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A Dissertation Submitted to the Faculty of the Department of Anthropology In Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy In the Graduate College The University of Arizona

1998
As members of the Final Examination Committee, we certify that we have read the dissertation prepared by Hsain Ilaiane entitled *The Power of the Dagger, the Seeds of the Koran, and the Sweat of the Ploughman: Ethnic Stratification and Agricultural Intensification in the Ziz Valley, Southeast Morocco* and recommend that it be accepted as fulfilling the dissertation requirement for the Degree of Doctor of Philosophy.

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Final approval and acceptance of this dissertation is contingent upon the candidate's submission of the final copy of the dissertation to the Graduate College.

I hereby certify that I have read this dissertation prepared under my direction and recommend that it be accepted as fulfilling the dissertation requirement.

Dissertation Director Thomas Park
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DEDICATION

In memory of my mother, Bedda Moha, the nomad, who saw the pursuit of education as a way out of poverty for her children.
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ABSTRACT

I examined the intensive farming systems of the Ziz Valley of southeastern Morocco. The valley is a 250 km long expanse watered by the Ziz River. Surrounded by arid Saharan desert, the valley houses a dense, rapidly growing, and ethnically stratified population of Arabs, Berbers, and Haratine (blacks). Irrigated farming of cereals, olives and dates, and livestock raising dominate the lives of its inhabitants. Upon the analysis of the Ziz data, I reached three major findings.

First, despite the unexpected finding that Berbers actually get more out of the same amount of land than Haratine and Arabs, and the fact that the Haratine are not the most productive farmers as hypothesized in the research design of my dissertation, this study underscores the urge to reformulate the theory behind agricultural intensification to incorporate the key variable of ethnicity and its role in making land productive in the analysis of agricultural change. Thus, contrary to current theories which examine social and economic change in terms of agricultural productivity and crop complexes, my findings demonstrate that the same agrarian regimes in the ethnically heterogeneous Ziz Valley differ markedly in production and intensity between ethnic groups, and therefore provide household-level evidence that ethnicity is a key, albeit a heretofore ignored, variable in the processes of economic and social development.

Second, the study of ethnicity has dwelt too much on defining what ethnicity is, erecting its boundaries, and outlining its emergence as essential elements in the structuring of social organization between and among groups. However, with the infusion of
remittances from abroad the Haratine have made ethnicity a political and economic instrument through which a Haratine corporate group has emerged to resist the ethnic mode of production.

Third, ethnic change in the valley, and for that matter throughout the oasis social world of Southern Morocco, could not have risen from within the communities social structures, and the only avenue for the subaltern groups to change their lot in terms of political participation and access to land was to migrate outside the valley, return home with remittances, and undo the pillars of ethnic stratification.
INTRODUCTION

AGRICULTURAL INTENSIFICATION, ETHNICITY, AND SOCIAL CHANGE

In the Sahara the oasis—which is to say, the forest of date palms—is primarily a man-made affair and can continue its existence only if the work of irrigating its terrain is kept up unrelentingly.... It was never the practice or the intention of the sons of God to live there. They have a saying which goes, "No one lives in the Sahara if he is able to live elsewhere.".... The oases, those magnificent palm groves, are the blood and bone of the desert: life in the Sahara would be unthinkable without them.... The alleys are clean, bordered on each side by hand-patted mud walls, not too high to prevent you from seeing the riot of verdure within. Under the high waving palms are the small trees—pomegranates, orange, fig, almond. Below these, in neat squares surrounded by narrow ditches of running water, are the vegetables and wheat. No matter how far from the town you stray, you have the same impression of order, cleanliness, and insistence on utilizing every square inch of ground. When you come to the edge of the oasis you always find that it is in the process of being enlarged. Plots of young palms extend out into the glaring wasteland. Thus far they are useless, but in a few years they will begin to bear, and eventually this sun-blistered land will be a part of the green belt of gardens (Bowles 1957:134, 135-36).

This is not a travel account of the poetics of the oases' farming systems, but an ethnographic study of how different ethnic groups intensify every square inch of soil. It is the story of a people who have been struggling to make a living in a marginal and precarious environment and the ethnic changes occurring within the Arab, Berber, and Haratine communities in the Ziz Valley, Southeast Morocco. Although the poetic images of the Sahara Desert combine to make of the desert the wanderlust of a many Western adventure seeker, this study focuses on how the adaptation process and practice of intensive irrigated agriculture relates to environment, technology, and the social organization of the means of production and resource control within the frameworks of

This dissertation is not a study of the cultural system of beliefs and shared meanings and symbols that make up the cultural stuff of everyday life of any social groups within any society. Instead, the focus here is on the ways in which ethnically different households express their give and take within the contours of their environment and social context, and how changes at the intersection of history and demography have re-arranged the institutional and social organization of making the land of the palm grove more productive. What follows is not strictly a cultural analysis of ethnic ways of rendering land and trees more productive, but rather an investigation of the relationship between ethnicity and agricultural production or intensification at the household level, and the weight of recent ethnic transformations in restructuring old patterns of land access and social mobility within the ethnically stratified communities of the Ziz Valley.

What I have been engaged in over the last four years is a documentation of a local and regional economic system characterized by historically constructed power relations and ethnic stratification, differential land and economic and cultural management practices by Arab, Berber, and Haratine smallholders. This dissertation is framed within the political ecology tradition—which is to say, the use of a multi-level analysis which combines the ethnic politics of resource control and its engagement with
the larger society, and how these interactions have been accommodated by social actors. My research method is based on the hypothesis that members of the most subordinate group, the Haratine, have intensified agricultural production more than is typical on the lands of most members of the traditional land owning groups, Arabs and Berbers. The Haratine, however, have in recent years, particularly over the last four decades, remitted significant funds from overseas and national migration and have begun to buy land and enter politics on a grand and unforeseen scale. Hence, the dialectics between local and external forces of social change are the driving themes of my project. At the same time, these changes coming from outside the valley have in many ways re-arranged the old ethnic relations, the institutional control and distribution of resources, and have provided impetus for political conflict resulting in the production of a fragmented sense of community.

The first theme is that Ziz River farmers have been practicing intensive small-scale farming for centuries. Intensive agriculture is a continuous process of boosting the productivity of land currently under cultivation by adopting a bundle of "fine comb" techniques such as irrigation and water-control, diversification of production, erosion control through deep tilling, ridging and terracing, and systematic application of manure to restore and increase soil fertility. In contrast to expansion and/or extension of the land base under cultivation, intensive agriculture, defined in terms of yield returns per unit of land over time, stresses output as the dependent variable, and it examines the impact of the total factors of production (labor, capital, and technology) as the
independent variables (Boserup 1965; Geertz 1963; Netting 1993). All Ziz farmers rely on intensive farming based on crop cultivation, tree-crops, and livestock raising. Two major schools of thought permeate the literature on intensive agriculture: the Boserup model and the ecosystem approach.

Boserup suggests that agricultural change is related to population pressure and that changes in the man/land ratio should be reflected by a transition in land use strategies. Boserup’s argument is based on the idea of diminishing returns to labor investment. Without the inducement of resource scarcity, people do not intensify for the maximization of work and the mediocre, if not falling, returns on labor. Using a set of examples of traditional agricultural systems, she advances the relationship between population density and agricultural intensification. Accordingly, the intensification index is based on the cropping frequency of land use systems along a temporal spectrum, ranging from forest fallow through bush and short fallow to annual and multicropping (1965:28-34).

Because it is a dynamic classification, she states that agricultural change could move toward intensification with population pressure and toward the direction of extensification of land use if population density declines. Intensive farming systems under conditions of land scarcity emerge as the outcome of a higher ratio of people to land. Cross-country case studies confirm some aspects of the postulated relationship between population density and land use despite varying crops, soils, tools, and rainfall.

Small-scale farmers are not so frozen in their intensive systems that they will
keep them when the ratio of people density to land changes. Evidence for this sort of change is available from the Americas, Africa and other parts of South-East Asia. Colonization schemes of the plentiful lands of the Americas, in particular South America, by slash and burn techniques and ranching show how farmers gave up their intensive farming 'tool kit' they practiced earlier on their small fields in Europe (Boserup 1965). Agricultural settlements schemes in such areas as the Amazon Basin and South-East Asia are as often responses to state subsidies and volatile inflation rates as they are to higher population densities (Moran 1981).

Likewise, arguments about the relationship between farm size and the debate surrounding the evidence for the inverse relation between farm size and productivity stress the superior performance of intensive agriculture based on a set of factors concerning technical and economic efficiency, the structure of asset ownership, social differentiation, dual market structures and imperfections, and agrarian transition (Barlett 1977; Roa 1966).

Similarly, because of security the Kofyar of West Africa migrated from their intensively cultivated plots to frontier lands where they practiced swidden agriculture despite the fact that they had knowledge of intercropping, leveling, and manuring. In addition to the use of modern inputs, the 'old' intensive techniques re-emerged on frontier lands once they were filled up and population increased (Netting 1968; 1993). Although Boserup's model of land use types and population correlations has provided plenty of useful arguments about cultural adaptation and innovation, it still has to deal
with the question of whether the marginal productivity of labor and periodicity in agriculture indicate progress or involution in the processes of agricultural change (Park 1992; Richards 1985). However, attempts have been made to integrate historical and social variables into the ecosystem models (Geertz 1963; Moran 1990; Rappaport 1968).

While agreeing that land use change is related to population pressure, Geertz contends that these transformations are involutionary, and do not constitute transitions to a different system of farming. Geertz demonstrates how the Dutch policies of economic exploitation in Java conspired to bring about and to perpetuate the relationship between population pressure on scarce land and intensive land use based on higher labor inputs with declining marginal productivity. These external forces played on the circumscribed and small-sized sawah fields production, he insists, led to the emergence of a model of agricultural involution. Because of population density, averaging 480/km², the Javanese peasantry supported high population densities through the use of intercropping of wet rice on irrigated sawah fields, and maintained stable yields by the mobilization of labor intensive techniques of irrigation and land management.

Regardless of these inconclusive debates, differential factor prices facing different farm sizes are not the only determinants of factor inputs intensities. More essential is the amalgamation of property rights and tenurial circumstances that condition the resource entitlement and market participation by various size holdings. Particular property entitlement influences the bargaining power of the farmer in the market
labor, land, credit, and entrepreneurship (i.e. management skills). Historical factors writ large in the environment, combined with current degrees of exposure to the market and the qualities of those market forces, convincingly shape production strategies, which in turn have a bearing on future resource endowments (Berry and Cline 1979).

The significance of the above arguments is that if cross-cultural studies of intensive agriculture have broadened the testing and application of the relationship between population pressure and intensification of agricultural production, then the extent to which small-scale farmers in the Ziz Valley intensify land use must be tied to specific ethnic and economic conjunctures. Such a situation lends itself to an empirical analysis of the relationship between ethnicity and agricultural intensification that is the driving hypothesis of this dissertation. Although the prevailing body of literature on agricultural change privileges variables such as population dynamics and a host of socio-economic indicators to explain this change under certain conditions, it does not examine the impact of ethnicity on the movements of farming systems in the direction of hyper-intensification and extensification of agriculture. I am framing a theory that explains agricultural change in an ethnically stratified environment, and therefore I am broadening the implications of the relationship between population pressure and intensification for social and economic development in rural Morocco.

As the review of agricultural change literature shows, small-scale farmers are not just food producers with fragmented and small farms. They achieve higher returns per unit of land and time than those produced by extensive systems of land use, such as
cattle ranching, monocropping on large industrial farms, or swidden farming (Berry and Cline 1979; Boserup 1965; Netting 1968 and 1993).

This short review of agrarian ecology leads me to the second theme running through this study: ethnicity. The literature of ethnicity and tribal systems is so dominant that my short tribute can only delve into some relevant pieces of theory. This literature, particularly in Africa and the Middle East, spreads its spools in three directions: tribalism, invention of tradition, and urban ethnicity (Ferne and Malarkey 1975). Ethnicity is an illusive category, at times descriptive and at others evaluative. Largely as a result of the rural and urban transformations that old social organizations have undergone in the Third World, the concepts of “ethnicity” and “ethnic group” have gained currency at the expense of the notions of “race” and “tribe”. Arguing that the continuous use of the term “tribe” offended African colleagues, Southall (1976) called for the elimination of “tribe” and its substitution with “ethnic group”.

The ethnicity debate can be divided into two camps: the primordialists and the constructionists. Primordialists view ethnicity as a product of common ancestry, culture, and language. Linked to the biological aspects of evolution, ethnicity and race are offshoots of kinship structures and expansions. Thus ethnicity as an essential identity that members of the group inherit at birth and which responds to the needs of belonging and social cohesion is much better than the attributes achieved later in life. In the context of political and economic changes in post-colonial societies, Geertz argues that ethnicity takes the attribute of a weapon for defending specific interests of particular
Although most aspects of the primordialist approach have been rejected by empirical studies, other characteristics of it have overcome the impact of modernization. Perhaps this is largely due to the difficulties associated with explaining the rationale for the intensification of ethnic corporateness in the emerging modern world of supposedly modern bureaucracies and calculated interests.

