very concrete results, however, which mark progress:

- ▶ At least 10 of the 36 cooperatives operate properly, have capital at their disposal, and administer the rangelands in good years. Although the pastoral territory of each cooperative (mapped out on the basis of speculation and surveys in which the various parties were not always all consulted) is fictitious, because the users continue to abide by *orf* (custom), applying rights to reciprocity and practising "mixed" grazing in the winter when the flocks move south, the territory that has been "invented" in this manner by the project is gradually taking shape and is becoming a new "area of habit". Furthermore, mixed communities are regrouping around the forage areas. The territories are evolving.
- ▶ As a result of the grazing bans, for which a high price is paid in terms of compensation in the form of barley, the concept of paying for grass on collective lands has at last been accepted. This is a considerable success.

Work on spineless cactus in Tunisia has highlighted its numerous advantages: high drought resistance, building-up of standing reserves for pre-harvest gaps, good productivity, easy planting, facilitation of compliance with grazing bans, and so on. Whether spineless or prickly, this cactus now plays a major role in central Tunisia in both State-owned and privately-owned steppelands. Its recent development in the newly parcelled lands has been spectacular. It has admittedly taken some time (twenty years) to become established, but as soon as the private initiative that was stimulated by privatisation outpaced the State straitjacket, attitudes changed radically.¹⁰ After several failures in the field of large-scale projects (in the Oglet Mertebe region), the Prodesud project was launched in 2002. It is based on socio-territorial units (a euphemism which avoids the term of 'ethnic community' or 'tribal faction') that are "organised around pastoral areas, the purpose being to discuss ways and means of managing the agro-pastoral area with the population groups concerned within an openly participatory framework". After five

¹⁰ - The multifunctionality of this plant, which produces fruit that is exported, protects the soil from erosion, closes off territory as a protection from one's neighbours and feeds livestock when times are hard, had a lot to do with it.

years of effort, the project can definitely be qualified a success in several communities (Ouled Chehida, Guermessa, Jlidet, etc.), which have taken steps to manage their area. Here again, the principle of paying for the grass when the grazing bans come into effect seems to have been accepted. But in several sectors the boundaries between the above-mentioned socio-territorial units are a subject of such contention that the project managers avoid referring to them. Of course, the concept of socio-territorial unit presupposes a different type of territorial demarcation which inevitably generates conflict over boundaries and arbitration. So it will take time. Another project (Dieppo), which is financed by the World Bank, focuses on managing the natural resources of the El Ouara region (600,000 ha) but as yet only a few agricultural trails have been opened and the Sidi Toui nature reserve (6000 ha) has been created.

Plans for stock conservation in periods of drought

As regards risk management and the strategies that farmers adopt, the "stock conservation plans" which the State implements in periods of drought, must of course be mentioned. Since the beginning of the 1980s, the competent departments of the various ministries have been taking emergency measures in the form of "drought plans", particularly in the Maghreb: subsidised feed inputs, water transport, alfalfa nut imports, conclusion of contracts with cattle feed firms for the manufacturing of emergency feed. The plans are not as reactive as one might wish, of course, and the administration is slow to respond... and to act. State intervention varies in degree from one country to another, depending on State power and organisation. During the serious drought in France in the summer of 2003 the producer organisations protested and did not delay in approaching ministry departments, which by August 2003 had implemented a very comprehensive set of aids including a disaster fund, transport aids, financial aids, deferment of taxes, advances on premiums, etc. The producer organisations in the Maghreb are too close to the authorities and are not well represented; they are thus much less reactive, and "drought plans" take a long time to get off the ground. Yet these aids in periods of crisis help to curb runaway feed and animal prices. This realisation that drought is a structural factor in these ecosystems has thus marked an important turning point in mentalities, in discourse and in policies over the last few years.

Agro-environmental policies and collective land management

Pastoral policies can be regarded as agro-environmental policies, and rightly so, since they are applied in regions where the ecological issues at stake are particularly important. More specifically, some countries are also beginning to effectively integrate environmentally sound practices into their planning with the support of international institutions and non-governmental organisations. Lebanon drew up an environment code in 1997. And in 1998, Syria established its National Environmental Action Plan (NEAP), thus swelling the ranks of the countries in the MENA (Middle East and North Africa) region with environmental action plans or strategies (Egypt, Jordan, Lebanon, Syria and Tunisia). Algeria and Morocco followed suit in 1999.

