

DROUGHT AND ‘NATURAL’ STRESS
IN THE SOUTHERN DRA VALLEY:
VARYING PERCEPTIONS AMONG
NOMADS AND FARMERS



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The Dra Valley consists of six oases stretching from the southern fringes of the High Atlas mountains to the Sahara. The area has been inhabited since early times by several groups and communities – Arabs and Berbers; nomads, farmers and traders; religious and lay groups; ‘freemen’, clients and slaves – differentiated according to various parameters, but integrated in complex socio-economic formations. This part of south-eastern Morocco, known in the pre-colonial past as a rich region in the heart of the trans-Saharan route linking Timbuktu with northern Africa, was affected by radical change during colonial times, but most of all in the first decades of independence. Nonetheless, till the mid-1970s, the almost exclusively rural population of the Dra Valley still seemed able to adapt locally to global economic transformations: traditional agriculture and herding still ensure the subsistence of both nomad and sedentary communities. The progressive deterioration of ecological conditions during the last two decades reached a drastic level in the mid-1990s, with grave consequences for economic production. For the various actors involved in the region in different ways – state agencies, development organisations, research institutions – the diagnosis is clear: drought is the major problem in Wadi Dra. The local population often agreed with this assumption, while applying complex strategies to overcome the severe effects of drought in their daily life.

My research in southeastern Morocco (cf. Casciarri 2003) focused on the management of water as a rare resource in the Wadi Dra catchment.¹ I concentrated on the two southern oases of Ktaoua and Mhamid, where the

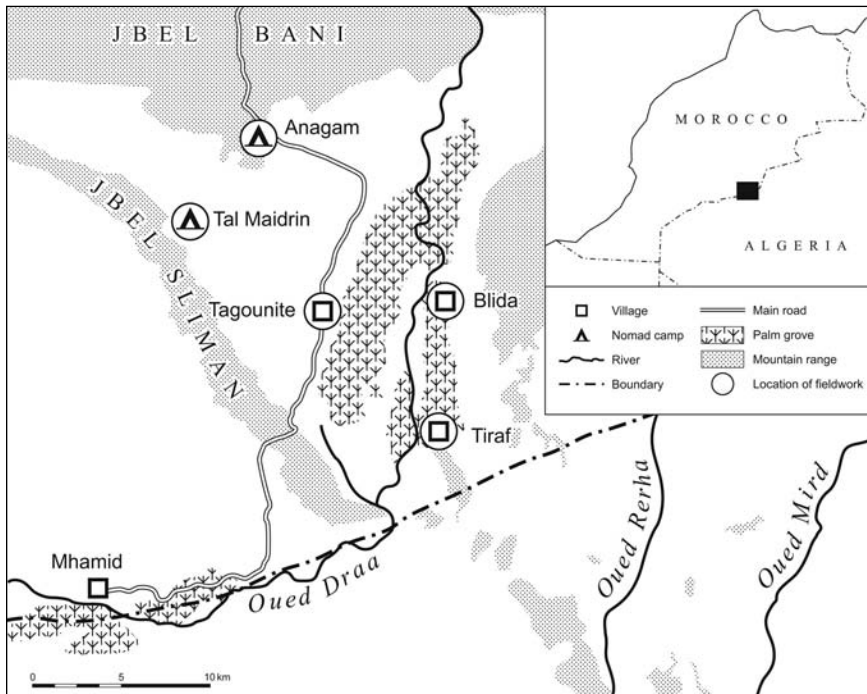
situation is more critical than in the northern part of the valley, and did fieldwork among two mutually integrated communities: the nomadic Ait Unzâr and the oasis inhabitants of Tiraf village. Both groups share material and social spaces of daily life, despite their distinct identities. I was interested in the interaction between pastoralists and sedentists in the exploitation of natural resources, the strategies of domestic units to cope with crises and the role of local institutions in managing conflict regarding water and land.

In this chapter I shall formulate some hypotheses about the ways in which a rural society may face a grave crisis that threatens its material and social reproduction. The process will be analysed at two levels: the perception of environmental crisis and the strategies adopted to cope with it. After sketching the socio-economic configuration of the pastoral and peasant communities in the Ktaoua region and giving an overview of official data on the crisis, I turn to current discourses about it, in order to examine, firstly, if such perception is unique for the local actors and the external forces (state, development agencies, researchers), and secondly, if it is shared by all the components of the rural community itself. After setting forth the differing perceptions of the crisis among various actors, I describe some strategies used to cope with environmental stress. In the final section I try to reflect on the bases upon which a generally good level of 'resistance' to crisis is built up, thanks to the integrated organisation of nomads and sedentists in Tiraf.

The Ait Unzâr Nomads and Tiraf Village: History and the Present

Social Structures in Southeastern Morocco

In an area with an annual precipitation of less than 100 mm, the Dra Valley consists of a chain of six oases stretching from the mountains south of Ouarzazate to the northern fringes of the Sahara (see map 5.1). The rhythm of the agricultural and pastoral cycles here is determined mainly by the snow melts from the High Atlas and rainfall that cause the river Dra to flood. While geophysical configuration and climatic features impose basic constraints on natural resource exploitation, the relation of humans with these resources can be grasped only within the complex history of a multitude of social components. The autochthonous population, known as *Draoua*,² consists of sedentary, primarily subsistent farmers inhabiting the fortified villages (*qsâr*) and cultivating mainly date palms. A second component is represented by communities of nomad origin, who migrated with the spread of Islam in North Africa. Among the latter, even those who abandoned a nomadic life are still considered as having a higher status than the Draoua farmers: the pastoral connotations offer the background to a certain specificity of their present economic and political structures. As a third



Map 5.1. The southern Dra Valley and the area of investigation

component there are communities of high social status that is related to notions of descent and the concomitant attribution of religious prerogatives; these communities are defined as *Chorfa* (the Prophet Mohammad's descendants) or *Mrabtîn* (saintly lineages of varied origin). Finally, at the bottom of this social hierarchy, are the communities defined as *'abid*, considered to be the descendant of slaves from Sub-Saharan Africa. Despite the abolition of slavery and of relations of subordination between groups, such hierarchy – that induced some scholars to argue for the existence of a 'caste-based' society (Jacques-Meunié 1958) – is still visible in the differential access to resources and in some other boundaries strongly rooted in local daily life.

Because of its location on the crossroads between Sub-Saharan Africa and Mediterranean Morocco, the Dra Valley has for long been a strategic region. Lying on the caravan route from Timbuktu, the area was crucial for military encounters, commercial exchange and melting populations. Ever since the sixteenth century, various Berber-speaking nomadic groups gathered to form the huge Ait 'Atta confederation, succeeded in fighting the Mâqil Arabs, who had occupied the Dra since the twelfth century, and established their hegemony (Hart 1981, 1984). During the pre-colonial period the area was considered as *bilâd as-siba*, 'the country of insubordination', as opposed to the *bilâd l-Makhzan*, the

country under the control of the central state (Gellner 1969). The Ait 'Atta of the Dra, together with some Berber groups of the Atlas, were fiercest in their resistance to French colonisation (Dunn 1977): while in 1912 the Protectorate was established in most of the country, the 'pacification' of the Dra Valley was achieved only in 1932–3 (Spillmann 1936), and military encounters between French troops and nomads are documented until as late as 1936 (Léfébure 1986). The remoteness of the region continued to influence its configuration in post-colonial times, in spite of administrative reorganisation and efforts to modernise the infrastructure. The Dra Valley is one of the most rural areas in Morocco, with traditional agriculture and herding dominating, development indicators lower than for the rest of the country, and social relations strongly rooted in tradition. Despite some major economic changes in the last two decades and the creation in 1997 of a Zagora Province encompassing all Dra inhabitants previously included in Ouarzazate Province, the sociological framework of the Valley still appears strongly conditioned by its historical background.

Sharing the Village of Tiraf: The Ait Unzâr and the Shaqaf

Despite their relative specificity, the various communities mentioned above have always practised some form of socio-economic integration. While the mountain slopes and grazing lands remain the domain of nomads, in all *qsâr* of the oases all communities participate in the common management of daily life. In spite of a roughly homogeneous regional frame, social articulation in every village depends strictly on its specific local history. The village of Tiraf lies on the west bank of Wadi Dra in the extreme southeastern part of the Ktaoua oasis. It is almost 10 km east of Tagounite, the administrative urban centre of the region, and 20 km west of the contested Algerian border. The presence of the nomadic Ait Unzâr as one of the two social components of Tiraf is intimately linked to the opening of the village its towards the eastern and southern Saharan grazing lands and its marginal location.