By contrast, constructionists subscribe to the view that ethnicity is not just determined by common descent or ascription, but also involves a process of constructing social identities in response to the dictates of specific historical, ecological, and political circumstances. They demand that students of ethnicity ought to refrain from uncritically embracing the informant’s claims of common descent, language, and culture. Ethnic groups, so the reasoning goes, are to be found and analyzed in the plural, that is to say, in the relationships between “us” and “them”. Barth (1969) has criticized the notion of equating ethnicity with culture, particularly using the tribe-group scheme to understand the collective identity of ethnic groups taken for granted by Evans-Prichards (1940) and others who disseminated the segmentary lineage model of social organization all over Africa and the Middle East (Berque 1958; Gellner 1968; Hart 1976 and 1984; Montagne 1930). For Barth, the constitution of ethnic groups depends on the construction of social
boundaries, combining both aspects of self-ascription and ascription by others. In his model of ethnicity, first, the elementary definition of ethnicity begins from the definition of the situation embraced by social actors. Second, the focus of attention becomes the maintenance of ethnic boundaries—which is to say, the structured patterns of interactions between “us” and “them” which occurs across the boundary. Third, ethnic identity depends on ascription, by members within and outside the group in question. Fourth, ethnicity is not a frozen asset; it is situation specific. Finally, ecological issues are central in organizing social identity, as much as competition over scarce resources in particular niches structures the production of ethnicity.

Constructionists privilege the flexibility and strategic exploitation of ethnicity; however, arguments and implications vary widely (Cohen 1978; Williams 1989). While some give prominence to the analysis of the rise of social identity within static cultural and ecological frames of reference, often with little attention paid to issues of power, social stratification, and outside influences, others emphasize the political mobilization of ethnicity by social actors in competition over resources (Despres 1975). Building upon Weber’s construct of ethnic membership in group formation (1978:51-51), Despres, for instance, argues that ethnic groups are essentially corporate organizations engaged in communal action of economic and political goals. He suggests that the ethnic nature of the corporate group provides the infrastructure critical for collective action to enhance access to resources. Based on collective social closure, ethnic groups are equipped with appropriate channels to enter into political agreements when conducive,
and to rally its members to defend common interests (Jenkins 1997).

Furthermore, in places where Islam is the dominant faith and Arabic is the official language and the instrument of cultural production, the ethnic map has usually been a victim of colonial and post-colonial schemes of varied drafts and leveling. In Muslim Africa and the Middle East, ethnicity, another aspect of ethnic cohesion, is an illusive concept, and it is embedded in varied interpretations. It is a strategic asset used for influencing political discourse and mobilization, and ethnic relations are also driven by political, economic, and ritual considerations. The relationship between ethnic production and the politics of Islam is a dynamic one, and it changes according to the dictates of the circumstances, ranging from local forms of resisting the state to the global effects. For some Islamists, the notion of ethnicity is non-existent in the Islamic platform of discourse and only belongs to the age of ignorance of tribalism and ethnicity—which is to say, the era before the coming of Islam. For the Koran insists upon social and ethnic equality among people who submitted to God despite tribal, linguistic, and phenotypical differences. As the Koran states, “the most honored among you is the most pious (49:13)”. For the secular circle, however, ethnicity is a shallow notion, void of any meaning except the representation of birth dictated by shared descent. The secularists view ethnicity as antithetical with present modern social structures of the state, and have, for awhile, predicted that rapid modernization will eventually wither away ethnic and tribal affiliations, considered survivals of an oppressive colonial past, and their replacement by class identity. A common thread among the two positions is
the fact that ethnicity is a foci of plenty of ideology to manipulate for the transformation of society (see also Eickelman and Piscatori 1997:99-107).

Ethnicity constitutes a political and social force, and this force is always changing to accommodate its dynamic social and cultural contexts. Despite the claims, for instance, of the unity of the Arab nation, although divided linguistically, culturally, and politically, Arab governments and most intellectuals still pay lip service to the idea that they are united by the language of the Koran and the cultural frames of Islam—all articulated in the Arabic language. To borrow a phrase from Bowles (1957:66), “a man [and a woman] must not be very Moslem”, but also Arab. Berber, and Haratine. Given the plurality of languages and socio-economic inequalities among ethnic groups in Morocco and the prevalent pan-Islamic/Arabic rhetoric of unity, ethnicity is best understood as something one talks about but rarely thinks of. Ethnic identity, in this context, is toujours en parler, jamais y penser, or, as Gellner (1981:95) articulates these dialectics of ethnic discourses, it is, “y penser et en parler un peu, mais pas trop.”

To make use of the distinction between the categorization process and political instrumentality of ethnic group formations, McGuire (1983) argues that influences of larger society are crucial in the formation processes of ethnic identities, and these outside influences, at the final analysis, may hinder or enhance the production of ethnic membership in the struggle for subsistence and market resources. Furthermore, as McGuire (1983) points out, Despres pays no attention to the conditions under which collective ethnic groups are possible, and fails to provide or predict the possible
outcomes of such organization. He also reminds us that attempts to manufacture ethnic communities are not always successful.

Because of the prevalent belief that ethnic production of identities is automatic, insufficient scholarly effort is invested to explore the failure of identity projects in front of outside political and economic forces (McGuire 1983:3, 15-19). Bringing these concerns back to the debate on ethnicity would allow us not only to ask why certain ethnic identities become important at particular historical periods but also why some indicators of cultural differentiation do not lead to the emergence of ethnic communities: how does ethnicity work and how is it tied to the control of resources in the Ziz Valley, what are the implications of ethnic action for the institutional management of the Ziz River communities, and how do these issues affect the system of social stratification, meaning the effect of role differentiation and categorization?

This discussion of ethnicity takes me to the third theme I consider, which is the essence or the senses of community in themselves. Ziz River farmers inhabit corporate village communities in which resources and places of worship are still held in common. In the nineteenth century, social theorists concerned with the explanation of rapid social change and the impact of the industrial revolution on the social structure concluded that in a society based on contract, an increasing importance is given to the rights and autonomy of the individual as against the community. Individualism as a doctrine of faith gains prominence over traditional views of the tribal and religious aspects of the community.
Furthermore, one is more likely to encounter the replacement of traditional elitism and nobility by an open-ended social environment in which social mobility is possible (a transition from *gemeinschaft* to *gesellschaft*). The exploitation of the low status groups by ethnic and legal mechanisms of exclusion is slowly undone by the market forces and the power of the cash nexus. A society based on economic classes and naked cash quickly eliminates its sacred and traditional infrastructure of values, only to see them re-defined within the framework of secular plurality (Tönnies 1957; Durkheim 1960).

In the peasant literature of the 1950s and 1960s, perhaps the most influential theoretical framework in the analysis of corporateness was articulated in Eric Wolf's thesis of the closed and open corporate community (Wolf 1967). Wolf analyzed the structural relationships between various types of peasant communities and the wider society in which peasants, as Kroeber said, (1948:284), "constitute part-societies with part-cultures." In his comparative article on peasant society, Wolf argues that the rise of corporate communities in Mesoamerica and Central Java are products of Spanish and Dutch colonialism while that of the Russian *mir* and the Chinese peasantry are "not an offspring of conquest as such, but rather of the dualization of society into a dominant sector and a dominated sector of native peasants" (1967:237). Wolf states that peasant communities crafted corporate institutions and rules exemplified in the forms of common property and distribution of wealth among the natives and denied access to outsiders as a corporate response to external forces and aggression while reducing the impact of
conflict within the community’s walls. This strategy, he argues, allowed peasant
corporate communities to survive and weather the effects of outside economic
exploitation.

While Wolf emphasized the economic aspect of open and closed peasant
corporate communities, Skinner believes that corporate communities open and close in a
direct but delayed response to economic cycles. He states that the economic cycles drive
the types of responses peasant communities adapt ranging from normative to economic
and finally coercive responses. By normative, he means the revival of local
particularism or peasant conservatism and resistance to outside intrusion. The economic
response takes the form of slowing economic activity, withdrawal from the market and
the shift from cash crops to subsistence foods, and the establishment of a “shared
poverty economy.” The coercive stage intensifies elements of the normative and
economic phases, but it is one in which absence of law and order prevail in the wider
society, and in this context communities reenforce their bonds and organize militarily to
defend the community against outsiders (1971:278-280). Hence, over the duration of an
entire economic cycle, peasant communities moved from open communities to closed
and back again in delayed reaction to the state economy.

Both models, Wolf’s and Skinner’s, pushed the frontier of anthropological
theorizing on peasantry. They saw peasant societies not as isolated primitive economies
but rather involved in complex exchanges with the outside world and its effects on the
making and unmaking of the peasant’s social and economic field of action. Despite the
soundness of these theoretical constructs, both models suffer a number of shortcomings that must be addressed if the tenets of corporateness are to be understood. Their focus is primarily on the economic relations between peasants and the state bureaucracy and elites while they assign the transformative influences of demography and ecology a residual space in their analysis.

While Wolf and Skinner privilege the impact of the external environment on peasant communities, Netting, relying on his work among the agropastoralists of the Swiss Alps, states that peasant corporateness is not the outcome of external influences and domination but rather a direct result of local environmental conditions and subsistence demands. Netting believes that corporateness is adaptation to land use systems dictated by verticality or altitude zonation and changes in population growth (1976; 1981).

Likewise, Park (1992) advances the thesis that the emergence of corporateness in recession agriculture along the Senegal River Valley is the outcome of pastoral adaptation to the chaotic climate of the Sahara and the Sahel. Because agricultural production varies directly in relation to the duration of rain, flood levels, and soil types, repartition of claims to property is performed on an annual basis. Instead of economic cycles and demographic pressure, the cyclical and chaotic climate of the Sahara produces a corporate community in which stratification is the operative element in the repartition of property, and in which people are added or sloughed off in concordance with the wet and dry years.
In these four theoretical approaches, Wolf and Skinner emphasize economic ties between local communities and the larger society whereas Netting and Park place importance on local ecological conditions. While these approaches are useful and explain some aspects of corporateness, these variables cannot be examined strictly as structural or ecological causes and must be understood as a historically specific development. Furthermore, these approaches, while balancing out each other’s deficiencies, have shortcomings that must be addressed if the rise of community and its control of resources is to be appropriately understood. First, these approaches do not pay sufficient attention to the role of ethnic variation in the economic foundation of resource control within and outside the community in question. Second, they ignore the effect of ethno-political changes emanating from the outside on re-arranging local resource control. Finally, they do not provide adequate explanation for the multi-directionality of change or lack of it, and the possible emergence of many senses of community within the same community in response to internal and external forces.

These concerns are the underlying themes of this study. I selected to investigate them in the villages of Zaouit Amelkis and Kerrandou along the Ziz Valley, the Province of Errachidia in Southeast Morocco, for three essential reasons. First, the Ziz Valley’s farmers continue to practice intensive irrigated farming in spite of the constraints of aridity, and their hyphenated integration into the national and international markets of production and labor. Second, Ziz farmers live in multi-ethnic villages with long-standing history of resource management within an ethnically stratified context.
Third, out-migration remittances have provided strategic ways for the re-arrangement of the valley's "old sense" of community as well as its institutional structures, and these factors have exacerbated conflict in recent years in the village communities. The Ziz Valley, therefore, provides the ideal environment to investigate the relationship between ethnicity and agricultural intensification, the coding role of ethnicity and social stratification in the control of resources, and the implications of remittances on the changing nature of the valley's villages social organization of the means of rendering farming productive and social cohesion possible on the edge of the Sahara Desert.

To avoid the homogeneous and inequality misconceptions associated with the research methods of community studies, as Sheridan (1988:xxii-xxiii) reminds us, my dissertation unites a rich and diverse body of data collected during fieldwork including ethnographic accounts, oral histories and colonial archival records, as well as my socio-economic and ecological findings based on a household questionnaire strategy.

Scholarship to date on the oases of southern Morocco overemphasizes a declining and stagnant socio-economic environment (Bellakhdar et al. 1992; Bencherifa and Hopp 1992; Jarir et al. 1993). There is a lack of systematic research at the household level and most work ignores the relationship between ethnicity and agricultural intensification and lacks problem-oriented analysis of social change. The low status ethnic group, the Haratine, have in recent years remitted significant funds from overseas migration and have begun to buy land and enter politics. These issues, in reality, merge with the agency of remittances in transforming traditional social relations of production at the
village level.

My historical and ethnographic research consists of: 1) the French colonial military and administrative organization of the valley; 2) village maintained records of land tenure by household and ethnicity never before collected; and 3) in-depth interviews with the elders of the valley regarding their remembrances of colonial, post-colonial, and recent events. I examine specifically the relationship between ethnicity, farm size and efficiency. Data collection for the thesis included questionnaires and field ethnography which focused on documenting household profiles and land tenure histories and describing ethnic variation in resource distribution and management strategies.

A sophisticated understanding of the present context requires an understanding of the historical background and thus I also examine: 1) the historical rise and fall of the traditional nobility of the Arabs and Berbers; 2) how a low status group, the Haratine, can rise peacefully and take advantage of a colonial opportunity that was not intended for them; and 3) how migration remittances have reshaped the land tenure profile allowing the Haratine to appropriate what is essentially a Berber/Arab cultural concept of *al-asi* or a sense of rootedness and belonging (being anchored in land: *al-asi*).

Assessment of the crucial historical development of the villages was made possible by the use of documentary records from the Colonial Archives in Paris as well as household histories and the extraordinarily rich village records of land tenure (*kunnash taqwim*) I collected.

My work provides a case study from which to critique the assumed direct
relationship between farm size and efficiency, an issue far more complex in the United States of America than generally thought (Strange 1988). The diverse ethnic makeup of the smallholder farming communities of the Ziz, correlating strongly with economic and ethnic forces, provides a strong test site of the standard hypothesis of this relationship which, in its simplest form, ignores critical ethno-political and historical variables.

My research advances scholarly understanding of the influence of ethnicity on agricultural intensification, and provides the basis for an important critique of the growing body of literature on the rise of corporate communities, common property (which neglects the possibilities of exploitative common property relationships), social mobility, small-scale farming, and other aspects of rural and peasant communities.