In difficult, pastoral or forest regions, the most significant actions concern measures to protect the forest heritage, to restore and regenerate rangelands and to delimit nature reserves. Environment policy in Algeria has resulted in the creation of some twenty

nature reserves (including the El-Kala reserve, which receives funds from the World Environment Fund). A reforestation programme aiming to reforest 14% of the area of the country and scheduled to run for the next fifteen years, and a programme for converting production systems in arid zones, which will involve 700,000 ha in the medium term, have been selected as the priority objectives of the most recent agricultural development plan (September 2000). Tunisia is endeavouring to implement measures focusing on reforestation (aiming to reach a rate of 15%), soil conservation in order to protect farmland and towns from floods, action to combat desertification, and the installation of water and sewage treatment plants.

There are currently four national parks in Morocco, two of which (Toubkal and Tazekha) were created during the Protectorate. Thirty years went by before the administration again realised the need to protect certain ecosystems considered to be of particular interest from irreversible degradation and vested itself with the means of establishing three other parks in the Sous-Massa, Al Hoceima and Ifrane regions. An extensive programme for evaluating ecosystems and natural assets throughout the country was launched recently complete with a "masterplan of protected areas". Responsibilities in the field of the environment and nature conservation are split up amongst several ministries in Morocco, including the Ministry of the Environment. The Department of Water Resources and Forestry has until now been the administration which has played a decisive role in implementing this national park policy in the context of protecting forests and wild flora and fauna.

It must be stated, however, that until the past few years most of the parks that are situated in forest regions and are under strong pressure from riparian populations have not been treated any differently to the areas subject to forestry legislation. The boundaries have not actually been marked out, and the few forest rangers in charge of monitoring them merely apply the rules a little more stringently to the best of their ability given the limited means at their disposal. Excessive felling, countless offences, difficulty in ascertaining the real names of offenders, frequent inefficiency of the courts adjudicating the cases – such are the problems they encounter in their daily work.

Establishing a nature reserve on collective or State-owned land in these countries with a view to preserving the ecosystem and protecting wildlife in a region where living standards are very low and the local people expect the government to devote attention to them would be socially unacceptable and would meet with such hostility that the remedy would eventually prove worse than the disease. It is absolutely essential that the management of these parks include, support and consolidate local development. The Wadi Rum National Park in Jordan, where the Bedouin people have arranged their lives to take advantage of tourism on the site while preserving their traditional activities,¹¹ is an interesting example.

What is to become of collective lands?

In the collective rangelands in the difficult regions of the Maghreb and Mashraq, the communities with collective land rights have long lost any ability to manage their own

¹¹ - Including trade with Saudi Arabia, for the border is very porous for these Bedouins, who often have double passports.

affairs independently. This decline in their ability to take the initiative, which has been virtually continuing for over a century, has been brought about by various factors: the appropriation of land by the colonial powers, the spread of the melk (individual cultivation) system for the benefit of the assignees and in particular of private purchasers, long-term leases, etc. In view of the gradual diminishment of the communities' authority to manage their resources, the local authorities and regional communities have more or less superseded the former customary institutions. This loss of authority seems to be irreversible, except in the case of a few pastoral collectives in southern Tunisia or in the mountains in Morocco. The tribal societies, or what remains of them, have embarked upon a process of individualisation from which there is no return, and any illusion of rebuilding "traditional" collective entities that are capable of stimulating modern change must be clearly dispelled.

What should be retained from these traditional modes of management for future development? Should they be drawn on for new projects? Is it not utopian to try to draw lessons from them that can be applied to other contexts? After the succession of failures registered in the rangeland development programmes of the past 30 years, many project managers now recognise that it is more advisable to promote flexible and participatory management of natural resources on the lines of the traditional forms of organisation. But from the examples that have been cited it will have been realised that behind these concepts of "flexibility" and "participation" are modes of management and organisation which can bring success or disaster, depending on how they are applied. One must thus beware of euphoria when drawing on traditional models and select only the best of their assets.