According to oral tradition, Abdallah Shaqaf, the eponymous ancestor of the Arabic speaking Draoua, founded Tiraf at the end of the eighteenth century. After a first destruction of their village by attacking nomadic groups, people of the *qsâr* approached the powerful Berber tribes for aid. Different sections of the Ait 'Atta confederation now took charge of protecting the Shaqaf of Tiraf, until the arrival in the mid-nineteenth century (Niclausse 1954) of one of their sections, the Ait Unzâr, who remained the exclusive protector of the village until French colonisation.³ Today such exclusive relations are still manifest in various forms and the Ait Unzâr consider Tiraf as their 'capital'. Pacts of protection, generally defined as *ra'ya*, were widespread in the valley, mostly in the southern oases of Ktaoua and Mhamid. Under constant threat from aggressive nomadic pastoral communities passing along the Transaharan route or struggling for local hegemony, the sedentary populations often had no option but to take recourse to

such pacts, which for nomads entailed the duty of military protection in exchange for the transfer of a portion (normally one quarter, called *rba*) of the houses, fields and water rights of the village. Such an alliance implied a subordinate status for the protected clients; most of them also became share-croppers (*khammâs*), receiving a fifth of the yield in exchange for their agricultural labour for the nomad landowners who were themselves mostly engaged in pastoral activities.

The Ait Unzâr, whose name means 'the ones of the rain', are part of one *khôms* (five primary divisions of the Ait 'Atta) composed of Ait Isfoul and Ait Alouane; the latter are divided in turn into four tribes: Ait Bou Msaoud, Aitî, Ait Ghanîma et Ait Unzâr. They are one of the most 'Saharan' groups within the Ait 'Atta confederation. Mainly camel herders, they practise horizontal nomadism, owing to the unpredictability of rain in this extremely arid area. Unlike most of their fellow tribesmen, among whom goat and sheep herding and a more regular vertical transhumance predominate, the Ait Unzâr do not have pasture rights in the mountains. Their traditional territory, stretching from the Hammâda in the south to the Algerian grazing lands in the east, where they live in contact with other non-Berber Saharan groups (such as the nomadic 'Arîb pastoralists), has experienced remarkable transformation. During colonisation, the French tried to fix tribal borders, thus replacing a more fluid definition of frontiers between groups sharing access to resources. During the last decades the proximity of the contested border with Algeria (1963) and the war in Western Sahara (1975) imposed further territorial restrictions (Casciarri, forthcoming). One of the last communities living mainly from nomadic herding, the Ait Unzâr now move in the area between Foug Zguid, Mhamid and Wadi Mird, but the village of Tiraf is for them all a common 'head-quarters': some families are settled there in a fairly definitive manner, most of them own cultivated fields and irrigation rights, and every Ait Unzâr is politically represented, according to his lineage section, at the level of local tribal institutions.

The present population composition of Tiraf reflects the history of the village. The demographically and politically dominant Draoua group, the Shaqaf, is divided into two lineages, Lmedani and Lhaddi, considered to be the descendants of the two sons of the founder, Abdallah. Four minor Draoua groups (Sammoud, Bigyouar, Sbiti, Fagrouti), coming from different places of the same region almost a century ago (first as farmers without land), joined the original sedentary group. All Draoua families today are Arabic speaking. The nomadic component is represented by a minority of the ancient protectors, the Ait Unzâr who, though maintaining a mixed economy, chose to partially sedentarise,⁴ and by a Chorfa family of a saintly Idrisi lineage associated with the Ait Unzâr and established since early times in Tiraf. Both Ait Unzâr and Chorfa are Berber speaking. Finally, unlike in most villages of this region, in Tiraf there are no families of *'abid*, the descendants of slaves.⁵

The management of resources and social relations is strictly linked to the history and population movements mentioned above. One can still observe the effects of the ancient attribution of one-fourth of the Draoua's fields to the nomad

protectors upon the tenancy framework, thanks also to the local trend preventing land alienation through sale to foreigners⁶ and minimising the fragmentation of holdings through endogamous marriage and dispossession of female heirs. Some forms of work not mediated by wage but with payment in kind and structured by the nomad-sedentary relation, still persist – for example, the Draoua sharecroppers for the Ait Unzâr (the *khammâs*-landownership is transmitted from one generation to the next), the Ait Unzâr *ra'yân*, guardians of the palms groves during the date harvests, or again the *'elim* guardian of the canal (*saqyia*). The most significant illustration of close cooperation between the Draoua and Ait Unzâr lies perhaps in the division of the rarest resource: water. For the inhabitants of Tiraf the traditional irrigation system remains almost the sole source of cultivation. While in other parts of the valley the spread of motor-pumps lessened the importance of ancient modes of irrigation (Ait Hamza 2002), Tiraf has not been affected by such 'technological revolution', both because of the higher salinity of groundwater and the scarcity of cash necessary for the purchase and maintenance of motor-pumps.⁷ Cultivation takes place exclusively with water from the *saqyia* – the main canal with branches going to the individual plots – which gets filled by natural floods, but mainly through the discharge from the Mansour Ad-Dhabi dam in Ouarzazate. Water distribution in the Tiraf *saqyia* is based upon a detailed plan, whose basic criteria continue to be the ethnic parameters between groups (Ait Unzâr and Draoua) and genealogical considerations within each group (i.e., further internal division following lineage articulation).

The institutional framework functioning in Tiraf also confirms the centrality of nomad-sedentary interaction in the management of socio-economic life. Apart from the centralised system of local government, with the appointment of local representatives to each administrative unit in a pyramidal national system, in some villages of the valley traditional institutions still retain certain powers. The *qabila*, a term that I shall gloss as 'tribe', is composed of representatives of different genealogical units, chosen by their respective community to represent them in an assembly which meets periodically and has real decision-making authority. The historical symbiosis between nomads and sedentists is expressed by the 'bipolar' form of tribal assemblies in Tiraf (see Figure 5.1). The Draoua *qabila* comprises three thirds (*thuluth*): two thirds are issued from the sons of the ancestor Abdallah Shaqaf and one third corresponds to other Draoua of various origin. The Ait Unzâr *taqbilt* (Berbère version of the Arabic word *qabila*) is formed from four fourths (*rbû*), corresponding to the four primary lineages of the tribe, called *ikhs*, 'the bone'. The two tribes act jointly in organising the basic concerns of collective life: sharing water rights, managing drinking water, deciding on collective labour, controlling the date harvest, communicating with state agencies, mediating conflicts – in other words, all decisions, including those impinging on some aspects of moral and cultural behaviour, that concern both of the local communities. The persisting unity of the pastoral and agricultural

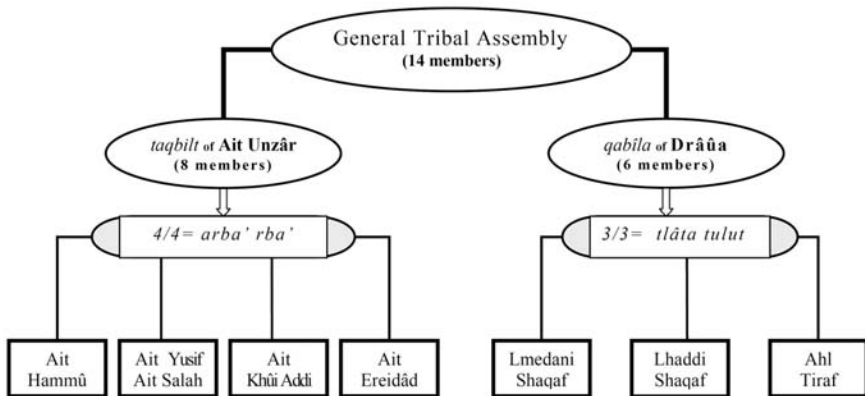


Figure 5.1. The bipolar tribal system in Tiraḥ

components and the strength of the tribal structure has its symbolic representation in the existence of a unique overall authority, Shaykh Hammân, who is at the same time *shaykh* of all Ait Unzâr nomads and of the village of Tiraḥ.⁸

The Ecological and Economic Crisis

The Recent Crisis in 'Useless Morocco': A Global Insight

In colonial times the Dra Valley was the object of a dual interest: political, because of the endemic insubordination of its populations; ethnographic, thanks to its 'archaic' institutions that had 'disappeared' elsewhere (De la Chapelle 1929; Jacques-Meunié 1947). In the last two decades the region has once again caught the attention of the scientific and state agencies. A rich bibliography documents the multitude of case studies on numerous topics carried out in the six oases⁹. Differing slightly in approach and aim, one assumption is common to them all: a severe crisis has struck the region and two basic factors, drought and desertification, are the main causes of the problem.