Furthermore, my research project contrasts with neoclassical, populist, and neo-Marxist paradigms, which center on the peasant/family farm as the unit of production and consumption, and employ limited family/peasant models contingent upon economic maximization and demographic developmental cycle. My focus on political ecology goes beyond this family-farm tradition. As my analysis reveals in detail, the Ziz Valley smallholder’s means of production are anchored in multiple political, ethnic, historical, and ecological relations of production. My project contributes to the broad study of social change and its impact on configurations of resource and power in the pre-Saharan communities of North Africa, and develops interdisciplinary research themes at the crossroads of the study of indigenous economic systems, political economy and ecology, colonialism, and post-colonialism.
The following study is divided into seven chapters plus an introduction and a conclusion. The chapters, in turn, further divide into three major rubrics, describing the geographical and ethno-historical aspects of the valley, investigating the ethnographic present of the Ziz's agrarian society, and testing of the relationship between ethnicity and agricultural intensification and examining the implications of recent socio-economic changes upon the remaking of the ethnic communities of the valley.

The first chapter lays out the geographical location of the fieldwork sites and spells out the cultural and ecological description of the Ziz Valley. The second chapter discusses the ecological and political history of the area, its impact on the present arrangement of human settlements, and situates historically the early trends of ethnic stratification in the study area. This period was characterized by insecurity (siba), the dominance of the Berbers (the power of the dagger) and the Arabs (the seeds of the Koran) over the Haratine (the sweat of the ploughman), leading to the articulation of what I call the ethnic mode of production based on Haratine labor and alienation from resources. The third chapter examines the traditional social organization of the villages or qSars, and how the pre-colonial villages' society and economy functioned. The fourth chapter describes the ethnographic present of the Ziz Valley's agrarian society. Here, the emphasis is on the analysis of household profiles and their location within the socio-economic and demographic trends of the valley and the entire region. The fifth chapter unfolds the calendar and rhythms of the farming system and the constraints of conflict over resources and the plight of a palm grove continuously ravaged by the al-
bayud fungus. The sixth chapter analyzes the relationship between ethnicity and agricultural production and interprets the findings. The seventh chapter takes us to the French Protectorate and post-Independence eras where ethnic relations will witness a huge transformation. This period saw the early planting of liberation seeds of Haratine’s seasonal and annual migration outside the walls of the village to escape local “oppression”, finally prompting over the years the rise of the Haratine’s political and economic power and changes in the conceptualization of the villages’ senses of community. Finally, the conclusion summarizes the implications and assessment of the findings for future socio-economic change research in ethnically diverse rural communities, and the contributions of my ethnographic case study to the growing body of literature on farming communities.
CHAPTER I
THE CULTURAL ECOLOGY OF THE ZIZ VALLEY

A Geographical Narrative of the Ziz Valley: Following the River in Search of Its People

To the south of the High Atlas Mountains, lies a region composed of high

elevation mountains of a southwester-southeastern slope riding over the Sillon Sud

Atlassique chain, itself sandwiched between the Anti-Atlas and the Hammada of Meski

and Guir. This formation incorporates a huge massif extending to Jbal Dayt between the

Ziz and Guir Basins and to the south of Kerrandou and Gourama. This mountainous

area spreads to Boudnib, Errachidia, and Goulmima (see Figure 1.1).

Beyond this area, the Hammada takes over, a stony desert punctuated by low

elevation buttes and mesas (garas), cut by ravines and sand dunes in the outskirts of the
towns of Erfoud and Boudenib. Vegetation is almost absent save a few meager and

overly grazed green thorny and cauliflower-like compact plants (Sala and al-Harmal).

Water holes used occasionally by nomads are limited to a few wells and springs more or

less dried up or choked by the blowing sand.

In the middle of these vast arid stretches, ideal for the production of mirages, life

is still and soundless, too wise to make any unexpected moves, only lightly infiltrated,
on and off, from the very far distance, by the intermittent echoes of passing trucks,
busses, and cars. The desert absorbs and carries its noise. These grand views,
historically crossroads of the Saharan camel caravan trade and battle grounds of jihad
against the French, are today the common property of the transhumant nomads and a few valley farmers who take the risk of cultivating the deserts water-holding pockets (*taqrart*) when early fall rain patterns of torrential flash floods assure them of a healthy weather forecast for the coming agricultural year. Aside from these scattered seasonal activities, life has sought refuge in the Ziz Valley.
Figure 1.1. Map of the Errachidia Province
The Ziz Valley is the richest and most populated area of the entire Province of Errachidia. Born on the southern slopes of the Jbal Ayash, the Ziz River meanders through a 200-kilometer ribbon of olive trees, date palms, cereals and alfalfa fields. The river is 30 to 60 meters in width and of variable depth, and runs from the highlands of Rich to the lowlands of Rissani. Along the river, a myriad of springs feeds its course. In Fall and Spring, the river is subject to violent flash floods causing great damage to property and fields. To the west of Rich, a geological cut leads to the High Atlas massif of year round snow-capped mountains and canyons of the upper Ziz valley, reaching an elevation of 3,000 meters around the Imilchil and Zawit Sidi Hamza Rural Districts. To the west of Errachidia, a flat plateau dotted by the Jbal Afardou takes the eye to the little valley of Tarda in the direction of Goulmima. In these isolated, sunny and solitary plateaus not far from the valley Berber nomads, retreating from the harsh mountainous climate, pitch tent and camp in winter.

The Ziz Valley is narrow in its upper stretches. The river runs through a twisting course of high walled gorges, the Foum Za`bal tunnel and El Kheng, characterized by a dangerous, unshouldered curvy blind drive, and paved road for 50 kilometers between the village of Kerrandou and Errachidia. Outside this strand of rock formation, the valley becomes larger and adobe qSars or villages, fields of alfalfa, barley, wheat, olive and date palm trees, and vegetable gardens rise to paint an impressionistic tableau of small-scale irrigated subsistence agriculture.

The inhabitants of the valley live in qSars. These structures are large squared
buildings built of adobe, sun baked *TTob* or earthen bricks and stone. Their walls reach
four to five meters in height, and are decorated by watch towers on the ramparts of the
qSar, needed in pre-colonial times to safeguard the inhabitants, the palm grove, and the
livestock against the pillage and violence of roaming marauding tribes of the wild Sahara
fringes. Behind the wall, an open square focuses on the mosque and its well, bordered
by earthen benches and small shops, constitutes the revolving door to the social and
architectural fabric of the village’s life. From this courtyard layout, a forked pattern of
covered and dark thoroughfares, pierced by shafts of light, cuts the qSar into narrow
alleys and cul-de-sacs. Forty years ago, isolated housing units would not be found
outside the wall, except for the stone and mud guard towers in the palm grove and on
the peaks of the surrounding mountains. In the past, these fortified qSars represented
almost self-sufficient little republics. Today, however, with independence’s perks of
security, the flows of remittances from migration, and population growth, villagers have
begun to development housing outside the wall, at the expense of the palm grove and the
collective land of the village.

To the south of Errachidia, the river excavates its course through the district of
Mdaghra (21 km in length) and continues to snake its way only toward its majestic
entrance into the magnificent valley and district of Aouffous (Rteb) between the qSars of
Zaouit Amelkis and Dwira, a distance of 35 kilometers. At sunset during winter, the
sun slowly throws its last tired golden rays on the palm grove and the qSar producing a
spectrum of shades. The view is extraordinary and captivating: elderly men wrapped in
their white and black checkered baggy jelabas and white, reddish and black wool burnooses follow the setting sun to the middle of the mountain. The red and the black colors reflected off the qSar’s adobe walls gently interweave with the greens and whites emanating from the palm grove and the river; and the rays of the sun permeate the blue layer of cooking smoke celebrating the end of yet another full day in these Saharan solitudes. A place where time is slow and silent, and money is discussed in secrecy and separately from time. The sun goes down only to be replaced with a huge moon rising behind the Ougnat Mountains. Now it is getting chilly and small contained bonfires erupt here and there and attract the elderly band who had followed the sun. The moon begins making its appearance, spreads its light and keeps mounting in one of the bluest skies ever, crowded with shining and sometimes shooting stars and promises the deliverance of frost and a long night.

After the 'icha' or dinner prayer, everybody is home around the kanun (hearth) enjoying cups of absinth or verbena tea to warm their hearts, clearing their minds, to activate blood circulation in cold winter nights, followed by the female labored Berber plat de resistance of couscous (imansi), crowned with a bundle of bright red carrots and white turnips freshly plucked from the fields that same afternoon. At the same time, a qaraf of butter milk (aghu) is passed around to smooth the swallowing of couscous balls and add flavor to a routine supper diet. Afterwards, women clear the table and the ambiance is set for the rehashing and reinterpretation of local news and gossip while squeezing the last drops from the verbena pot. Finally, story telling takes the front
burner as the red blazing coals turn slowly into ashes composted later to fortify green manure in the palmeraie. The household retires to bed to get reenergized to face another day in the village the next morning.

By ten o'clock at night, not a soul is circulating in the empty and cold streets. Silence casts its hegemonic blanket and regains every inch of this moon-lit valley community, where you can spot a needle, as the locals love to express the power of God’s light. Night noises of crackling wood and moving things are attributed to the power of silence and bands of *jnun* (spirits) roaming and laboring at night: irrigating fields and going about their business as do humans by day. After all, “God has created both the *ins* (man) and *jin* (spirit) to care for his beautiful design of the earth and the skies”, they say in a starry-eyed fashion. Accordingly, the community never sleeps when humans rest; the *jnun* take over and run the community in a silent and invisible manner. The non-initiated and those more unfamiliar with the *jnun* sense of invisible territoriality are advised to read and cite Koranic verses to drive them off when accidently splashing boiling water on the ground or intruding upon their space. After the mid-afternoon prayer (*al-`aSar*), a particulary dangerous time, it is strongly recommended that one throw seven stones into the river chanting, “*jnun* leave and angels enter,” before swimming or crossing.

Stories are told, and passed on, of villagers’ accidental intrusion upon *jnun* territory resulting in them being possessed and “hit and invaded by the *jnun*”, a situation where one’s physical and mental functions are colonized. One’s fate is in the hands of
the *jin*. It is an ethno-medical condition that French trained medical doctors cannot treat, the locals believe. A cast of *Tolbas* (rural Koranic scholars), traditional healers, and witchcraft experts collaborates for months to isolate the *jin* from the body. Sights of *jin* fighting with fire flames in the palm grove reenforce mutual respect between the two creatures of God. Open, wild, and unattended fields are not uncommon not because of litigation but rather due to the belief that these uncultivated spaces are inhabited by *jin* and thus should be avoided: another limiting factor imposed on production in an area where land is scarce and the environment is hostile and precarious.

A few young adults, single or divorced, however, would go out to the palm grove to gather wood and make a bonfire (*al-fguira*). Once the fire ignites and everybody has dug a seating spot out of the shifting windy smoke path, one or two of the *moqSirin* (people who shorten the night), in a settled and random fashion, would pull out their long pipes and small plastic bags of *kif* (illicit drug), fill the pipes and pass them right and left. Then, the gathering turns into a subtly organized smoking exchange because “filling and smoking your own corn, as *kif* is labeled, is not as fulfilling and satisfying as smoking from somebody else’s hand,” some say in a slow voice. An hour later or so, the fire is red hot and most of the *moqSirin* are wide-awake and talkative: heroic stories of villagers’ seasonal migration to Meknes, Tangier, Oujda, Casablanca, and El Ayun construction sites and formidable tales of immigrants’ life, courage, and encounters with the Christians in France are blurred by the cacophonous transistor radio news reports and music fanned by the Rabat, Algiers, and French short wave stations.
Conversation and laughter smoke their way to the skies. The fading campfire draws its winter worshipers closer and closer. Soon, one after the other, the group disbands with understated goodbyes, underlined by body gestures, understood among the comrades of late night society, born around the campfire and nourished by solitude, unemployment, and boredom, with a promise that “we shall do it again tomorrow night.” “Loud, rambunctious speech is the food of the foolish and sober, and silence and gesture is the mother of wisdom and sign of the free thinker. We choose silence because in it we find a remedy to our routine lives,” one of the late night participants uttered in a sad voice. Sheltered valley communities with both feet deep in the seventeenth century and a head riddled by the twentieth century’s rapidly changing traditional order sleep and wake up disconnected from the passing world.

To the north of Erfoud, the valley enlarges: the river enters al-M`aDiD and Tizimi palm groves, respectively. The dry belt separating Rtab from Erfoud forms the Irdi plateau, an area full of sandy hills. In the middle of Irdi a natural spring shoots salinized water high in the air, creating green and brown grasses in the environs. The spring is called `in al-`aTi, the spring of the Giver, God. The Ziz River continues its journey to the south where it runs parallel to the Ghris River coming from the west. At this point, the Ziz arrives at the Tafilalet plain. The Tafilalet is the most important palm grove of the region from which southeast Morocco has historically taken its name. The region is pear-shaped and irregular with a north-south axis of approximately 30 kilometers and an east-west axis of twenty kilometers. The entire region is an alluvial
plain, irrigated by the Ziz and Ghris Rivers. To the south of the Tafilalet plain a salinized sheet (*barchbakh*) covers the area making vegetation growth impossible. The *barchbakh* is caused by the evaporation of a highly salinized shallow water table reaching thirteen grams and higher of salt per liter of water (Personal Communication, Dr. Charles Stockton 1991).