Although in Tunisia the problem of collective lands is no longer on the agenda, it is still a controversial issue in other countries. In Morocco, the communication difficulties between management and research departments are illustrated by two major brainstorming events on these questions, which were organised and sponsored by two ministries: the national colloquium on collective lands organised in December 1995 by the Ministry of the Interior (Directorate for Rural Affairs) and the large-scale workshop on land policy held in June 2000 by the Ministry of Agriculture. Collective land realities were only examined at these events with a view to pinpointing the obstacles to economic and social development constituted by the status of these lands and their *modus operandi*. The question of the economy of ethnic communities, which is related to that of the significance of (Ministry of the Interior) supervision, was not raised.

In these times of liberalism, would these collectives be a form of small farmer autonomy that can be regarded as a relay of the State which is disinvesting? (Bouderbala, 1992). It is clearly quite inaccurate to state that rights to collective land are the same for all. No stock reductions are applied, flocks are combined, and there is speculative purchasing of animals that have been fattened rapidly; these practices are carried on to the sole of advantage of big farmers without any real control. The system is thus very inequalitarian, since each individual grazes as many animals as he can and uses every possible means (transported water tanks, encampments at higher altitudes, annexing of rangelands) to try to obtain a maximum of resources. There is no cooperative spirit in the modern sense of the term, since each rightful user claims a right which he shares with others

whether he likes it or not. This being so, "the principle of management is not the fact of developing resources collectively but of controlling competition for the individual use of those resources" (Chiche, 1992).

Many preconceived ideas about rangeland exploitation and the management of collective lands die hard. For a start, ideas that have to do with overgrazing are not always particularly objective. Many projects display a stringently "pastoral" philosophy (measures to restore and improve pastureland, plantations, etc.) and regard feed supplementation as a management error. Soil and vegetation degradation, which are generally the principal factors justifying the action programmes, are certainly the first element to be specified. In the case of Syria, for example, the report on vegetation status provides no information whatever on the environmental transformation processes that are underway or have already taken place, environmental resilience or the validity of a hypothesis of rapid degradation justifying urgent and heavy-handed intervention (prohibition of cultivation under the 200 mm level). This objective of restoring rangelands seems to go hand in hand with a mythical perception of outdated pastoralism. The steppes are pastoral lands, but they are exploited by a form of sheep farming that can no longer be described as pastoral.

If any progress is to be made in this debate on the future of collective lands, care must obviously be taken to place the issue in context. Those who criticise collective status generally put forward two types of argument:

- *Criticism by the advocates of intensive production.* They consider that the collective status of land is an obstacle to investment. This position essentially concerns cultivated and arable collective lands with all the ambiguity attaching to the latter term, which determines whether the land is for agricultural or pastoral use (experience in Tunisia has shown that with social pressure all rangelands become arable land!). But it is a fact that collective status precludes the economic guarantee required for access to credit. It is an obstacle to security of access since it only grants the right of usufruct and thus hampers or discourages land development and the intensification of land use;
- *Critics who are anxious to protect the natural environment and/or resources.* These critics consider that with collective status there is an inherent risk of destruction of resources and degradation of the environment. Since each rightful user – and there are countless numbers – is entitled to use the land, there is an abnormally large number of farmers, which leads to the overtapping of resources. Furthermore, the communal use of land involves competition amongst users which induces them to overgraze it.

In both cases the claims are excessive, and there are many examples to disprove them. We consider it more reasonable in the light of the facts to hold that simplistic arguments are not enough to justify the sharing of collective land. The exploitation of resources is not necessarily conditioned by their status: the examples of good and bad management of *melk* and collective lands are many and varied. The experience gained in Tunisia is a wonderful source of information, and it is surprising that so little research work has focused on it. It teaches us that the parcelling of land is not a panacea, that it is far from egalitarian, that it can lead to ecological disaster and the overtapping of resources (water in particular), and that it triggers the rapid eviction of those farming unviable units

and the purchase of their land by the biggest farmers. Measures to divide up collective land and to allocate individual parcels thus can only be justified when there are prospects of effective and sustainable development. Sharing involves a certain degree of equity, if not equality, and requires follow-up: support and control of the investments effected (the wells that have been sunk, the methods adopted for developing the land). It is difficult for the authorities to escape this powerful trend, which calls in question the bases of the collective pastoral system in order to promote an entrepreneurial form of individual farming wherever possible.

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RETHINKING RURAL DEVELOPMENT
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