Indeed, the effects of the crisis are visible in changing environmental conditions: the decreasing precipitation, the increasing salinity of groundwater and the risk of its depletion, the encroachment of desert upon arable land, the spreading of the lethal palm parasite *bayoud*. At the production level, too, there are clear indicators of decline both in agriculture and herding. The social manifestations of crisis accompany such natural phenomena: the rural exodus, the sedentarisation of nomads, the migration fluxes, the uncertainty of subsistence strategies, the weakening of solidarity and family ties. The Mansour Ed-Dabhi

dam, finished in 1972, which was thought of as a starting point for the development of the valley, did not bring the expected advantages. After a first euphoric phase of exaltation for the policy of *grande hydraulique*, mainly praising the rationalisation of traditional irrigation systems (Anafid 1990), the distribution of dammed irrigation water was threatened by a growing deficit up to the dramatic levels of the mid 1990s.¹⁰ As a consequence, agricultural production is declining and unable to maintain its role as basic subsistence source for local populations.

A few changes, such as improvements of roads and transportation, electrification and tourism, do not really seem sufficient for balancing these negative trends. Even social indicators, such as access to education or medical treatment, after improvement in the initial post-colonial phase, declined recently to levels approaching those of Sub-Saharan Africa (Ramonet 2000). Crisis is now global, but listening to the official discourse one could think that by merely eliminating the water deficit, whose natural causes are stressed, the problems besetting people's lives in Wadi Dra would be solved.

Such a presumption is largely responsible for the recent multiplication of development projects in the Dra region. Through its agencies, the Moroccan state and its institutions tried to mitigate local problems and give a direction to processes of change. Its basic interventions focused mainly on the resource water by digging wells on nomad grazing lands, building drinking-water reservoirs in the villages, modernising the *saqyia* network, and stabilising dunes. Simultaneously, efforts were made to modernise agriculture by introducing tractors and chemical fertilisers, and herding through vaccination campaigns, selection and cross-breeding, while also supporting existing networks for the sale of the produce. At the institutional level, the most innovative step has probably been the devolution of responsibility in local water management to the associative groups, by formalising the existence of an AUEA (*Association d'Usagers d'Eaux Agricoles*) in every village between the 1980s and the 1990s (Anafid 1991). In addition, various international cooperation projects, NGOs, aid and development organisations – mainly European and North American – are also active. Most of these started their work after the state did, in the 1980s and increasingly during the 1990s. Their analysis of the crisis in Wadi Dra, according centrality to the water deficit, does not basically diverge from that of the state, but their interventions often enlarge the ecological question to a wider social dimension and stimulate the application of methods praising the so-called 'participatory approach'. Micro-credit, female handcraft production, natural reserve creation, eco-tourism, alphabetisation, popularisation of concepts in resource management and preservation form part of their activities.

A general review of common development intervention and response to crisis shows two basic features, without major distinction between state and non-state actors. First, there is a frequent statement of the great difficulty of efficient intervention that sometimes leads to the failure of a project,¹¹ a difficulty often ascribed to 'conservatism', resilience and the traditional attachment of people to

past structures and behaviour. Second, there is a remarkable absence of balance in the geographical distribution of interventions. Even though this may seem paradoxical, the part of the valley most affected by crisis (the oases of Ktaoua and Mhamid) is the most neglected by these projects. As if the old colonial discourse that saw the Jebel Bani mountains as the real borderline with the Sahara – i.e., the geographical limit of possible modernisation and civilisation (Azam 1946) – were still continuing today, these Saharan extremities of the Dra Valley risk being further marginalised because less attention is paid to them as 'developable' areas. Thus, both state and NGOs implicitly yielded to the paradoxical and cynical logic according to which development has to be promoted where it is more profitable, rather than more needed.

The Signs of Crisis at the Local Level

Tiraf and the Ait Unzâr benefited from the general amelioration of living standards in the period after independence. Fieldwork data confirmed in this case the official documentation, and the comparison between older and younger generations is enlightening. As for most countries of the Third World, after the decolonisation phase, various domains experienced such growing trends. Vaccination campaigns and the spread of basic medical treatment determined the decline in mortality, especially of children and pregnant women.¹² Even if the age of first marriage continues to be lower than in urban areas, it is higher than before, and the frequency of childbirth is slightly less than it was earlier. Between the 1960s and the 1970s, Tiraf, like most *douâr*, was equipped with a primary school and basic education has been spreading, even if noticeable differences remain according to group and gender – nomad children and girls being more unschooled.¹³ State interventions and technological innovations have facilitated the hardest task of previous generations: the daily quest for water with lower energy requirements, more efficient ways of storing water, the installation of collective taps, better quality and greater availability of domestic water. The development of roads and motorised transport favours the circulation of people and commodities. Some wider macro-economic factors and socio-cultural processes determine higher mobility, and though labour migration is temporary and limited to a few family members, in post-independence decades it is able to supplement traditional productive activities with some integrative cash incomes. In the wider context, at the level of social hierarchical relations, the subordinate status historically attributed to Draoua and *'abid* groups (compared to nomad and religious elements) has progressively lost its economic and political connotations, thanks to processes of social ascent and emancipation, though undoubtedly persisting in identity reference and mainly in marriage practice.¹⁴

Nonetheless, Tiraf and the local nomad communities still occupy a marginal position in this Saharan southern part of the Dra Valley, which is a region with alarming socio-economic indicators when compared to the general national

trends. Though between independence and the late 1970s, on the whole the local population enjoyed improved living standards, at the end of the 1970s, and increasingly during the 1980s, the periods of drought began to be longer and more intense. However, in the first twenty years, there was always a phase of recovery, so both local authorities and nomad and sedentary populations continued to see drought as a cyclic phenomenon. Finally, in the mid-1990s drought became acutely endemic in the region, and its effects started to look irreversible, with sedentarisation of nomads, massive and unplanned urbanisation, depopulation of rural spaces, and threats to means of subsistence. Data set out in table 5.1 concerning the two main productive activities, agriculture and herding, illustrate this trend, thereby confirming the impression both of the outside observer and local actors, that agriculture is much more drastically affected by the crisis than herding.

Every year the entire amount of discharge from the Mansour Ad-Dhabi dam, the main source of irrigation water since the 1970s, is planned for the period 1 September to 31 August. This is known locally as an ‘irrigation campaign’ (*campagne d’irrigation*). Over the years, with the worrying rainfall deficit, the discharge from the dam has diminished continuously and by 2002–3 the renewal of both groundwater and rangeland vegetation was endangered. In Tiraf, the salinity of groundwater reached dramatic levels: well water could be used only for ritual ablutions in the mosque or for some other washing, and even animals refused to drink it.

Table 5.1. The effects of drought on herding and agriculture respectively in the study area (1991–2003)

Production of Ktaoua Region and Tiraf Village		1991/1992	1994/1995	1997/1998	2000/2001	2001/2002	2002/2003
<i>Herding</i> (no. of heads)	Cattle	702	252	470	508	289	154
	Sheep	14,078	12,956	15,403	11,600	11,142	10,172
	Goats	28,157	23,096	23,882	15,698	14,779	14,176
	Camels	2,392	1,898	2,481	2,115	1,973	2,005
<i>Agriculture</i> (in tons)	Dates	6,700 (240)*	8,000 (272)*	6,200 (210)*	1,600 (55)*	1,200 (40)*	630 (10)*
	Cereals	13,800 (380)*	18,200 (470)*	15,000 (380)*	6,000 (220)*	2,600 (140)*	600 (25)*

Official data of the ORMVAO, Tagounite CMV, sources: Yusif Slimani (herding) and Mohamed Boudiaf (agriculture)

In the same period other factors contributed to further worsen the crisis of production. Emigration became increasingly difficult: at the transnational, international level, harsh new European legislation made it almost impossible; at the national level, employment opportunities in Moroccan towns got worse. The changes in consumption patterns (favoured by the arrival of television and advertising) brought an increasing dependency on commodities, a phenomenon that always becomes much more critical in times of meagre surplus of family production which must be sold to purchase items not locally produced. In a kind of vicious cycle, the development indicators again started to sink (cf. Casciarri 2002a for similar observations among Ahamda nomads of Sudan). At the moment of our first arrival in the field in October 2000, the crisis in the Dra Valley was in this severe and critical phase.

Local Discourses about Drought and Crisis

The All-Explaining Jfâf

One general observation emerges from oral testimonies collected during the fieldwork: the presence of the drought *leitmotiv* in almost every account, regardless of topics, periods and informants. The most commonly used term for drought, in the primary sense of 'lack of water', is undoubtedly *jfâf*, as in the standard and classical Arabic. Though other terms exist in *Tachelhit*, the Berber language spoken by the Ait Unzâr, they too use this Arabic term even when speaking in Berber.¹⁵ In this critical period, the constant point of reference was the lack of water and, running parallel to this, local discourse was uniform in its evocation of periods of well-being as those strictly defined by the abundance of water.