The lower valley of Ziz is characterized by the *Dayas* (ponds) around Merzouguia at the foot of the Erg Chebbi, a huge composite of linear golden sand dunes, 100 to 150 meters high and occupying an area no larger than 100 km² overlooking a soft flat soil area (breaking up under one’s feet) and covered by a sheet of blackened rocks and tiny stones called the Reg. The sand dunes are a tourist attraction for adventurers who thirst for the ultimate experience of capturing a glimpse and a snapshot of the sun rising and throwing its golden rays on the dunes and the vast space beyond. The dunes have also lured many Moroccans, especially those who work overseas and live in cold climates and suffer from arthritis, as health spas. They come to get “buried in the sand,” during the hot months of July and August, in the hope that their “uncured and diagnosed arthritis disease will be sweated away and dropped in the sand”; and many have been cured and others still keep coming in search of the cure—so they say. The locals have capitalized on these activities, and a plethora of Ait Khabbash inns and cafés, advertised on metal pointing signs along a labyrinth of roads before the Erg, have been established to cater to the needs and desires of the sick and the adventurer alike. The spectacular sand views, camels, recreated blue men in Tuareg attire, and *talkhikht* or the “sand
baths,” the locals, particularly the youth, have relied on tourism, and the sale of fossils and gems sought by tourists and prospectors for a highly unstable and meager income. Merzouguia is home to the Ait Khabbash nomads and former slaves who settled down to build “four walls and a hole” in the late forties. The settlement pattern is scattered, a cluster of housing here and there, and the layout is not walled. “People, when they quit their tents because of drought, or, because, some were expelled and stripped of their assets by the Algerians and their “razias” or raids in the seventies, they had to make do wherever their head and feet found tranquillity; some live on the east side of the canal or fields, and others on the west, I call this place East and West Germany,” a retired and old soldier conceded. The nomadic characteristics are still an important aspect of life—there is still herding in the vicinity and house-fronts and courtyards are filled with mounds of dried wood roots harvested from the denuded surroundings, ramadas covered by dried thorny bush under which women socialize and work wool, images and smells more fitting of a nomadic tent than a settled housing unit.

The landscape is wondrous in March and April, particularly, when the Daya of Merzouguia, tifart n’ighDaD in Berber, is replenished by flood waters of the Ziz: a cheerful and flickering island of golden fields of wheat in a Saharan sea oscillating faithfully in accordance with the changing direction of the blowing hot wind and the chirping and darting of various types of birds. Beyond this Daya and its belt of sandy loam soil lies Khamliya and Taouz, a Saharan space, celebrated in the French colonial archives, reserved for the brave semi-nomads wrestling a living from a harsh and hostile
environment. The Ziz continues its way through its dry bed drifting into the Saharan wastes, whose primary function at this point is to channel flood waters. The Ziz finally meets the Ghris River a few kilometers north of Ramlia only to depart in unison to flow into the Daoura River in the heart of the Qam-Qam Hammada. The Ziz drains approximately 14,125 km², a watershed with an average altitude of about 1,100 meters. Over one million date palms and 600 thousand olive trees mark the twisting Ziz Valley as it bisects the province of Errachidia. The province encompasses roughly ten percent of Morocco (Ilahiane et al. 1991).

Climate: Dry, Hot, Wet, and Windy

The Ziz Valley study region is part of the vast and intimidating pre-Sahara. Although the harsh environment south of the High Atlas Mountains does not prohibit human habitation, the region is quite arid. Along with diminishing topographic relief and elevation from north to south, average annual precipitation decreases approximately 50 mm with every 100 meters of descent. About 250 mm fall in an average of 70 days on the highest areas; whereas fewer than 25 days of precipitation produce less than 50 mm in the far south. Dry farming is impossible in most years throughout Errachidia Province. Approximately 80 percent of the region’s precipitation, mostly rain, accumulates during intense autumn (September-December) and spring (February- May) storms (Ilahiane et al. 1991).

Temperatures vary from -5° C to 40° C, with an annual average daytime high of 20° C. The typical frost-free growing season begins in early March and continues well
into November. Hot *shargui* winds blow out of the Sahara from the east between March and May, and scorching southwesterly *sirocco* winds bring clouds of dust and sand during the months of September and October. These winds intensify evapotranspiration and can cause widespread crop damage, especially to date and olive groves. Annual potential pan evaporation rates in the region are about 1,280 mm on cultivated soils and 834 mm on undisturbed lands (Ilahiane et al. 1991).

Climatic factors have an impact on crop productivity throughout the study region. In 1979/80 (the agricultural year begins in the fall), a good year in the Tafilalet Plain, about 83 percent of the arable land was cultivated; the following year, 1980/81, only about 43 percent of Tafilalet lands were under crops. In the middle Ziz Valley, with its many reliable springs, farmers were able to irrigate about 81 percent of their arable land during both years (ORMVAT 1983:24-25).

**Soils: Sweet, Beautiful, Sandy, Coarse, Salty, and Unsalty**

Soil formation in the Ziz Valley is influenced by arid conditions. Nevertheless, Ziz flood waters have deposited thick, fertile sediments. As the Ziz River and other major streams flow out of the mountains and become less constricted, their flood plains become broader, and arable alluvial deposits become deeper. ORMVAT (the regional authority for agricultural development) soils scientists point out that Ziz Valley farmers are attracted by the large expanses of sandy loam up to ten meters deep. More water-retentive, loamy clay is also widely cultivated. They note that cumulative salinization is a chronic problem. More than 50 percent of Ziz-irrigated lands have lower yields due to
salt accumulation. Approximately twenty percent of the arable areas south of Erfoud and the Tafilalet plain grow only salt-tolerant date palms due to the high salt content of the soils. For instance, farmers in Zawit al Ma`ti, a village ten kilometers southwest of Rissani, obtain cash by selling salt collected from evaporation pans that trap the hyper-saline waters draining from the tail of the system.

An earlier study (ORMVAT 1963) described four classes of soils in the Ziz Valley based on the detailed soil and geological maps of the area. Ziz farmers employ a separate, more practical soil and land use taxonomy that includes six classes: (1) lHlu (sweet) soils are a mixture of sand and deposits of silt, relatively deep, rich in nutrients and fertile, and widely cultivated due to their ease of tillage and relative water storage potential, irrigated once every four to six days; (2) l’aqad (reddish-brown) soils are similar to lHlu but are compact and less rocky and drought resistant; they are considered to be the most productive soils and are sought enthusiastically by farmers. They take less fertilizer than the other soils and “are productive no matter how stingy one gets with the application of expensive fertilizer and manure and require less labor attention,” a farmer in the Ziz Valley said. L’aqad is irrigated once every fifteen to twenty days and thus is superior for agricultural uses; (3) mramel, sandy soils, dominate the Ziz banks but are less desirable because of their need for more frequent irrigation— at least once every four days; (4) Harsh (angular gravel) soils dominate the unworked foot of mountains and areas of the Oued’s banks and floodplain (tsuHid). The Harsh fields are not as productive as l’aqad or lHlu. They are drought prone, and in order for them to
be productive large amounts of sand, silt, and green manure must be added; (5) ImaIH (salty) soils are not desired by most farmers, but are tolerated. They are sites of fields filled with pans of salt, and to render them productive farmers are obliged to practice pre-irrigation to flush the salt deposits and turn the soil to bathe in the sun every year before the planting season; (6) lmsus (unsalty) soils are the least desired by farmers. They occupy waterlogged areas (ansis) and are subject to too much shade cast by the towering olive and palm trees, making any agricultural activity unproductive.

**Hydrology and Irrigation Infrastructure: A Matter of Water Quality**

Water in the study area is supplied by flood waters, springs, wells, khottarat (qanats), and the Hassan Addakhil storage reservoir (capacity = 380,000,000 m³). The river drainage basin supplies the reservoir with an annual average input of 164,000,000 m³. Table 1.1 summarizes some quantitative data for these sources. Water quality is as important a consideration as water quantity in the Ziz Valley. Salinity has already been mentioned as an important constraint in the lower valley, but farmers more recently also express concern over the amount of sewage, garbage, and agrochemicals in the river. As will be discussed below, the decreased load of fertile silt due to the new storage reservoir is widely perceived as an important negative side-effect of the new system (ANAFID 1990, 1991; ORMVAT 1989).
Table 1.1 Ziz Valley Water Supply

<table>
<thead>
<tr>
<th>Source</th>
<th>Number</th>
<th>Output</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oued Ziz via Hassan Addakhil</td>
<td>na</td>
<td>141.4 **</td>
<td>Controls Ziz flow, supplies “Grande Hydraulique” network</td>
</tr>
<tr>
<td>Meski Spring &amp; Resurgences</td>
<td>na</td>
<td>24.6 **</td>
<td></td>
</tr>
<tr>
<td>Artesian wells</td>
<td>na</td>
<td>3.6 **</td>
<td></td>
</tr>
<tr>
<td>Private Wells</td>
<td>5000</td>
<td>na</td>
<td></td>
</tr>
<tr>
<td>ORMVAT Wells</td>
<td>7</td>
<td>9,964 ml</td>
<td>492 ha irrigated</td>
</tr>
<tr>
<td>Cooperative Pump stations</td>
<td>60</td>
<td>460 l/s</td>
<td></td>
</tr>
<tr>
<td>Khettarat (qanats)</td>
<td>376</td>
<td>0.9</td>
<td>Avg. flow = 30 l/s; In 1990 only 144 operating</td>
</tr>
<tr>
<td>All wells &amp;</td>
<td>na</td>
<td>24.0 **</td>
<td>Less common since 1971 below modern dam</td>
</tr>
<tr>
<td>Floodwater</td>
<td>na</td>
<td>24.0 **</td>
<td></td>
</tr>
<tr>
<td>Oued Ghris via Moulay Brahim</td>
<td>na</td>
<td>95.0 **</td>
<td>17 km Laghrissia canal to Tafilalet Plain</td>
</tr>
<tr>
<td>Diversion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>na</td>
<td>292.96 **</td>
<td></td>
</tr>
</tbody>
</table>

The Hassan Addakhil Dam, completed in 1971, was a response to the November 1965 flood of 5,000 m$^3$/s that disabled most bridges below Rich and caused widespread field and crop losses. The valley's farmers also remember major destructive floods in 1925 and 1949. The dam demonstrated its value in 1989 and 1994 by capturing floods that knocked out roads and caused other damage above the reservoir in the Kheng and Guers Tialaline region. In addition to floods, droughts, sandstorms, salinization, and sand dune encroachment, the date palm fungus known as *al-bayud* locusts and other pests are important limiting factors in the region's agriculture.

In addition to the Hassan Addakhil storage dam and thirteen associated diversion structures, numerous traditional dams (about 40) capture Ziz River water for irrigation perimeters (see Table 1.2).

A primary canal carrying 300 l/s (1 liter = 0.001 m$^3$) flows on the west bank of the Ziz River to irrigate the area extending from the foot of the dam to qSar Targa (the "New Perimeter"). The east bank primarily irrigates a perimeter extending to Meski. The Meski spring supplies ten to fifteen million m$^3$ annually to lands controlled by the qSars' irrigation communities of Meski, Bousaid, Zawit Amelkis, Jramna, and Ait Chaker. In response to the severe drought of 1979-1986, ORMVAT established seventeen additional groundwater pumping stations to supplement the dwindling river flows and built and refurbished the Lahmida and Laghrissia canals to transfer flood waters from the Ghris River to the Ziz to irrigate the Tafilalet plain.
### Table 1.2 Irrigation Perimeters in the Ziz Valley

<table>
<thead>
<tr>
<th>Name</th>
<th>Size (ha)</th>
<th>Canal Length</th>
<th>Other Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>*New Perimeter</td>
<td>1,000</td>
<td>54km</td>
<td>800 l/s first supplied in 1971</td>
</tr>
<tr>
<td>*Modern Ziz</td>
<td>4,000</td>
<td>108km</td>
<td>Refurbished for 1971 reopening</td>
</tr>
<tr>
<td>*Tafilalet</td>
<td>21,000</td>
<td>208km</td>
<td>Refurbished for 1971 reopening</td>
</tr>
<tr>
<td>*Merzougua</td>
<td>1,100</td>
<td>na</td>
<td>Refurbished for 1973 reopening</td>
</tr>
<tr>
<td><strong>Large Systems</strong></td>
<td><strong>Total = 29,100</strong></td>
<td><strong>&gt; 370 km</strong></td>
<td>Hassan Addakhil canals serve 55.8% of the irrigated land in Errachidia Province</td>
</tr>
<tr>
<td><strong>Small &amp; Medium Systems</strong></td>
<td><strong>Total = 15,500</strong></td>
<td></td>
<td>31.0% of irrigated land in Errachidia</td>
</tr>
<tr>
<td>Jorf</td>
<td>260</td>
<td>na</td>
<td>Served by extensive Khottarat systems</td>
</tr>
<tr>
<td><strong>Traditional Systems</strong></td>
<td><strong>Total = 6,600</strong></td>
<td></td>
<td>13.2% of irrigated land in Errachidia</td>
</tr>
</tbody>
</table>

* "Grande Hydraulique" or Large Systems based on Hassan Addakhil canals

# "Petite et Moyenne Hydraulique" perimeters refurbished (old canals lined, new canals added) as part of the Hassan Addakhil Project

The reasons behind the construction of the dam are two fold: to put an end to the catastrophic floods that devastated the valley and to regularize and store water for the expansion and intensification of agricultural production in the lower end of the valley. However, as was observed in 1993, the dam has not stopped all the floods, particularly in the areas above and below the dam. These recent floods caused heavy damage to fields, trees, and houses. Though flash floods threaten the upper reaches of the valley, they are, however, critical to agricultural production of the palm groves in the lower parts, in particular recession agriculture.

The second motive for the justification of the dam is to store water for dry years. The dam was designed to hold enough water to supply farmers for three years. The dam was designed for temperate zones that do not have the extreme climates of the desert. In fact, the agriculture of the area depends on floods to feed the khoTTarat or qanats irrigation system. There is not enough water to store since only one in every six years is a wet year. Storing water, no matter how little there is, deprives farmers of its use and creates conflict between them and the ORMVAT officials responsible for the management of the dam, especially during dry years. The dam with its concrete-coated canals irrigates the New Perimeter or Settlement, the Middle Ziz Valley, and the Tafilalt Plain.