There is undoubtedly basic agreement among all social actors about the centrality accorded to drought as the core of the crisis. But it is interesting to underline similarities and differences between various speakers about the same concern; in fact the perception of the all-explaining *jfâf* became more complex and articulated the deeper we examined the testimonies. The main variation was between nomads and farmers: the lack of water for the former does not have quite the same implications it does for the latter. All nomads complained mainly about the lack of grazing grasses (*rbî'a* in Arabic, *tuga* in *Tachelhit*). This standard Arabic term denotes the spring season, but in Morocco we find a metonymic identification with the most precious gift that spring offers to nomads: the growth after rainfall of a rich variety of plants that are nutritious for herds. The temporal connotation of *rbî'a* as a mere season is not a static one: one could say that in certain years there was no *rbî'a*, proving that the reference is less to the astronomic season than to its ecological and socio-economic characterisation.¹⁶ For extensive herding availability of *rbî'a* on pastures is a major factor: animals may endure its

lack by eating *sedr* – a global term for every pasture’s perennial plants – but the herds which do not eat *rbî’a* are thin, produce less milk and are less likely to conceive; this in turn makes their use and exchange values very low. Moreover, as a minimal consumption of fresh grazing is always necessary, the nomad is dependant both on sedentary cultivation and cash revenues to obtain lucern or other fodder from the market. From the technical point of view, when *rbî’a* is insufficient, the work of herding becomes a heavy task, since during the day the shepherd has to move with herds far and long to find some feed for them. *Rbî’a* was always mentioned by the nomads as the main factor in and for their movement. In the current crisis, the rareness of *rbî’a* has led to a wider dispersion of groups: good pastures have diminished and are often even more scattered than before, and this has forced nomads to collectively rent lorries in order to move. A selection then occurs between those who can afford such expenses and those who are pushed to sedentarise and increasingly sell their animals to ensure sheer survival. The water whose scarcity is regretted by Ait Unzâr nomads is clearly the ‘sky water’, the rain as generator of good pasture, much more than groundwater, easily available and of very good quality in their territory.

The situation is quite different in the sedentary context. Here the lack is twofold: on the one hand, groundwater, on the other hand, water from the dam. As already mentioned, the salinity of groundwater is very high and is constantly increasing in Tiraf and surrounding areas. The villagers cannot rely for their domestic water requirements on the existing wells: they use multiple sources, showing attitudes of high adaptation to variability related to season and other factors.¹⁷ They often complain about the insufficiency in the discharge from the Ouarzazate dam over the last ten years, that has resulted in the progressive decline of agricultural production to a level that allows no household food security. As mentioned earlier, the water from the traditional irrigation system cannot be replaced by pumped groundwater for reasons of salinity.

Thus, while the nomad Ait Unzâr mainly complain about the lack of rainwater and the concomitant lack of rangeland vegetation, for the settled farmers in Tiraf the problem is more the lack of irrigation water, coupled with the poor quality of groundwater. Both nomads and farmers agree in according a central place to drought – conceived as lack of water – in their explanations of the cause of their present crisis. Indeed *jjâf* has become a sort of scapegoat mentioned to explain or justify *every* kind of deficiency in *every* domain. This is clear if we consider a repertory of frequently occurring sentences: ‘We do not have dates and wheat because of *jjâf*’; ‘Our animals are thin and the herds decimated because of *jjâf*’; ‘We have bad health and we drink bad water because of *jjâf*’; ‘We are “travelling” [*musafirîn*, meaning temporary migration] because of *jjâf*’; ‘We can not send children to school because of *jjâf*’; ‘We do not marry because of *jjâf*’; and so on. Finally, drought is present in the foundation accounts of local communities. The story of the Ait Unzâr begins at the time of a great drought followed by a period of good rains and recovery.¹⁸ The lives of local historical personalities, mainly saints, is also often linked to events concerning the discovery of a good well or

some power that such ancient people had regarding the most important resource, water.

There is a marked centrality of the drought theme in the ritual domain too. Visits to the shrines of saints and the payment of *zyâra* in exchange for amulets or other services have always been widespread among the local population. In the last three years, however, I witnessed a continuous rise in such visits, and supplication to get rid of drought became a common theme among pilgrims. Additionally, some ancient rituals, focusing on demanding water and mainly practised by women, have been 'reactivated' after a long period of silence. Thus for example *Taghounja*, carried out by young unmarried girls in order to ask for rainfall, and probably representing one of the earliest elements of pre-Islamic background in the Dra valley (Jacques-Meunié 1973). *Taghounja* is a wood spoon symbolising the fiancée, dressed as a bride and taken in procession around the *qsar*, in a festive choreography, by the young girls of the village calling on her for blessing and the arrival of the Dra flood. The Ait Unzâr nomads have an analogous ritual, with slight variations: the central figure is called *Amghara Barka*,¹⁹ who is also a piece of wood disguised as a bride, around whom young nomads girls gather playing drums, dancing and singing as in a proper marriage ceremony, asking for rains after a final slaughter. An ancient tradition of the Berber nomads of the region, the rite was celebrated by the Ait Unzâr quite recently in autumn 2002. While young girls celebrate *Taghounja* and its nomad version of *Amghara Barka*, adult women have other ritual spaces where devotion is mixed with the imploring of supernatural forces to intervene in ecological crises.

The women of *qsar* Tiraf celebrate the so-called *harîra*. Though the rite is often performed in proximity to other Muslim festivities (Ramadan, *'aid lkebir*, *'ashûr*), it has no fixed time. After some days of discussion, women may decide to appeal for a *hârira* whenever they think it is needed, and they take place mostly during the drastic phases of drought. *Harîra*, the typical Moroccan soup, entails the preparation of a collective meal that takes place in four different places of the *qsar* and through the cooperation of all women, who after cooking, offer and exchange the food, thus establishing a circulation between these four groups. In a second phase, the food is also brought to the men, but the latter are not allowed to participate directly in the celebrations. The *harîra* takes place in open space, and represents a rare occasion when women, married and unmarried, are allowed to go out together and be absent from home until nightfall. In Tiraf the last *harîra* I attended was celebrated in autumn 2001, just before the beginning of the month of Ramadan, and women clearly said that the aim of this *harîra* was to ask for the end of drought.

Among the Ait Unzâr nomads, women suggested and organised a *ma'arouf* in September 2003, near the shrine of the saint Si Lmedani, in the open space surrounding Tiraf. This religious ceremony in honour of a saint had been 'suspended' since the end of the 1970s. Now, the central prayer associated with the sacrifice made in the name of the saint was for good rainfall. Men are usually contemptuous or even slightly critical of this female ritual universe, the alleged

contradiction with Islamic principles being one of the main causes of such underestimation. For us it is interesting to observe that the almost obsessive quest for water and the magical or religious attempts to avert drought are a significant and persisting feature of the cognitive dimension of drought perception, both among nomads and sedentists.

Is Jfâf Merely a Natural Phenomenon?

Given the priority in discourse ascribed to the problem of *jfâf* and its identification with lack of water as the basis of the crisis it is possible to identify a perception that is almost homogeneous with the discourse of external agencies (the state, NGOs, scholars). They all appear to agree on a kind of 'naturalisation' of the crisis. Nonetheless, it is necessary to go beyond this primary analogy in order to ask whether the nomads and farmers are entirely convinced of such a natural explanation of the crisis or if they come up with other, non-natural factors.

Indeed, local perceptions reflect the complex interaction of various elements in the process through which the crisis has been engendered and maintains itself. Though these perceptions are basically common to both nomads and farmers, once again there are some differences between these two groups. Even though they say that their migration cycles depend upon the presence of *rbi'a*, most Ait Unzâr also insist on a crucial historical aspect: the delimitation of their pastoral territory following the creation of new international borders. Like the other Saharan groups of this region, the Ait Unzâr used to move within a huge home-range, pushing far south and east from the Dra Valley to the area between the Lower Doura Basin, the Hammâda, Foum Zguid and the region of Tata (see map). Until the first decades of the twentieth century it was not rare for them to push even beyond these areas and enter into what is today Mauritania and Algeria. The irregular precipitations in the Sahara conditioned the forms of resource appropriation: the access both to wells and pastures was normally open to various nomad groups, rather than for the exclusive use of a single tribe as is the case among the northern Ait 'Atta. Thanks to the vast dimensions of pastoral space and to the non-exclusivity of rights of access upon it,²⁰ increased mobility enabling access to other grazing lands was a common option to cope with a lack of resources in that part of their territory that was affected by drought. This strategy – common among nomad groups, especially in pre-colonial times (Bonte 1975) – began to be undermined by French colonial action, whose aim was to 'tribalise' pastoral territories, in order to ensure more efficient control on Saharan nomads by means of an official and exclusive attribution of pastures and water points (Casciarri, forthcoming). The older strategy ceased altogether in the post-colonial period, with the closure of the borders with Algeria and after the war in Western Sahara, with the new definition of southern territories as highly strategic

regions.²¹ If these factors accelerated general trends towards nomad sedentarisation, for some groups such as the Ait Unzâr who remained mainly nomadic, this became a major problem. It is then a political process – the reduction and redefinition of nomad territory – that made drought (understood as lack of water and grazing) a real factor of crisis.

In the discourse of farmers in TiraF also, lack of water is not the sole factor linked by the people to the present crisis of agricultural production. The building of the Mansour Ad-Dhabi dam, completed in 1972, collecting in Ouarzazate the water flowing into Wadi Dra, had the advantage of rationalising the natural water resources of the region. At the same time, farmers became more dependent, because the organisation of their agricultural activities started being constrained by a 'new subject': the State and national water policies. Mostly during the last phase of ecological stress, the priority given to urban requirements, industry and tourism, constituted a further factor of deprivation of water formerly devoted to agriculture. People remember that until the mid-1970s, despite phases of severe drought, it was not rare for there to be water in the *sagyyia* for a large part of the year. Even in the more arid Ktaoua, this enabled not only a fairly continuous irrigation of the palm trees (dates are the primary product that is sold), but also an annual harvest of barley, which is mainly used as food.

At the beginning of my research I attributed such accounts to a kind of idealisation of the past by elderly farmers; but some historical and ethnographic reports from the period prior to the construction of the dam appear to confirm these recollections. At the end of the nineteenth century De Foucauld (1888), describing the Dra region as he experienced it during a long journey undertaken in 1883–4, writes of the continuous though irregular flow of flood waters even in the southern part of the Dra. Water came down to the Hammâda, in the Sahara, where various flood-irrigated fields, called *madeir*, were cultivated by nomad groups. A century later Jacques-Meunié (1973) notes that six times between the 1960s and the 1970s the flood waters of Wadi Dra stretched up to the Atlantic Ocean, that is, 600 km south of the oasis of Mhamid! It seems clear that the construction of the dam has played a major role in the receding of these flood waters: it is perhaps also contributing to the rapid increase in the salinity of groundwater that was noted as the primary 'collateral effect' mainly in the lower part of the valley (Outhabit 1992). In the extreme south of Ktaoua oasis, TiraF farmers twice suffered the consequences of this engineering masterpiece supposed to bring general progress to the valley: first, through the overall decrease of water available in their *sagyyia* (much more dependent than in the north upon natural floods); second, thanks to the high salinity of groundwater, that prevents them from relying on wells for drinking water and using motor-pumps as alternatives for irrigation. When talking about the dramatic situation of agriculture, TiraF farmers mention the relation in such a process between the natural factor (the diminishing rainfall) and the man made negative effects increasingly visible after the dam's construction.

Beyond the image of drought as unavoidable natural calamity, Ait Unzâr nomads focus upon the problems created by changes imposed on their pastoral space, while Tiraf farmers do likewise about central management and national water policies after the dam's construction. Both groups establish a link between this 'breaking point', starting slowly in the mid-1970s and increasing up to the 1990s, and changes in socio-economic relations on a wider scale. The clearest example concerns the transformation of migration dynamics. Since colonial times the latter provided the most efficient 'emergency exit' in drought phases, but in recent years, just when the drought situation became dramatic, the conditions of access to migration – especially the most attractive international one – varied considerably.

In addition to the problems facing migrants and referred to earlier, recently the process of commoditisation and the transformation of consumption patterns, have contributed towards greater dependency on the market, and this proves fatal in a context of crisis. Ecological crises are not new phenomena. Oral accounts and written documentation show that throughout their history these populations underwent various periods of drought.²² But people say that even if ancient *jjâf* were ecologically as severe as the present one, there was always recovery, because the options to cope with drought were wider. Local knowledge often reports the sentence *saba' shina wa saba' zina*, 'seven bad [years] and seven good [years]', indicating the widespread perception of a cyclical pattern of drought. The exactitude of such seven-year cycles is not confirmed by meteorological data, but what is certain is that pastoral and agricultural communities, confronted since earlier times with a harsh ecological environment, possessed in the past a certain autonomy and a large gamut of solutions for coping with crisis. It is probable that this autonomy has been seriously affected during the last years of capitalist development within an international political context, contributing towards making the 'natural misfortune' of water scarcity greater and irreversible.

Local Strategies and Transforming Contexts

Farmers and Nomads Coping with Crisis

With some variations, Tiraf farmers and Ait Unzâr nomads share an overall perception of drought and its causes. The concrete strategies for coping with crisis show greater differences, the basic option for farmers being labour migration (and secondly children's education) and for the nomads military service and a higher diversification of domestic units.

Between the 1960s and the 1970s a set of factors – the demands of national and international markets, the emancipation from ancient forms of social subordination, the transformation of life ways, the development of communication and transport – provoked a fair part of the rural Moroccan

population to migrate. Since then, labour emigration has become a major element of development in the Dra Valley. Sometimes this led people to completely abandon villages and settlement in urban areas, but it also led to a certain degree of 'return migration', with ex-emigrants engaged in local development for improving material conditions, thanks to the new incomes. As far as the Draoua of Tiraf are concerned, we remark two main aspects. First, long-distance emigration is a traditional resource already practised since the 1930s. Second, migration is mainly internal and temporary, and except a few men who emigrated recently to the Gulf countries, there are no cases here of transnational migration. Most households living in Tiraf today have at least one member of the original family who migrated during the colonisation. The frequent destination was Algeria – then a French colony – where these farmers worked in different sectors, such as those of road construction, industry and building.²³ The household strategy was to send one adult son, usually the eldest one, as a migrant worker, keeping the others in the village for work in the family fields. Even when migration actually lasted several years, it was mainly perceived as a temporary situation, and indeed, most of these migrants came back to the village to take charge again of their traditional activities.

Oral accounts underlined the overlapping of drought periods in the valley with phases of intense migration.²⁴ More than the desire for emancipation from a traditional way of life or for radical change, migration was seen here as a contingency, allowing farmers to remain farmers. For the Draoua of Tiraf these notions did not basically change in the period after independence. After Algerian independence and the end of colonisation, emigration was oriented more towards the big Moroccan towns, where urban development demanded increasing labour, mainly in the building and industrial sectors.²⁵ The migration figures in Tiraf for autumn 2003 showed the near exclusivity of sedentary Draoua as migrants. Among the 53 households of Tiraf, 32 (60 percent) have migrants; of the 521 individuals, 57 (11 percent) are migrants. Of these emigrants 93 percent remain in Morocco (64 percent of them in Casablanca) and only 7 percent go to Arab countries. Most of them (93 percent) do not have regular contracts, while 75 percent migrate for short periods (less than six months); 96.5 percent of all belong to the socio-ethnic group of the Draoua. Thus, even if for Draoua migration remains the preferred option to cope with crisis, the trends of the national and international markets (the worsening of labour conditions and the unreliability of migration abroad) weaken its capacity to help recover from the ecological crisis and determined the unpredictability of migration patterns.²⁶

A secondary option towards mitigating the effects of unstable agricultural production and incomes has been the education of children. When primary schools were established in the *douâr*, most Draoua understood the importance of this new element, and schooling was often perceived as a long-term investment.²⁷ But if schooling as such is still appreciated here, and also seen as a means of upward social mobility, people do not trust it any longer as an option for coping

with crisis. This is because of the deterioration of the Moroccan education system, especially in the rural context, the disengagement of the state from the sphere of education in the neo-liberal phase, and the increasing costs that are too high for most households in critical times (Casciarri 2002b). Nonetheless, the fact that compared to their nomad neighbours, a fair proportion of mainly male adults have enjoyed at least primary education, constitutes an element of pride and distinction in Draoua discourse.