The construction of the dam inundated ten qSars in the lower Kheng, seven kilometers north of Errachidia. The inhabitants of these qSars were resettled in the New Perimeter or settlement on the left bank of the Ziz River, twelve kilometers from the
Despite the psychological impact of relocation, the settlement has been positive for the relocatees. Before the settlement, 2,325 households cultivated 290 hectares, an average of 2,100 square meters per household; 32 percent of these households were landless. The intensification of agriculture was limited by the small size fragmentation of the fields and too much shade provided by trees and high mountains bordering the strip of fields. However, the new relocation space is 1,000 hectares with planted trees and equipped with modern irrigation canals. Relocation benefitted the landless, and the average consolidated farm per household tripled in size. Farmers at the tail end of the valley concede that the winners of the dam are the people of the new perimeter. They were provided with new qSars and the landless became landowners. The relocatees are envied by other farmers for the attention they get from the ORMVAT and their access to assured irrigation water no matter what the conditions of the climate are.

The Middle Ziz Valley covers 4,000 hectares of cultivated land. Its population of 70,000 people sheltered in 87 qSars practices subsistence farming and livestock. Date palms and olive trees dominate the landscape. The lower part of the Middle Ziz Valley's irrigation is based on floods captured by traditional diversion dams and the Meski spring input. It is in this part, 2,000 hectares, where agricultural intensification is important, as opposed to the upper part below the dam dominated by olive production. The introduction of the dam and the extension of its canals did not improve the lot of these farmers. Actually, “each time they open the dam, we lose our valuable trees and fields. The dam comes like a managed flood and with such force its carries our property
to the Tafilalt plain,” a farmer from the tail end of the river ironically laughs. “Its cold water burns whatever happened to be sprouting off the ground at the time of water release. When the dam’s cold water invades a warm soil it strangles the plants.” Farmers complain.

The flood from the dam usually causes major damage to the fields and the traditional diversion dams. Since the river lacks protection measures against floods, the diversion dams and fields are usually destroyed. The community is forced to raise labor to repair these damages, with no help from the officials of the dam, each time the dam releases water. Young kids, who enjoy fishing, report that water from the dam blinds the river’s fish and “we do not need to use fishing polls or bait to catch it. Fish is all over the place and blind. We catch it with our hands, no need for waiting. There is something wrong and the fish are ill and we do not bring it home to eat.”

The Tafilalt Plain has suffered the most from the introduction of the dam. The new infrastructure replaced the traditional irrigation system based on floods and on animal driven means of drawing water, such as aghrur. The dam deprives the plain of flash floods that are critical to most of its flood recession agriculture. For instance, in 1975, Toutain (1982) estimated that the Tafilalt palm grove lost 50 millions cubic meters of water from one single flash flood.

Customary rules of water distribution lost most of their value and use after the state began managing and distributing water. The customary rules provided working solutions for the distribution of flood waters and irrigation techniques. After the dam
was built, these indigenous techniques and strategies were replaced by methods promulgated by water and extension agents who are highly technical and hostile to the traditional ways of doing things. The transition to a modern system has been expressed in acts of hostility of farmers towards the ORMVAT agents and infrastructure. Farmers destroyed canals and channeled water into traditional canals to protest the rigid management of the ORMVAT officials.

The water table of the khoTTarat or qanats has also been affected by the dam. Since 1971, farmers say they have had to increase the depth of their wells year after year. Zerhouni’s (1980) reconstruction of the piezometry of the water table in the palm grove of the Ziz between 1971 and 1978 shows a significant trend of deeper and deeper wells after the dam was put in place. This drive to tap underground fresh water is nourished by the belief that “water exists in deep places that erupt from rivers running underground.” In fact, unlike the khoTTarat on the right bank of the undammed Ghris River the khoTTarat still function despite the fluctuation of water volume. Those on the Ziz River, however, have either been abandoned or are slowly drying up.

Until 1971, the Tafilalt Plain for centuries had depended on floods for irrigation agriculture; 77 percent of these floods recharged the water table. This recharge irrigates the palm grove and feeds the water table upon which the population depends for potable water. The palm grove of the plain depended on an average of eleven random floods per year. Ruhard (1977), for example, estimates the average annual flood input in dry years at 120 million m$^3$ and in humid years at 250 million m$^3$. Margat (1955 and 1958)
estimated the annual flood input at 150 million m$^3$ over a period of five years from 1954 to 1959. Today, the plain gets its water from three dam releases per year. These releases flow through the Ziz River until they reach the plain, where they are channeled into the cemented canals. These releases' volume and duration vary from year to year. For the period of 1971 to 1978, for instance, the palm grove received a volume of 350 million m$^3$, of which 30 percent was lost to infiltration and unauthorized intakes. From this seven year period, the annual average was 50 million m$^3$, a 33 percent decrease from the pre-dam era. The average annual per hectare is 3,094 m$^3$, three times lower than what it was before the coming of the dam (Zerhouni 1981:23).

The progressive depletion of the water table is dismissed by the officials as the result of the propagation of private pumping stations below the dam. Though the number of private wells and cooperative pump stations have increased largely in response to the 1979-1986 severe drought, the overexploitation of the water table resides in the irreversible depletion and dessication of water resources caused by the introduction of the dam.

Faced with drought and deprived of flood waters, farmers started introducing pumping stations to minimize the effects of drought and the lessened water flow. Under these conditions, the aghrur irrigation method based on animal traction was abandoned since the level of the water table was decreasing. The sustainability and viability of the family farm could only be maintained by an engine-driven pump to tap the deeper water. The sustainability of the aghrur method resides in the fact that poor farmers could afford
it and its slow paced tapping of water. In 1980-81, the Errachidia Province counted only 900 pumping stations. In 1990, however, the number of private pumping stations jumped to 5,000 private wells, seven ORMVAT wells, and 60 cooperative pump stations. The average output of a private pump well is 3.8 l/s., 9.5 times the intake of the aghrur method (ANAFID 1990 and 1991; ORMVAT 1989).

When asked about the impact of the dam, farmers in different parts of the valley have different answers. The upper valley farmers, particularly those of the New Perimeter, are satisfied with the new order of things, though some complain of the expensive fertilizer and insecticides they now have to buy. In the middle of the valley, as mentioned above, farmers can do without the dam but have a couple of things to complain about: cold water from the dam “burns” and “kills” their plants and the dam flood releases damage their fields and trees. Inputs of petroleum-based chemical fertilizers and pesticides have increased eleven fold since the construction of the dam. Some farmers noted that water from the modern reservoir “is like gasoline” compared to the flood waters before the dam, which once deposited fertile silt on fields.

The Tafilalt Plain has been severely impacted by the dam. Similar to the concerns of the Middle Ziz Valley, farmers in the plain have traditionally practiced deep-irrigation of fields, 30-40 cm deep or “until water is above one’s ankles.” This method is suitable to the desert’s unpredictable rain fall and has been fixed at ten cm for each parcel by the ORMVAT agents. Today, increasing inputs of both fertilizer and water are necessary to achieve the same yields because of declining soil fertility. Wheat
crops are now irrigated at least twice a month, or five to seven irrigations per crop. Before the dam, crops were only irrigated every 20-25 days, or two to three irrigations per crop. Today, cropping intensity has increased in the upper and middle parts of the irrigation system, while agricultural efficiency has decreased. Crop production based on flood recession farming in the Tafilalet Plain and the Merzouga area is unpredictable, but more efficient in terms of energy returns because no fertilizer and little labor are necessary.

The benefits of the dam, though they have transformed the lives of the farmers and the valley's ecology, are numerous—particularly flood control. The 1989 floods were devastating and of a greater magnitude than those of 1965 that prompted the construction of the dam. Water officials, and not farmers, stress the fact that without the dam the entire valley and its people would have been swept to the Saharan wastes. Despite the old grandfather's theories of moaning and critical assessments of the dam and its management, some farmers, especially those at the tail end whose khoTTarat dried, are especially grateful for the free water since they have no other alternatives. Above all, the dam's positive effects reside in the program of potable water for the whole valley, with water from the reservoir piped directly to the communal fountains in each qSar.

Examined more critically, however, the construction of the dam expresses the short-sightedness of the policies of building dams as a quick administrative fix in the short term that ignores the long-term toll on the ecology of traditional agriculture. The
policies have also implanted a bureaucratic structure of water management, and a social welfare institution whose motives coincide with anchoring the state’s presence in a border area not far from a defiant Algeria.

**Demography: A Rapid Trend of Urbanization**

According to the 1982 census, the population of Errachidia Province was 422,869 divided into 82 percent rural and eighteen percent urban (Ministère du Plan 1982). The preliminary results of the 1994 census indicate a population of 522,017 of which 42 percent are urban and 58 percent rural. These urbanization rates when compared with 5.6 percent in 1960 and 9.25 percent in 1971 are quite phenomenal (Ministère du Plan 1995). These indicators of a rapid population rate and urbanization are the product of improved health services over the decades, communications and a hostile rural environment in which on average a rainy year is followed by five to seven years of drought. The 1994 census results are very indicative of a sharp increase in the rate of urbanization due mainly to the continuous emptying of the rural communities and the sedentarization process of nomads. The urban dweller percentage more than doubled over the twelve year period. This trend is largely due to the severe drought of 1979-1986 period. This drought has obliged many farmers to auction off a sizeable portion of valued trees and land. A great number of pastoralists liquidated their herds of camels, sheep, and goats to seek refuge in towns where life is more predictable and bearable—with running water, electricity, satellite dishes, hospitals, and above all, the cultural luxury of going to the Central Market to shop at any time of the day. The towns of
Errachidia, Rich, Erfoud, and Goulmima typify rising urban communities where the phenomenon of “city lights” has had the most powerful impact on pastoral and rural populations alike (see below Chapter III).

Most of these new urban settlers invested their assets in real estate and commerce, generating a comfortable standard of living compared to the rural world they have left behind--a miserable, unpredictable, everyday life of back breaking agriculture. Remittances have created new wealth. Government officials and the traditional elite of notables have carved themselves a real estate market niche at the provincial level, leading to an instant explosion of semi-planned and sprawling concrete housing, and highly inflated speculation. The driving effect of jealousy, in these face-to-face and pedestrian communities has also mobilized blood ties and neighbors from far afield to do whatever it takes to build a two-storey house, “bHalna bHal nas (just like other people),” to rent out the lower floor and reside in the second, or, if money and bank credit connections allow, rent out a whole building with a series of shops and garage space. Others, especially sedentary Berbers and Arabs who have been besieged and irritated by the rise of Black (Haratine) political and economic power are considering selling their qSar assets and investing them in the urban real estate market and commerce ventures.

This dynamic urbanization has been characterized by a very high rate of unemployed and under-employed. With the rate hovering around 45 percent or higher, officials believe this portends of great social problems, leading to the emptying of the
qSars and the plateaus and fueling the collapse of subsistence agriculture, thus compounding an already vulnerable and unstable regional food balance. This food imbalance was made clear by the sharp increase in vegetable prices in the agricultural year of 1993-1994 due to one of the longest seasonal droughts that Morocco has witnessed in over a century. It did not rain in this region at all between the period stretching from September to March, and when it finally rained, it was too late to save the dried plains. Rainfed agriculture certainly was a failure: what little production there was was used to feed the threatened livestock. A kilogram of red onions that usually would cost no more than two dirhams reached eighteen dirhams. This recent astronomical increase in food prices across the board has made some people rethink their urban situation. Some are thinking about money-generating activities such as truck gardening and livestock raising. The weekly market was described as jahanama or hell, “hellish prices and cheap onions have overnight turned into items of luxury ranking up there with tender lamb meat and bananas,” shoppers angrily testify. Some of the new urban groups have been inspired by the rising market prices to launch livestock and gardening ventures with associates in the valley “because the city is growing and they will always need somebody to feed them, provide them with onions, carrots, turnips, and meat, and in times like this year, we can make a fortune and compensate for the risky and hard years,” they shamelessly say.

The structure of the population in 1994 shows that 53.3 percent is under the age of twenty, indicating the steady growth of this age group-- increasing from 44.3 percent
in 1960 to 46.2 percent in 1971, and to 49.2 percent in 1982. This rapid progression demonstrates the likelihood of greater urban influxes since urban migration attracts this non-specialized work force and those seeking formal schooling and vocational training. While 60 percent of the province's population is engaged in full and part-time farming, the rest is involved in construction, government, commerce and services (Ministère du Plan 1995).

The Agricultural Base: Dates, Olives, Cereals, Alfalfa, and Livestock

In this vast arid territory population density per square kilometer for the province is insignificant since the population is concentrated along the river's edge: along watercourses 25 to 30 inhabitants per km² and 5.1 per uncultivated hectare. The potential area conducive for the practice of farming is 43.069 hectares, comprised of 45,000 farming household units of an average of 0.6 hectare per unit (ORMVAT 1989).

Agricultural resources are concentrated mainly in cereal cultivation, arboriculture, and livestock. In the upper Ziz Valley, covering the Kheng, Guers Tialaline, and Rich, cereals come first after olives, while in the lower valley they come second to date palm cultivation. The cultivated modern varieties of wheat distributed by the ORMVAT are supplemented by varieties native to the Ziz (farTas, shguiira, and bum'iz). Barley is cultivated in the marginal areas of the Middle Ziz Valley and the Tafilalet Plain where soils are poor due to their salt content and high resistance to water stress. Forests cover an area no larger than 2,500 hectares, restricted to very few islands of oak trees in the High Atlas Mountains. On the provincial level, the farming
system in 1993-94 is repartitioned as follows: cereals occupying 60 percent of the farming area, barley fourteen percent, fava beans four percent, corn nine percent, alfalfa ten percent, vegetable gardens two percent, and henna and cumin one percent (ORMVAT 1991).