For the Ait Unzâr nomads options to cope with crisis have been quite different. Numerically speaking, employment in the military is undoubtedly the preferred strategy. Hence, if all Draoua farmer families have at least one migrant member, almost all Ait Unzâr families have at least one man who is or has been a soldier.²⁸ The regional context determines this difference. Already known as rebellious at the time of French pacification, nomads were co-opted into the colonial service early on as civil or military personnel.²⁹ But it is mainly since the post-colonial phase that the military issue has become a prioritised option, for through its location this Saharan area is highly strategic both as a frontier with Algeria and because of the development of the war in the Sahara after 1975. For the Ait Unzâr army employment often did not involve abandoning pastoralism; their strategy has been to entrust one son, often the eldest, with the family herds, while the younger ones join the army, sometimes the father himself drawing a military pension. Military employment is perceived as particularly advantageous: it circumvents the harsh conditions of subordinated work; important information about rainfall and pasture conditions can be collected, since military posts are often located on grazing lands; and on the whole it is a job that is culturally perceived as continuing with the warlike tradition of fathers and grandfathers. Among nomads labour migration is of no significance as a source of income; when practised, it is, however, transnational – the three Ait Unzâr men who migrated to France in the 1960s are the only migrants to Europe from Tiraïf. Today, a few young nomads are trying hard to penetrate the fortress of Europe through some form of illegal migration.

Finally a recent and increasing source of income is tourism. The Dra Valley is the destination of a tourism nourished by the Western myth of desert and adventure, and developed mainly in the last few years as a consequence of new Moroccan policies and of the difficult access to Algeria since the civil war in 1992. Some nomads are employed as camel guides or as ‘living examples’ of the Bedouin stereotype during the tours of caravan tourism. Compared to other groups, the Ait Unzâr have begun participating in this sector only recently and with much resistance. This is due to the awareness that incomes are very low – the nomad being the last link in a chain which is controlled by urban managers, Moroccan or European who retain most of the profit – but mainly because the tourism sector is considered to be highly precarious and unpredictable.

Drought and Marriage: Diverging Strategies in Times of Crisis

One last aspect of the reaction to crisis among farmers and nomads in Tiraḥ concerns marriage strategies, marriage being seen as a duty of good Muslims and central to social and biological reproduction. The Ait Unzâr and the Draoua do not marry one another; they share concepts of status endogamy, and tend in practice to marry close kin. However, the last decade of crisis has witnessed a change in discourse and practice in this sphere among each of these two groups, albeit in different ways.

In the Draoua discourse marriage is frequently connected with drought, both women and men, considering *jfa* as the main reason for people *not* being able to marry any more. Notably they attribute to drought the lack of production and dwindling incomes, two basic elements needed for marriage transaction. Indeed, the payment of bridewealth and the organisation of festivities constitute very high expenses. The bridegroom's family needs a surplus in production (cereals, dates, livestock) both for ensuring the wedding feasts and buying other items not locally produced. When production, and hence surplus, does not suffice, other sources of cash income have to be accessed. Moreover, a certain assimilation of urban behaviour – increased by emigration and television – has created an inflation in bridewealth, whose minimum amount is currently 2500 DH (at the time of fieldwork 10 Moroccan Dirham = 1 €), keeping up with the general rise in prices.³⁰ Among the Draoua, wedding ceremonies – often presented as a major element of differentiation with Berbers and Arabs nomads – last up to one week and involve a highly complex ceremonial articulation that is very costly. The genealogical proximity of partners does not entail a decrease either in bridewealth or in festivities, as in other contexts of the Arab and Muslim world (Bonte 1994). While everyone complains that young people can not marry any more because of drought, the strong symbolic elements (implying ethnic and status differentiation) attached to marriage make it unacceptable to arrange 'cheaper' marriages; for example, by not extending the invitation to neighbouring villages, by reducing the duration of the ceremonies, by lowering the amount given in bridewealth. In fact, the consequence of such reductions would be the loss of family honour. The analysis of actual marriages in Tiraḥ goes beyond the purview of this paper, but it suffices to say that it shows that practice is entirely coherent with the discourse.³¹

The situation is entirely different among the Ait Unzâr, where no marked differences can be observed between earlier marriages and recent ones. Undoubtedly upsetting many aspects of life, among them drought does not, however, constitute a breaking-point in this domain. The most striking feature of Ait Unzâr marriage is the facility with which the marriage link is created and dissolved for both men and women of different ages. Age at marriage is generally low – around 18 to 20 years for men and 16 to 18 years for women – an aspect that is as condemned by Draoua, as is polygamy, another practice more common

among nomads than among farmers. But an examination of genealogical evidence and present practice shows that divorce is also very common and remarriage often takes place shortly thereafter. As a result, household units often consist of husbands and wives who have been married more than once and of children related to one another as paternal or maternal half-siblings. No particular reprobation seems to be attached to female divorce – another point of difference with the Draoua – and even women with children from a first union easily and quickly remarry. Also the bridewealth demanded and given for a divorcee is usually the same as that given for a virgin, a trend found among Berber groups elsewhere too (Léfebure 1981). Wedding ceremonies last two or three days and normally take place in the camp of the bridegroom's parents. Even if formally every Ait Unzâr could consider himself as invited, participation is reduced because of territorial dispersion and difficulty of movement. Here, too, it has become normal to offer some 'modern' items as gifts from the market, but livestock remain a basic component both in marriage transactions and sacrificial rites.

The most striking difference with the sedentary communities is in the amount of bridewealth, which is generally very low (between 200 and 500 DH) among the Ait Unzâr, and is less affected by general inflation.³² Their discourse on this subject is very pragmatic: they consider it normal and right that marriage remains accessible to all, including the poorest, especially in hard times such as the present. They say that this 'low-price policy' concerning marriage is shared by all the Ait 'Atta, through a kind of supra-tribal regulation endorsed at the level of the largest unit. Thus, this huge confederation of Southern Berbers, which has lost its political and military unity, appears to retain a function in the control of bridewealth, aiming at maintaining a low rate, more autonomous from global trends of commoditisation and inflation, and to fix it uniformly for unions between two Ait 'Atta partners, even when they belong to different tribal units. Thus the Ait Unzâr continue, even in periods of drought, to marry and divorce as frequently as before, and considering the high expenses incurred by the Draoua in getting married as foolish; for the latter, the fact that the Ait Unzâr, and generally nomad Berbers, marry their daughters for so little and so easily is an indication of their inferiority, and even of lack of honour.

Maintaining Strong Inter-Ethnic Links in Tiraf: Some Provisional Conclusions

The divergence of options used by Tiraf farmers and Ait Unzâr nomads to cope with crisis is not surprising, since socially, economically and culturally the two groups are relatively autonomous, though they share a common space. Apart from the centrality of drought, varying, group-specific perceptions of the factors involved in the crisis partly explain this difference. But one additional question

arises from such an analysis of social organisation and resource management. During the course of fieldwork I became interested in understanding *how* and *why* such a multilevel diversity and strong autonomy within each of the two communities does not lead to open conflict and to the individualisation of socio-economic interests and behaviour. With broadening knowledge of this region, I observed that the people of TiraF seemed to better adapt to crisis, or at least to be affected less dramatically than some of their neighbours. One possible factor which sets off the people of the TiraF-Ait Unzâr complex as a whole from the rest of the region, is a kind of living solidarity and a persistence of complementary organisation at numerous levels of nomad-sedentary interaction. The variety of options, change and the impact of 'modernity', even a major all-embracing crisis, do not appear to lead to a final weakening of social ties, or to harsh conflict between the two groups whose historical relations structured the organisational web of an agro-pastoral setting. Such a joint management in the only part of southern Dra where the nomadic component is still important and really visible, seems to contradict the prejudiced assumption, rooted in pre-colonial times, reinforced by colonial ideology and living on in post-colonial society of the inevitable violence and inequality inherent in nomad-sedentary relations. Indeed, the inner cohesion of the Draoua and Ait Unzâr groups was in some way reinforced by the polar opposition between the two and the persisting strong identity and autonomy of 'we' versus 'they'.

A brief comparison with the rest of the Valley, especially with other *douâr* of the same region in Ktaoua – including the closest ones of Qsar Kebir and Blida – will illustrate the aspects that distinguish TiraF from the general trend. Overall, the crucial phase of socio-economic change after independence impacted Dra Valley societies significantly between the 1960s and the 1970s. Economic growth led to the progressive dissolution of traditional forms of subsistence, mainly by remodelling agriculture and through the sedentarisation of nomads. In our case, however, the Ait Unzâr remained the only predominantly nomadic group in the Ktaoua region, and traditional date-cultivation continued to be the main source of subsistence for TiraF farmers. Urbanisation and emigration generally led to an abandoning of oasis space, or to its transformation as a secondary habitat. In TiraF, although many houses in the old *qsar* have recently been vacated, the traditional habitat maintains its coherence, not only architecturally, but also as physical and social space. Emigration is normally not conceived of as a definitive move. Elsewhere, usually, the income from wage labour enhanced forms of social differentiation, even within the same social or ethnic group, accelerated the individualisation of access to resources, and diminished the importance given to earlier forms of non-wage labour. But in TiraF, emigrants are not manifestly a group 'apart', nor are they marked by a strikingly different status; the open access to primary resources continues to be managed mostly through solidarity, and collective criteria as well as traditional forms of labour with payment in kind subsist. In other *douâr* such transformations brought about a weakening of traditional institutions of

political organisation, or their nominal existence paralleled by the stronger presence of a modern centralised system on a territorial base.

In Tiraŕ the assembly of the two *qabila* of Ait Unzâr and Draoua is still managed according to the twofold criteria (ethnic divide between nomads and sedentists and further genealogical articulation), and exhibits vitality through rulings about the management of the main aspects of collective life – resource access, regulation of water rights system, relations between the two communities, matters of ‘moral order’ – autonomously from state institutions. Lastly, the historical relations that resulted from the military protection pacts between nomads and sedentists – an element that was dismantled elsewhere because of its implications for status hierarchy and subordination – is still functioning and respected in Tiraŕ, and its relevance is underlined both by the Ait Unzâr and the Draoua. As late as in 1999 the Draoua *qabila* gathered to decide the number of nomad guardians to be entrusted with the control of the date harvest in the oasis, while the Ait Unzâr *qabila* gathered to choose one representative for each of its four lineages to take on this responsibility.³³ The nearly 150 year-old foundation of this relationship and its relevance at various economic, political and social levels is frequently evoked to justify present forms of joint management: ‘We gave them the quarter (*rba*)’, say Draoua; ‘They gave us the quarter’, echo Ait Unzâr.

The ethnic and lineage organisation of the Tiraŕ *saqqiya* is linked to the ancient division of water as a resource and is still respected in the turns allotted for irrigation, but it should be stressed that this is also valid for more recent and modern water resources: the collective water point supplying Tiraŕ since the beginning of the 1990s, serves seven taps – four for the subdivisions of the Ait Unzâr *qabila*, three for those the Draoua *qabila*. This material inscription of social structure upon water distribution patterns becomes even more interesting when we learn that in the surrounding villages the same equipment was distributed following territorial divisions or even in terms of individualised households.

Finally, Ait Unzâr and Draoua act in coordinated patterns, while restating their tribal autonomy and coherence, on matters concerning the management of conflict upon collective land. In a conflict in the mid-1990s about some fields whose ownership was contested by the inhabitants of the neighbouring Qsar Kebir, the Ait Unzâr and the Draoua of Tiraŕ jointly struggled to stake their claim. When they succeeded, they divided the territory according to the *na’ya* pact (i.e. 75 percent to Draoua and 25 percent to the nomads), before further distributed these parts among their respective lineage sections.

It is not my intention here to argue for the presence of a sort of ‘archaism’ as the basis for the persisting force of traditional forms of management grounded in nomad-sedentary relations. Nor do I intend to argue that such relations, originally those of domination, expresses themselves simply through a sort of harmony between the groups: the absolute closure between the Ait Unzâr and Draoua through endogamy in itself indicates that status considerations are jealously maintained. I wish simply to stress that, in spite of the attempts by both colonial and postcolonial regimes to get rid of tribal and traditional relations

perceived as an impediment to 'modernisation', such relations are surviving well, efficiently applied in local management, and well integrated with structures of so-called modernity.

My analysis of the phenomenon of drought in the southern Dra Valley based primarily on the data presented in this paper strongly suggests that in order to understand the interaction between human beings and their natural environment, we must consider it in its broader historical and contemporary socio-economic and political framework. The relationship between natural and social elements is always a dialectical one, and this is true even in the Saharan region, where extreme climate and ecological constraints appear to be more imperative. It is undoubtedly easier and reassuring, especially for the agencies supposed to be working out development options and activities in the local context, to attribute the dramatic effects of crisis to an unmerciful nature, rather than to political decisions and complex human factors. If those who are officially responsible for defining the general frame of reference for resource management and economic development would take such factors into consideration, further questions may well emerge. For example, that of verifying whether traditional principles and behaviour – the concept of 'tradition' being understood, not as a sign of archaism but in a dynamic sense, as a set of well-rooted practices beyond the logic of purely individual interest and the market economy – could act as more adapted tools to cope with crises situations, especially when the crisis is not only a natural one. The organisation of Tiraf and the Ait Unzâr and their reactions to drought are well worth developing and testing through a broader and deeper comparison, to see if the preliminary observations and results presented here support such a general hypothesis. The question may be a crucial one for the multitude of local communities all over the world, whose material and social reproduction is today at risk because of the disruptive and rapid effects of globalisation.

Notes

1. Fieldwork was conducted over thirteen months between October 2000 and April 2004, as part of IMPETUS, an interdisciplinary research project of the Universities of Cologne and Bonn, that was funded by the Federal German Ministry of Education (BMBF, under grant no. 01LW0301A) and the Ministry of Science and Research (MWF, under grant no. 223-21200200) of the state of North Rhine-Westfalia. My acknowledgements are due mainly to Michael J. Casmir, who was the scientific director of my research. I am grateful for the help received from local institutions and authorities: notably the personnel of Ormvao and CMV in Ouarzazate, Zagora and Tagounite, the Qaid of Tagounite and the *shayikh* of Tiraf. I was introduced into the area by Prof. Mohamed Ait Hamza, our main Moroccan partner, to whom I express my gratitude. My warmest thanks are reserved for the nomad Ait Unzâr, the people of Tiraf and Tagounite, who all received me with kindness and accompanied me as friends and informants throughout my research.
2. The same group is sometimes defined as *haratyîn* (sing. *hartâni*), a word whose uncertain origin may indicate a semi-slave origin. Today the term is usually replaced by the more

- neutral *Draoua* (sing. *draoui*). Even though the latter has geographical connotations, it is not really used for every inhabitant of the Dra Valley, because of the hierarchical implications still present in the perceptions of the local populations.
3. In order to weaken the political power of nomad tribes in the colonial period the French tried unsuccessfully to nullify the *ra'ya* pacts. After their formal abolition in 1936, they were however, forced to immediately reactivate the system, following the demands of the client communities (Niclausse 1954), and to admit its importance for the socio-economic and political organisation of local communities. The dynamics of the post-colonial period made the *ra'ya* progressively lose its weight, but in some places like Tiraŕ the system is still working, although in the absence of official institutional recognition.
 4. Except the family of the Ait Unzâr *shayikh*, which is also settled in Tiraŕ for political reasons, these groups converted their seasonal presence in the village into a more stable settlement during the recent crisis, between the 1980s and 1990s). Nonetheless, they are still considered as *rubhâla*, 'nomads': part of the family (often one or two adult sons) continue to move with herds on the pastoral territory and the settlement of the others is never seen as permanent, as is confirmed by some cases of 'renomadisation'.
 5. Until 1984 Tiraŕ also had a community of *Mrabiîn*, the people of Si Lmedani, nomad and 'saintly warrior' of the pre-colonial and colonial periods, whose shrine is on the slopes of the Jbel Meggâg, near Tiraŕ. Twenty years ago the descendants of Si Lmedani, to whom some Ait Unzâr and Tiraŕ's Draoua are still affiliated, settled in the town of Tagounite and abandoned nomadism.
 6. When Draoua and nomads talk about 'foreigners', (*barranyîn*, literally 'the ones of the outside'), they both imply every individual who belongs neither to the original group of Tiraŕ farmers nor to the Ait Unzâr. Though ethnically different and late comers, the Ait Unzâr have in this context lost their label as foreigners, thanks to the exclusive and ancient relations they enjoy with the *qsar* dwellers.
 7. The salinity of Tiraŕ wells (by measurement of conductivity in μS) is between 10 μS and 14 μS . This is considerably higher than that measured in the nearby sites of Ktaoua oasis (Blida 7 μS , Tagounite 5-6 μS). To appreciate the very high level of salinity, it should be mentioned that normal drinking water is between roughly 0,5 μS and 2,5 μS and that even animals stop drinking water at almost 8-9 μS .
 8. A local figure of traditional power, the position of *shaykh* was maintained during the colonial period, though the French controlled and oriented their nomination. In the post-colonial administrative system, the central authority appointed the *shaykh* after consultation with local people. His jurisdiction comprises various *douâr*, every one having an appointed *muqaddem*. In this 'modern' and national version the *shaykh* loses the specificity of a lineage or tribal chief and his jurisdiction becomes territorial, but in the case of the Ait Unzâr the position of *shaykh* of Tiraŕ village coincides with the chief of the *qabila* Ait Unzâr chosen by tribesmen on tribal and lineage (not localised) criteria.
 9. An example of such recent interest can be found in the selective social sciences bibliography available on the Impetus Project website (Casciarri *et al.* 2004).
 10. Local experts consider six annual discharges as the minimum needed for a satisfying agricultural cycle. If we look at the irrigation activities over the last ten years, we find the average of 6-7 between 1993 and 1999 decreasing to reach the historical minimum of 2 discharges in 2002-3. Moreover, most discharges during the period 1999-2002 were less than the 40 million m^3 required for agriculture that was just sufficient to recover the groundwater level and fill up drinking-water reservoirs (Ahmed Besbes, ORMVAO - Zagora, pers. comm.).