Arboriculture plays a crucial role in the economic development and ecological survival of the area, accounting on average for 60 percent of the household budgets. Date palms and olive trees provide a microclimate different than the natural arid climate—creating greater humidity and lower temperatures due to the vegetation cover and the practice of irrigation. In this ecosystem, date palms and olive trees play the role of sun screeners and windbreakers that allow the cultivation of cereals, vegetables, and alfalfa within the shaded and protected areas. Around 1,200,000 date palms cover the entire valley from Errachidia to Rissani. The date palm is the backbone of the regional economy, the basis for human nutrition and livestock feed, as well as the most important economic activity for farmers. Well adapted to the local ecology, yet sensitive to rain during pollination and ripening, date palms, however, tolerate only low levels of salinization. The Tafilalet is world-renowned for its date varieties, especially majhul and boufguous; unfortunately these high priced and culturally valued varieties have been the favorite targets of the disease of al-bayud that has been ravaging the palm grove for over a century.

The Office Régional de Mise en Valeur Agricole du Tafilalet (ORMVAT), a regional arm of the Ministry of Agriculture and Agrarian Reform (MARA), in
collaboration with national and international research centers, has been trying to find a cure for the fungae disease, but so far the only solution they have reached is provision of *al-bayud* resistant date varieties to regenerate the palm grove and contain the spread of the disease. Replanting of date palms and olive trees has, however, taken a sizeable portion of land parcels out of production for other crops due to too much shade, making it unsuitable for cultivating cereals and alfalfa. The upper valley, on the steps of the High Atlas, is too cold for the cultivation of dates. This cold climate is conducive to a recent innovation of apple growing (50,000 trees), an innovation that has captured farmers’ attention due to its economic value and low labor requirements.

Olive trees come second in value after the date palms. Olive tree planting is on the rise since the palm grove has been attacked by *al-bayud* and also because olives are a highly valued commodity. Olives provide farmers with valuable olive oil, whose price surpasses factory made or other modern oils. Usually, two-thirds of the harvest is pressed in the local traditional presses and a third is sold to local and outside speculators. Over 600,000 trees make this valley very green, stretching from the upper to the lower Ziz. Mashed dates fried in olive oil are important for the local diet, and bread dipped in olive oil accompanied by a glass of mint tea are what bread and butter are for the American table.

Livestock is the third important economic leg of the valley’s agriculture. Well integrated into the local subsistence farming, it is a store of value or “small change” to be dispensed of in times of need. Livestock also supplies wool home-made clothing, and
a manure for the palm grove's intensive farming, without which yields would remain
low and would jeopardize household food security. The Ziz Valley is the breeding
grounds of the *dmane* race of sheep, well known for its prolific bi-annual reproductive
behavior, producing usually twins, triplets much of the time, and quadruplets not being
out the ordinary. The *dmane* sheep are raised in household pens and rarely venture into
the neighboring grazing grounds. Their feed is based on alfalfa, dates, crushed date
pits, crushed alfalfa roots, and hay. Goats, preferred by nomads, number around
500,000 head as well as 460,000 sheep, 30,000 cows, 7,836 camels, 18,000 mules, and
50,000 donkeys. The years of drought, particularly 1979-86, had a devastating impact
on the livestock sector, reducing it by 50 percent. Since the creation of the Errachidia
and Rich Milk Cooperatives in 1975 and 1982, one can distinguish two livestock
strategies at the local level. The first is intensive livestock raising geared toward milk
products for the regional market and beyond, along with a rapid increase in the number
of improved bovine races and the expansion of alfalfa acreage at the expense of
subsistence crops. The second is an extensive subsistence based on livestock composed
of native races with an average of five to six head of sheep per household (ORMVAT

**Conclusion: A Deteriorating Desert Ecosystem**

The potential productivity of the Ziz region, outpaced by rapid population
increase, is hampered by climatic conditions which threaten the livelihood of the oasis'
irrigated farming. The erratic rainfall patterns and recurrent droughts in concert with
frequent locust invasions have perpetuated the difficulty of sustaining a livelihood. *Al-
bayud* ravaging the date palm and the annual alternating olive production have also taxed
the local ecology and household incomes. Livestock production is limited by
overgrazing and constrained water budgets for the expansion of alfalfa acreage. All
these factors, in one way or another, have inhibited the full optimization of the
agricultural productive system.

Although the official technical discourse occupied with quantifying an arid
environment into means and averages, and controlling water resources to rehabilitate a
"dying oasis" serves the immediate bureaucratic needs of administrating rural
development, the ills and degradation of the oasis go far back in regional and global
ecological history. Although the valley does not lend itself to acreage expansion and
capital-intensive modernization due to the small-sized and fragmented fields and a tree
density rooted in a traditional farming system, all the ORMVAT can do is use the dam's
water as its bargaining tool for paving the path toward small-scale, rational, and modern
farming techniques, a role largely pursued by the extension division.

Water is only one major factor among many human induced factors that has
embroiled the area in ethnic struggles. Changing and unstable histories of power, ethnic
struggles, and the effects of tribal and colonial warfare have, over the centuries,
promoted a deteriorating environment mired in an imbalanced distribution of the
resource base. These early seeds of social stratification and the pre-colonial and colonial
ecological history that have contributed tremendously, in many ways, to the present
socio-ecological predicament of the valley as we know it today, are examined in the following chapter.
CHAPTER II

THE POLITICAL ECOLOGY OF THE ZIZ VALLEY: RAIN, TRADE, POWER, AND THE SOCIAL MANAGEMENT OF SCARCITY

Introduction

Le Sahara, désert aux mille visages, où les dunes sableuses succèdent aux regs, où les sebkhas salées coudoient les maaders, où l'homme soudain apparaît inséparable du chameau et du palmier, l'un allant de points d'eau en points d'eau, l'autre fixé là où il peut la trouver. Elle impose sa loi aux humains, destinant les uns au sédentarisme, les autres au nomadisme.... Pour les uns le palmier, pour les autres le chameau sont, non seulement signes de richesse mais source de toute vie (Colonel André Roy 1946:1).

Notwithstanding the poetic and romantic colonial description of the Sahara, the one thousand and one faces and mirages, and the venerated solitude and stillness or le baptême de la solitude of "the empty wastes of the desert" in the French military archives, the political and economic struggle for the control of the desert and its bounty over the centuries has jolted the resilience of the ecosystem of the Saharan frontier. Today, without exception, Ziz farmers, when asked about the leading constraint affecting their irrigated farming, all agree that water scarcity associated with its consequences of drought and desertification are the guilty parties behind the ecological disequilibrium and degradation well manifested in the "shameful and decaying" palmeraie resource base. To a certain extent, the farmers’ interpretation of the local setting rings true although they do not take, or I should say, do not have time, to take into account the long historical view of the processes of ecological degradation mired in
ethnic and power strife skewing the distribution of the productive base.

Those Who Have Incurred the Wrath of God: Rain or No Rain is the Realm of God

Rain and rescue prayers (Salat al-ssaqy or al-istighathah) are performed regularly, or at least, once every three to four years. Making communal alms and offerings (Sadaqa) of big wooden plates of couscous are performed to ward off the agents of fasad (breakdown of morality and family values) and incorrect behavior residing in the minds and hearts of few neighbors. Sadaqa is also offered when some members of the community are believed to withhold the tithe of land and tree harvest (al-`uchur), a factor that most people think has over the years exacerbated the hard years of drought. They pray to God to accept this communal feeding of the poor and the passing adventurers, asking that He turn the blue skies into cloudy ones to drench earth with water. Food charity and communal eating invites the blessing of God and the baraka of the local Saints since the undernourished get the opportunity to satisfy their desired appetites. Through this meal, the poor are well fed and a communal deed is performed in the hope that the communal prayer said after the meal would be answered by a quenching of the earth's thirst just as the poor's wish to be fed has been fulfilled. Communal prayers and Sadaqa performance are rooted in the belief that the community could only survive when everybody fends for the common good and, to say the least, bringing rain is beyond the work of an individual, as the locals say "God ma`a al-jama`a" (God is on the side of the community).

Last year, rain prayers were held twice on national television. Rain in the desert
is sporadic, and when it finally arrives, it floods everything in its way, damaging property and housing. Hence, the imam and the community of believers organize another rain prayer session, only this time to ask the All Mighty God to halt the rain. The community is caught in the middle of no rain and too much rain. When probed as to why they have suddenly changed their minds about rain, villagers find themselves in a confusing and unwanted situation explaining it away: "God has given us plenty but there must be some people amidst us involved in acts displeasing Him. The only thing we ought to learn from this too much rain baraka is the "Godly punishment" of his creatures for not following the right path of honesty and the strict Islamic moral code, creatures filled with jealousy and hatred towards their fellow neighbors. Unless we rid ourselves of these diseases, God will continue punishing us with drought and too much rain at the same time."

Local discussion of rain patterns is often equated with that "thing that one is not capable of nailing down, just like the many different interpretations of the meaning and context of the Koran- so many conflicting and contradictory explanations and different schools (madahib) see it differently. Rain or no rain is the realm of God, and if one is being teased by his mind to go beyond the obvious to discover the whys of this and that, one is interfering with the Godly domain and committing sin. Rain or no rain, us, and you, we are all in the hands of the All Knowing and Mighty God," a villager claims with a short and fatigued smile crossing his face. Others, instead of using the French economic division of Morocco into fertile agricultural areas of the plains along the coast
line and major rivers, referred to as *le Maroc Utile*, and the Saharan wastes composing
*le Maroc Inutile*, they quote the Koran, *surat al faiiHa* (The Exordium), paraphrasing
and garbing the colonial dichotomy in religious terminology, sprinkled with an
enigmatic and painful sense of humor, casting the desert badlands and its inhabitants,
south of the High Atlas, as those who “have incurred your [God’s] wrath” and “have
gone astray” whereas the good lands of productive Morocco, north of the High Atlas, as
“those whom you [God] have favored.”

This religious explanation of God’s malcontent, perhaps, brings an ethnically
fractured community together to bargain for a better and predictable climate regime—a
sense of helplessness is reborn, sweeping white and black alike, and no one is above
God’s will. In punishment, for the wise ones, there is a sense of brotherhood and
repentance. Accordingly, abundance or scarcity of water is God’s weapon to reduce or
increase the welfare of His creatures, and from it life and plenty emanates. The
enigmatic and unexpressed helplessness of the desert people in their time-tested religious
bargaining for smooth climatic extremities of the desert ecosystem capture the hardship
of life that has its roots in the region’s ethno-ecological history. The locals also overuse
the prophet’s saying “*khayru al umuri awSaTuha*” (in everything the middle of the road
is better) to introduce and conclude discussions of rain patterns. Praying for the blue
skies to be pregnant with moisture and a normal distribution of rain over time and space
has baffled the community of believers, “only God can give and take from his
creatures,” some with resigned and weary faces conclude their assessment of the erratic
rain fall regime. Others, particularly the younger generation, strongly subscribe to the view that “this environment does not and will never behave in a manner that is close to the middle of the road pattern, and the people of the desert are condemned to live in a harsh and difficult environment until the Day of Judgement.” The religious quest for a middle-of-the-road rain pattern in this desert ecosystem characterized by bipolar climatic extremes has proved too difficult for the oasis farmers to fathom. Perhaps, the seeds of the farmer’s uneasy, unresolved drive and search for a normal distribution of rain in the barren pre-Sahara were planted a while ago, and he is harvesting what his predecessors and outside power forces sowed in the environment.

As much as this ritualizing of water validates the farmers’ worldview and quells his obsession with water, the following reconstruction of the valley’s historical and political ecology helps to put the woes of the inhabitants and the palm grove into perspective. The situation, though, caught in water cycles of plenty and penury is more complex than what is conceded by farmers and the bureaucrats of agricultural development. Historically, because of the valley’s economic importance illustrated in its palm grove’s wealth and its medieval strategic commercial location between the Mediterranean and Black Africa, it attracted many adventurers, religious sects, wandering scholars and scouters, investors (from as far as Baghdad), and, of course, the pillage of the surrounding nomadic groups. Oral tradition and historical descriptions present an area battered by anarchy and ethnic and tribal conflicts which have no doubt ignited the processes of ecological degradation and intensified social stratification. The
French and their Moroccan collaborators, for example, in the early twentieth century, finding it difficult to control a rebellious and jihad sworn resistance, destroyed irrigation reservoirs and canals and imposed a strict military sabotage of water resources, manufacturing a fifteen-year long drought, followed by the 1944-45 drought and famine, locally known as 'am al-rruz (the year of rice, since it was the first time for the locals to consume rice), which had transformed the valley's traditional configuration of the social organization of agricultural production.

Managing drought, famine, and water harvesting techniques have always been at the heart of the resilient local repertoire of social and technological organization of the Ziz farmers. Despite these ecological events and the arrival of the French, the irrigation infrastructure and organization remained pretty much traditional until the construction and operation of the Hassan Addakhil Dam on the Ziz River in 1971, an innovation whose reach was limited to the construction of the dam and cement coating of main distribution canals. Recommended by the French in the twenties, this state and post-independence intervention, despite its well-intentioned goals of regularizing the river flow and protecting the inhabitants and property from seasonal flash floods, had over the years produced a set of conditions augmenting the transformation of the resilient desert ecosystem discussed in the first chapter. These natural and human-induced factors have been impacting and are being impacted by the desert environment. So, how has the hidden hand of human agency altered the desert ecosystem and crafted the socially stratified communities of the valley?
The Ziz Valley: Evolutionary Drama of Power and Ethnic Struggles

A theatrical metaphor is perhaps more fitting than the usual concept of cultural adaptation, as it insinuates the persistence of important lags and inconsistencies in the dynamic relationship between environment and human agency, particularly as far as the reconstruction of Tafilalt's history is concerned.¹ To understand the origins of environmental degradation and social stratification in Southeast Morocco, we must

¹ The terms Tafilalt, Sijilmassa, and Southeast Morocco are used interchangeably to refer to the Ziz Valley, particularly through this chapter. Sijilmassa is the name of the medieval tran-Saharan trade entrepot, founded near what is Rissani today, and came to be associated with the Ziz Valley back then. This term, though, used in scholarly and literary works fell out of common currency and replaced by Tafilalt. Tafilalt designates the geographical and cultural area of Southeast Morocco until independence. After that, the area was named the Ksar Es-Souk Province which would later change into the present Errachidia Province. Today, Tafilalt is limited to the urban center of Rissani and its surrounding ksars and palm grove. According to a local story, the term Tafilalt means those people who broke their promise. It is derived from the Arabic expression wafa bi al-'ahd, to keep one's promise. The story tells of the misery, locusts and droughts that taxed the productivity of the palm grove in the thirteenth century or so, and the determination of its people to do whatever it took to save the source of their livelihood. As it happened, the population went to see and seek the super natural power, baraka, and expertise of one of the holy Alawite Shurfa (singular Shrif), who was on his way to the sacred lands, Mecca. This same Shrif made the pilgrimage to Mecca, at the same time, promised that he would pray for the recovery of the palmeraie and its date palms on the condition that he would be entitled to the best dates stem from each tree when the deed is done. Upon his return from Mecca, he found the palm grove and its date palms recovered, and God had bestowed His plenty on his creatures. The Shrif then asked for his share of the best stem of dates from each tree and the locals denied his promised entitlement. Then, he asked them to settle for the one tenth share per household from the whole dates production and the locals still refused to honor the promised share. Incensed by the immoral behavior of the locals who broke their word or promise and the pact they made, the Shrif labelled the whole valley as those who do not live up to their promises. He told them "tafi bi l'ahd" (live to your promise) and they replied "la, la, la" (no, no, no), and thus the conception of the term Tafilala or Tafilalt. The Shrif named Tafilalt those who refused to honor their promises and since then they have been cursed by him to live in hardship and misery.
situate the order and amplitude of events that have molded the local evolutionary drama in an economic history account (Boubekraoui 1983; Cherouit 1987; Mezzine 1987). The medieval Arab travelogues describe the valley as an area of fertile lands, plentiful dates, lush greenery, and a sophisticated level of urbanization and architecture emulating and rivaling those of Moorish Spain and China. Sijilmassa’s trans-Saharan caravan trade between the eighth and ninth centuries made the valley the favorite trade destination of Moorish and Jewish groups attracted by speculation and high profits generated by an unequal trade exchange with the Sudan: slaves and gold exchanged for salt, wool, cloth, arms and gunpowder.¹

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¹ In the eleventh century, Edrissi writes that “As for Sijilmassa, it is a big and populated city, visited by travelers [merchants and pilgrims heading to Mecca], surrounded by beautiful gardens and fields inside and outside [the ramparts]; it does not have a citadel, but it consists of a series of palaces [qSars], houses, and fields cultivated along the banks of a river coming from the Western side of the Sahara [Oued Ziz]; the floods of this river, during summer, resemble those of the Nile, and its waters are used for agriculture in the same manner as those of the Nile are exploited by the Egyptians (1968:69-70). Mas’udi, in the tenth century, reports that Sijilmassa had a long main street which took an entire half day to walk. Ibn Battuta, in the fourteenth century, writes that every resident of Sijilmassa had a garden, a field and the house in the middle, exactly like what he saw in China, a fact that makes Sijilmassa a big city (Epaulard 1980:430). L’Africain, in the sixteenth century, describes Sijilmassa as a well policed and administered city and has beautiful houses. Its inhabitants were rich because of commerce they practiced with Black Africa. It had beautiful mosques and colleges adorned by numerous water fountains fed by the neighboring river.... The city was built on the plain, on the Ziz river, and was surrounded by a high wall of which we can still see some parts (1980:430). L’African (1980:429-430), however, refers to El Bekri, another Arab geographer and traveler of the eleventh century, stating that the city of Sijilmassa was built by Alexander the Great for the sick and invalids of his army. Based on these Medieval descriptions of the city, an American multi-disciplinary team has been excavating the site of the Sijilmassa ruins since 1990 to reconstruct the medieval city of Sijilmassa, as described by Mas’udi in the tenth century. Reconstruction of the past of Sijilmassa and its hinterlands has been, however, too speculative and problematic, despite early neolithic settlement that could be associated with
The Saharan Caravan Trade: The Rise of Sijilmassa and Power Struggles Between the Eighth and the Fifteenth Centuries

The Zenata Berbers, a *kharejit* sect persecuted in the Middle East by the Sunni Caliphate established the city of Sijilmassa as a trade entrepot as well as a platform to proselytize the Berbers and the Sudan into Islam. Under the political and religious hegemony of the Zenata, tran-Saharan trade was regulated and attracted Arab, Muslim, and Jewish merchants from the Orient and Muslim Spain. During this period of social change, particularly when Sijilmassa’s fortunes echoed all over the Muslim world, the ancient rock art found in the Taouz area and poorly documented. The locals still talk and refer to the Romans building specific ruins. Others talk about “bar’Tqiz’ or the Portuguese as having built and constructed a number of ruins that dot the Saharan landscape. The Portuguese connection could be possible since their ruins and structure were mainly found in mountainous areas and hence a link with their royal quest for minerals and other preciousities in the fourteenth and fifteenth centuries. Confusion over the Roman problematic could be possibly due to the way the Berbers refer to a foreigner as arumay (masculine) and tarumit (female), meaning Roman or Portuguese or even Christian. For instance, in the qSar of Zaouit Amelkis, in the middle Ziz Valley, about 120 km north of the medieval settlement of Sijilmassa, we encounter a planned semi-fortified structure and ruins built out of stones and dirt on top of one the surrounding mesas. The locals name that part of the palm grove tarumit in Berber and romiya in Moroccan Arabic, meaning a female Roman. Whether it is Roman or Portuguese one cannot tell for sure, but the question is why people refer to some ruins as Roman and others as Portuguese; since they have deliberately made this distinction there might be some sort of truth to the collective memory of the past.

The Kharejīt movement dates to the conflict between Ali bnu abi Talib and Mu’awiya over the succession to the caliphate. When Ali agreed to settle this conflict at the battle of Siffin in 756 A.D. a number of his followers defected and left in protest of his agreement to submit to human arbitration. As a result, kharijism evolved into a revolutionary doctrine. Accordingly, followers of the movement believe that descent from the prophet was unimportant, a black slave could be elected to be imam, and faith is justified only by good works. The followers were also obliged to overthrow unjust rulers. Its prominent followers today are the Ibadites found along the northern and western edges of the Indian Ocean and the Saharan region of Mzab and Wargla in southern Algeria as well as much of the population of Oman.
local social and spatial organization of the oases would have undergone transformation as it was anchored in a trade and power web woven by religious reform inspired dynasties, Berber and Arab nomads, and the sedentary black populations. The quest for the control of the tran-Saharan trade to supplement a resource poor ecology would, in the end, set in motion the mechanisms of an incipient social stratification structure in the region. Nomads, Jewish and Arab merchants controlled the organization of the caravan trade becoming patrons while the Haratine or blacks became the oasis tillers and clients. This incipient and precursor trend of social stratification rooted in an exploitative ethnic division of labor generated prosperity for the Zenata to found the city-state of Sijilmassa in 757 A.D., replacing Ziz and Tudghat (Epaulard 1980:425).

Before the rise of Sijilmassa into a commercial center, trans-Saharian trade linked directly the Western Sudan and Egypt across a braided line of desert oases. This itinerary would be later abandoned due to problems of insecurity and sandstorms, factors that led the Egyptian Sultan, Ahmed ben Touloun (863-883 A.D.), to shift the caravan trade route in the direction of Sijilmassa instead of the Kharga oasis in the south of Egypt. Merchants coming from Basra, Koufa, Baghdad, Persia and other cities of the East to trade with the Western Sudan followed caravan routes through the Maghreb to the Sijilmassa terminus. Many travelogues have noted the resemblance of Sijilmassa's urban constructions to those of Yemen and Sistan, and others have described it as the breeding cradle of urbanization where East meets West, elements testifying to Sijilmassa's grandeur. This shift turned Sijilmassa into the revolving capital crossroads
of international trade, linking the Sudan, the Maghreb, and the Mediterranean world. Sijilmassa would continue playing this international role until the fifteenth century, a critical time coinciding with European encroachment on the Moroccan shores exacerbated by the flourishing social and political anarchy caused by competing dynasties and nomads. Because of its high trade profits, Sijilmassa was the victim of the ruling powers of the Orient, the Maghreb and Moorish Spain. The commerce generated wealth put the area on the international commerce map, and at the same, made it ripe with local conflicts and global struggles (Epaulard 1980:425-26).

In the Maghreb and beyond, every power pretender tried to control Sijilmassa’s trade entrepot and its axes of trade. Each contender wished to exact taxes on transactions and extract large profit margins from organizing, running and insuring the caravan enterprises. Caravan escorting and lodging benefitted a large segment of the population, especially the nomads. The survival and durability of the ruling powers was measured by the extent to which they could control the trade routes. Sijilmassa, however, succeeded in keeping its independence from the central powers of the Maghreb until the end of the eighth century when it fell to a series of dynasties starting with the Fatimids, the Almoravides, the Almohades, the Beni WaTTas, the Sa`diyin and the present ruling Alawites. These various dynasties originated among the nomadic Berbers tribes in the Sahara and what is Mauritania today, except the Fatimids and the Alawites who have an Arab origin. These dynasties had always rallied behind the religious agenda of purging Islam of its impurities to reach power; they all got to power in the
name of the ideology of religious reforms. Their target, however, was to control the masses and the luxurious caravan trade of gold and slaves. These ruling powers, even though often established in the imperial cities of Fez or Marrakech, their reign was incomplete unless they dominated Sijilmassa and its hinterlands.

The nomadic element was also active and thrived on the caravan trade in the periphery of the Sijilmassa metropole, a factor that explains the instant rise and fall of many dynasties. Political instability and anarchy, expressed in trade disruption and armed conflicts, provided the nomads with a window of opportunity in the form of receipts generated from escorting caravans or pillaging them. The shifting of the trade routes, the instability of the central governments, famine, and the rise and encroachment of the imperialist powers on the Moroccan shores lured by trade profits robbed the nomads of the Sahara of their survival base who, in turn, resorted to pillaging and marauding the sedentary communities. Hence, the seeds of servitude and social instability were planted in the Ziz Valley, a situation that would only slowly whither away with the arrival of the French at the end of the nineteenth century. A climate of tensions and conflicts loomed on the palm groves of the valley. These struggles, without a doubt, have converted the palm grove into a battlefield and a concomitant impoverishment and destruction of the resource base. Travelogues and scholar pilgrims report stories of ravaging warfare, sieges, and fire destruction of the palm grove caught in the middle of inter-village, nomad, sedentary, and ruling dynastic struggles.

Before the end of the fourteenth century, four successive North African dynasties
ruled Sijilmassa. The Fatimids of Qayrawan, Central North Africa, managed to hold on to Sijilmassa for a short period of time only to be dethroned by the Almoravides. Having already controlled the tran-Saharan trade routes, the Lamtuna Berber Almoravides’s saw that their trade control was incomplete without the domination of Sijilmassa. The Almoravides’ bloody conquest of the city-state of Sijilmassa had drastic effects on the agricultural landscape. Despite the effervescent jihad of this dynasty, the Zenata nomads, native to the Sijilmassa region, resisted the Almoravides’ entrance into the area. This conflict left behind carnage and led to the destruction of the garrison and its rebellious inhabitants in 1056-57. With the fall of the Almoravides, the Almohades came to power only to capitalize on the harsh achievements of the previous dynasty. Faced with an ardent nomadic resistance, the Almohades would only succeed to control Sijilmassa after two bloody attempts. The dynastic control, however, never meant social and political stability. Instability, and the pursuit of control of the tran-Saharan trade, translated into continuous conflicts with the nomads who retaliated by repeatedly pillaging sedentary populations and destroying most of the palm grove. Exhausted by nomadic conflict and power struggles, the Almohades would dissipate and be replaced by a myriad of power centers at the local and Maghreban levels as anarchy set in. During this turbulent period between the eighthth and the fourteen centuries, power

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4 In 953 A.D., Epaulard (1980:425) states that the `amala or province of Sijilmassa provided the Fatimid Treasury 400,000 dinars of taxes per year, a sum that was collected during three times over the period of five days, accounting for half of the taxes that North Africa payed to the Fatimid Treasury.
Imperial Dynasties, Nomads, Saints, and Peasants: The Fate of Sijilmassa Between the Fifteenth and Nineteenth Centuries

By the end of the fourteenth century, the Merinids would finally forge a coalition with other tribes to steer Morocco away from anarchy and protect its shores from the imperialist designs of Christian Europe. Just like their predecessors, the Merinids and their coalition had only one thing on their minds, since they were deficient of charismatic religious baggage to justify their leadership—the control of the Saharan Trade. In fact, the Merinids attacked Sijilmassa and the valley for eight months before they could become the new masters of the Tafilalet metropole, limiting the Arab Banu Ma’qil tribe’s sphere of influence. Mired in power struggles of succession, the Merinids would be besieged by the Banu Ma’qil tribes. This Arab tribe’s marauding and pillaging behavior is widely believed by historians to have been the leading factor in the transformation of the whole ecosystem of the valley and the degradation of the commercial and agricultural base of the Saharan Southeast Morocco. The Banu Ma’qil would finally destroy the hold of the Merinids and precipitate their fall. The Banu Ma’qil formed an acephalous type of tribal social organization, moved easily with their herds and tents in the sphere of the Tafilalet and pushed the Berber nomads farther and farther from the Tafilalet into the marginal lands of the Hammada and the High and Anti-Atlas ranges. They practiced razzias- robbing and pillaging the qSars they occupied and their neighboring Berber nomads. The Banu Ma’qil would finally kill the struggles for the control of Sijilmassa ravaged the population and the palm grove.
Sijilmassa bound trade routes by pillaging the caravans and detouring the trade routes to the Dra’a Valley. This detouring of trade routes would coincide with the Spanish Inquisition, imperial Spanish and Portuguese control of the Moroccan shores, the weakness of the Merinids to organize jihad against the Christians, the French presence in Senegal and that of the Turks in Touat. This interference with the flow of the gold and slave market would finally put an end to the glorious days of Sijilmassa as well as the Merinide dynasty.