11. The experience of the German Technical Cooperation agency (GTZ) in Zagora is significant. Looking at the multitude of projects launched during the last ten years and at the disappointment expressed in most final reports, some questions arise about the functioning of cooperation agencies in the Third World. Methodological and technical problems are often one source of such failure: for example, the priority given to budget evaluation for deciding (normally short) periods of field work, together with some methods of rapid data collection (RRA, MARP, etc.) that have unfortunately been largely used in the last decades have failed to yield a proper picture of social dynamics as a base for development intervention.
12. Genealogies for the first half of the twentieth century showed that in average households only 4–5 children reached adulthood and one or both parents frequently died. Today a woman in her forties frequently has 8–10 living children.
13. Almost all women over 35 years old today are illiterate; among men the numbers are less only because of Islamic schools. But today most men and women in their twenties have attended at least the first years of primary school. There are also rare cases of young people between 20 and 30 having studied up to university.
14. Today most nomads or former nomads have a lower economic status than most Draoua. But the persistence of a clear identity and status boundary between such groups remains, and is clearly expressed in marriage strategies: in a sample of 225 marriages, there were only two cases of inter-status marriage between a Draoua and a nomad, none being found between Draoua and any religious group.
15. In the same semantic domain, other expressions are frequently used. *Tamara* is one pregnant word used both by Arab and Berber speakers to indicate the global stress in drought periods, the difficulty of assuring one's life in harsh times. The verb *'aya*, meaning in standard Arabic 'to be unable' or 'to be tired', is a common euphemism for saying 'to become poor, to be reduced to minimal survival levels' and its use is also linked to descriptions of drought periods. Berber speakers often use the expression *ichka luqt*, 'times are hard', meaning the harshness of life entailing various elements, but basically linked to drought matters. Our Berber informants indicated the Tachelhit term *shidda* as close to the Arabic *jfaf*, and defined as 'the times when there is nothing to eat for either man or animal'.
16. A similar observation was made among other nomads, such as the Ahâma of Central Sudan, who live in an arid region with rains concentrated in summertime, and who use the term the term *kharif* indicating simultaneously the autumn season (as in standard Arabic) and the rangeland grasses emerging after rainfall (Casciarri 1997).
17. Between 2001 and 2003 I measured water consumption – for domestic use and for the drinking purposes of 1 to 4 heads of livestock living near the house – on four occasions for a period of one week in different seasons (November 2001, April 2002, March 2003, October 2003). I recorded the quantities of water fetched and consumed, distinguished according to different water sources and uses, by a sample of 5 households whose sizes varied from 4 to 20 members. The results showed that Tira people use six sources (wells, *saqya* canal, *matfia* covered reservoir, mobile reservoirs, *laouina* basin dug on mountains, collective taps) for four different uses (drinking, cooking, animals, washing), according to various criteria: water quality (salinity and cleanliness), access facility (property rights, proximity, labour and energy involved), seasonality, and cost considerations. Total daily consumption (the average for an individual) varies from 8 to 15 l which is quite low compared to urban areas in the region, where, for example, 60 l per head was measured in Ouarzazate (Schluetter, pers. comm.).

18. Oral traditions have two versions of such foundation. In the first, a woman remains alone (without men, children and herds) because of drought and afterwards she regenerates the whole tribe thanks to heavy rains sent by God. In the second one, a wadi flood destroys men and herds which, exhausted by a long drought, offended God; here again the only survivor, a pregnant woman, reproduces the whole tribe.
19. In Tachelhit, *amghara* literally means 'great', but the term is also used to indicate the mother-in-law or an old respected woman – the masculine form *amghar* often designating a lineage or village leader, like the Arab *shayikh*. The second term, *barka*, is a feminine proper name linked to the root *BRK* ('to bless'). As the central person in the rite should be a young unmarried woman, the term *amghara* is more likely to be understood as referring to 'greatness' in the power of giving water, more than in the sense of age.
20. The lack of exclusive appropriation did not mean the absence of conflict between nomadic groups. Even temporary appropriation or access was always a subject of negotiation in a context of variable relations of strength and shifting alliances among these pastoral communities. On the contrary, the status of 'protectors' in the oasis space and the possession of fields determined exclusive property rights for nomads as well as for sedentary communities.
21. The existence of 'bad borderlines' since the 1960s (the *guerre des sables* with Algeria in 1963) and increasingly in the mid-1970s (the Green March in 1975 and the subsequent war in western Sahara) is what Ait Unzâr complain about most frequently, when discussing the present crisis of the pastoral way of life.
22. Such dramatic periods are used in local temporal definition. Most frequently evoked are '*amm ar-rûz*, 'the year of rice' (mid-1930s), when the French used to pay Dra workers with rice, and '*amm l-harîra*, 'the year of soup' (1945), when the colonial administration distributed soup to the population to limit the famine.
23. The population of southern Morocco was in high demand. On the one hand, Draoua were known as 'hard workers' – which also means more easy to exploit – on the other hand, France was confronted with the resistance of Algerians who often did not accept to work for the colonial master.
24. Such a coincidence is also stressed in official French colonial documents. At the *Bureau d'Affaires Indigènes* of Tagounite, the monthly reports for 1933, shortly after the pacification of the south, note the seasonal exodus of manpower towards the towns in the north or on the Atlantic coast (Archives militaires de Vincennes, SHAT), following bad harvest seasons.
25. The rare cases of entire families who emigrated during the 1970s, did not bring about a definitive break with the village. Once their income improved between the 1980s and the 1990s, these families resettled in Tiraf, where they had left behind houses and fields in the care of some relatives.
26. The dynamics of such short-term, almost seasonal migration, under precarious conditions and low wages – most migrants work without an official contract and as daily wagers – is intimately linked with agricultural production: if the date harvest is likely to be a bad one, the village empties of adult men, but the latter are ready to return if a telephone call announces a future dam discharge in their region.
27. Even though the difficulties increase with the level of education (*collège* and *lycée* are often far away from village and transport is not available), in Tiraf there are two cases of young men who studied at University. One is now a teacher and the other, a clerk. Two other young men are studying at the Faculty of Agadir. Women are still almost completely excluded from higher education.

28. According to data collected in autumn 2003, 20 percent of Ait Unzâr households have at least one member in the army. Military employment can take different form, according to precise job and salary: as members of the *Forces Armées Royales*, whose functions are linked more to law and order, or 'ordinary' soldier in the Sahara, which is better paid. Military personnel have special rights to early retirement (at 45–50 years), which is a very attractive perspective for nomads who normally returned fully to pastoral activities after retirement.
29. The employment of Moroccan troops by the French Army was important during the Second World War, in the war with Algeria and sometimes after the war on metropolitan French territory.
30. Genealogical data together with oral accounts indicate a steady inflation of bridewealth over time. Starting at almost 100 DH in the 1950s, it rose to 500–1,000 DH between the 1960s and 1970s, reaching 2,000 DH between the 1980s and 1990s, and 2,500–4,000 DH in the last years (note that the current monthly minimal wage [SMIG] is around 2,500 DH). The amount is enormous when compared with the cost of living and the low level of available cash incomes.
31. During the last three years (2000–2003) the Draoua of Tiraf celebrated only four marriages – very few compared to former trends. It is not fortuitous that such marriages involved families with higher incomes, thanks to the importance of migrant revenues.
32. If we compare, as we did for Draoua, the marriages of different generations, we obtain the following figures: 10–50 DH in the 1960s, 150 DH between the 1970s and 1980s without significant inflation, and a standard bridewealth of between 200 and 500 DH up to now. Among their nomad neighbours, the 'Arîb, marriage is as expensive as among the Draoua and other sedentary communities, which means that low bridewealth amounts are not characteristic of all nomadic communities here.
33. Draoua and Ait Unzâr explained that the lack of such contract in the years 2000 to 2003 was merely due to the insufficiency of date production, both declaring that when agriculture recovers, the Ait Unzâr will again be called for this kind of work. At the same time, for Tiraf people, the Ait Unzâr are the only nomads allowed to approach the oasis space to gather fallen dates as *kharrâfa*.

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