In the sixteenth century, the former city-state of Sijilmassa would become the battered ecological theater of political violence and instability involving nomads, sedentary communities, and inter-dynastic crises. This period would have an interlude with the arrival of the Sa`diyin dynasty illustrated in Ahmed al Mansour al-Dhahbi’s (the Golden) invasion of the Sudan in the middle of the sixteenth century, leading to a revival of the tran-Saharan trade. This short-lived period of trade prosperity would be taxed by political struggles of successions of Ahmed Dhahbi, the expansion and competition of the old (Spain and Portugal), the emerging European powers (France, England, and Holland) and the struggle for the control of the sources of gold and slaves markets along the Atlantic Coast, and the Ottomans’ extension of their control over the Touat oasis southeast of Sijilmassa. With the bulk of the trans-Saharan trade eliminated, the demise of the Sa`diyin dynasty, and the Banu Ma`qil’s hegemony on the palm grove and its qSars, a depopulated Sijilamassa was reduced into trade warfare between the Arab Shurfa qSars of Tabu` Samt, El Mamoun, and Tanjouit. Leon l’Africain who,
spent seven months in El Mamun qSar between 1514 and 1515, describes the predicament of these qSar-based centers of power:

Il existe en effet entre ces gens force discordes et divisions. Ils sont toujours en lutte les uns contre les autres, et se font le plus de mal qu’ils peuves, c’est-à-dire détériorent les canaux d’irrigation qui viennent de la rivière [Oued Ziz], ils coupent aussi les palmiers au ras de pieds et se pillent les uns les autres…. On frappe dans ces châteaux de la monnaie d’argent et d’or…. Une part des revenues du pays est prélevée par les chefs de parti; c’est le cas du tribut des Juifs et du bénéfice de la frappe des monnaies. L’autre part est prélevée par les Arabes; c’est le cas du revenu des douanes. La population est vile et tous ce qui s’expatrient exercent de bas métiers. On trouve cependant quelques riches gentilshommes et beaucoup d’entre eux vont au Pays des Noirs ou ils portent des marchandises de Berbérie qu’ils échangent contre de l’or et des esclaves (1980:428-429).

The beginning of the seventeenth century would be marked by struggles and conflict between the populations of Oued Ifli and those of Tabu’ Samt. The cause of this conflict revolved around the claim to power made by the first sultan of the present ruling dynasty by Oued Ifli and Tabu’ Samt refusal of the bay‘a or allegiance to the Alawites. The people of Tabu’ samt saw in the Alawites claim to power a huge threat to their trade prosperity that would undermine profits accumulated by taxes imposed on the Jewish merchants and population as well as the loss of money raised from minting fees. As a result, Tabu’ Samt would call upon the religious Brotherhood or Zawiya of the Di la in the Middle Atlas for protection, while the self-proclaimed Sultan Moulay Shrif, in 1631, had recourse to his friend Abou Hassun Semlali of the Zawiya of Tazerwalt in the High Atlas. The Tazerwalt Zawiya was a powerful Zawiya that flourished from tran-Saharan trade in the Sus because of its strategic trade location linking the Dra’a Saharan route
with the European trade posts along the Atlantic Coast.

The arrival of the Zawiyas to salvage this power struggle would plunge the area into armed and destructive tensions. The Tafilalet was divided into geographical factions: Oued Ifli and Sfalat. Prior to this conflict, the two districts maintained a silent conflict over the irrigation waters of Oued Ifli controlled by the Alawite Shurfa. The upper river Shurfa controlled the flow of Oued Ziz water feeding the Sfalat to which Tabu’samt belongs, this on one hand. On the other hand, it was on the Shurfa’ Oued Ifli territory that Sijilmassa flourished, and this allowed for the development of political and administrative influence over Tabu’samt.

By the middle of the seventeenth century, the Alawites succeeded in defeating their opponents, particularly with the revival of the Sudan-Touat- Sijilmassa- Fez trade route and the striking of a peace pact with the Dila Zawiya, as well as reducing the Tazerwalt influence from the area. The Dila Brotherhood settled for the control of the High Atlas and of the Berber pastoralists of the Ait Yaflman confederation created to contain the Tazerwalt push to the north, as well as to limit the Ait Atta’s encroachment on their grazing pastures. The Dila’s strategic move to the High Atlas Mountain passages, and alignment along the Fez bound caravan route was not only dictated by its drive to control and tax the flourishing commerce at this period, but it also meant a containment policy of the Tazerwalt influence to the north.

This political maneuvering left Sijilmassa to the Alawites, an arrangement that accommodated both parties while eliminating the influence of the Tazerwalt Zawiya
whose political ambitions sought to integrate Sijilmassa into its Western trade orbit. The Alawite-Dila alliance and partition of spheres of influence demonstrates how crucial the Sijilmassa trade was to the political and religious rise of the Alawites as well as to the boost of the zawiyas' religious influence among the Berber tribes of the High and Middle Atlas (Mezzine 1987).

The Atlas chains bordering the Sahara desert are occupied by myriad Berber nomads who practice vertical transhumance between the highlands of the Atlas and the lowlands of the desert plateaus in search of grass and water in concordance with the seasons. Because of the unfavorable ecological conditions of drought, famines, and political instability in the seventeenth century many tribal groups pushed their way to the north beyond the Atlas and settled in the plains. This push towards the north and conflict over shrinking grazing lands led to the proliferation of Zawiyas, especially those linked to the Dila, to resolve pasture conflict and maintain some sort of strained order and peace among the nomads as well as among the sedentary communities.

During the fifteenth and sixteenth centuries, a period of famine and plagues, also marked by the collapse and weakness of the Moroccan state and European control of the trade routes and ports, witnessed the rapid evolution and spread of Zawiyas throughout the country (Triki and Rosenberg 1972). In front of a weakened Merinids and inefficient and declining Banu WaTTas dynasties, the platform was open for the saints and the Zawiyas to fill the political vacuum and dream of economic and political power. In the middle of chaos, the Zawiyas organized charity drives and mustered unity and
solidarity. These events led to the rise of the Zawiya institution and its proliferation throughout the Moroccan political landscape of the sixteenth century.

The saints and their Zawiyas played an important role during these times of chaos and absence of the state. They reinstated peace and order without which many activities such as pastoralism and the tran-Saharan trade would not have been possible. Their influence and quick rise to the political arena, however, gathered momentum essentially due to preaching of *jihad* (holy war) and resistance against the Portuguese and the Spanish. On the religious plane, equipped with the power of *baraka*, the saints favored sufism and reenforced the spread of popular religion geared towards everyday life and anchored in experiences lived by its followers.

Having lost its monopoly over the trans-Saharan trade and cornered by the European blockade and occupation of its shores, Morocco lost an important percentage of its population to famines and plagues. The conjuncture of these periods left a solid mark on the organization of political life. The state machine was non-existent. The state was helpless in efforts to contain social agitation and chaos. This explains the proliferation of violence almost everywhere. Civil wars punctuated the decline and rise of dynasties. The decline of the Banu WaTTas and the rise of the Sa`diyin, however, would open the door to a new Morocco, different from that of the Medieval period. This new transition was characterized by the decline of urban culture and the multiplication of new cultural centers associated with the Zawiyas and the ascension of the ideology of Arab Shurfa (Brignon et al. 1967).
From the sixteenth century, the power of the great tribal confederations would be curtailed and slowly gave way to the political and ideological hegemony of the Shurfa and the Zawiyas. The old tribal organization began to give in to a new social formation whose influence and privileges rested on heredity and descendent from the prophet. These elements help to understand how the Zawiyas were critical in their support of the marginalized Sa’diyin as well as the Alawites who still rule Morocco. This period of transition is characterized by the rise of the ideology of Shurfa anchored in the forces of the Zawiyas that dominated the rural areas, a theocracy in constant conflict with the dissident tribes, and a stratified state formation. The consequences of this new situation would be intensified until the end of the nineteenth century.

These series of events turned Sijilmassa not only into a trade center from which huge profits were reaped by the Alawites and their Dila allies, but also provided a platform upon which they cultivated their religious lineage ideology to construct a political base and stability in Southeast Morocco, this on one hand. On the other hand, however, the “religious good offices” of the Shurfa and the Murabitin of the Zawiyas to resolve conflict were rewarded by valuable gifts, offerings, and economic favors by the surrounding tribes. These *ziyaras* constituted an extra resource base of wealth for the Shurfa and the Murabitin in a world marked by scarcity, and explain their rural, intellectual, and comfortable way of living—herds, shepherds, slaves, grinding mills, and a large portfolio of land and trees. The gifts or *ziyaras* were not all consumed by the Zawiya and its lineage.
A portion of these gifts served to lodge and feed the visiting tribes, the wandering poor, and, of course, subsidized Zawiya's travel around its sphere of religious influence, an activity that reenforced the Zawiya's political role and social prestige among the surrounding tribes. This, in turn, generated more zayaras and provided the right of grazing for the Zawiya's herds, strengthening its economic power. The other part was invested in the purchase of land and procurement of slave labor and Haratine (Blacks) in order to fortify its economic growth. Accumulation of profits from the caravan trade, strengthened by the economic surplus donated by the nomads and exploitation of the Haratine, gave birth to a Maraboutic mercantile and enterprising class of Shurfa and Murabitin. They maintained a distance from the social relations of production as in livestock, herding, labor, and land.

These forces of production were the breeding grounds of conflict and violence. The development of early trends of stratification and exploitation, made dramatic by droughts and famines, political instability, and accumulation of resources by the Berbers and the religious elite (herds, irrigated agriculture, rainfed or bur and valuable economic trees in and around the religious lodge, and also scattered over their religious sphere of influence), led to the domination of the sedentary communities by the Berbers and the holy Arab lineages in the coming century.

In the High Atlas, for instance, Zaouit Sidi Hamza, an arm of the strong Dila Zawiya of the Middle Atlas, was established in the last quarter of the seventeenth century in the heart of the pasture lands of the Berber Ait Yaflman and Ait Atta
confederations. The Zawiya lodge is built on the top of a gentle hill and squeezed between the denuded Jbel Ayash and a massif of rolling hills, making the practice of agriculture a sideline activity after pastoralism which is the backbone economic activity of the area. In the middle of the surrounding denuded hills, the valley runs through a narrow ribbon of small-sized fields, too small to support its population. The scattered housing units, the fortified qSar and its built settlement extensions, and a number of stables overcrowd the green and thin ribbon of fields.

Against all these constraints one wonders how they have made a living out of pastoralism in a vulnerable and risky environment such as theirs, an area prone to recurrent droughts and having undergone massive deforestation. When asked what they have been growing in their parcels, a prominent member of the people of the Zawiya quickly answered “here, people have made a living out of planting the one and only seeds that our ancestors have left for us to maintain the livelihood of the community, and these same seeds are a thousand times better that the cereal seeds you have been talking about, our seeds are the seeds of the Koran. The seeds of the Koran are behind our coming and arrival to these cold lands of plenty or blad al-khir;” and as he puts the shawl of his white wool burnoose on his left shoulder, he adds, this time, however, with a refrained smile and undetected pride, his eyes teary from the blowing cold wind, “unlike most of the other villages, here, we still have Koranic schools (akharbish) and still train theology students to become tolbas and fqihs to lead prayers and religious ceremonies in other parts of the region.”
Indeed, respect, spread, and conservation of the seeds of the written word have always been the best assets of the religious lodges throughout the Moroccan rural landscape. The seeds of the Koran have performed miracles yielding a healthy and sustainable social and political power rooted in the amassing of land, gifts, and labor in various parts of the region. These same miracle seeds, however, have recently engaged the Zawiya in conflict within its umbrella of influence. For example, a neighboring village inhabited by Haratine or Blacks has recently refused to pay tribute on the Zawiya’s lands and has been challenging the Zawiya’s claim to their village’s lands.

Violence fueled by tribal competition over the scarce grazing resources, mediated by the Maraboutic mercantile bargaining powers of the Zawiya and Shurfa, crafted in a fractured society and battered landscape, laid the right conditions for the seeds of the Koran to flourish and bestow upon its planters the status of superiority over the illiterate and the working class. The Marxist theoretician Gramsci’s concept of hegemony provides a useful tool to analyze the role of the religious symbolic capital in manipulating the cultural and ecological relations of productions. Williams, for instance, describes the concept of hegemony in the following manner:

*It is not limited to matters of direct political control but seeks to describe a more general predominance which includes, as one of its key features, a particular way of seeing the world and human nature and relationships.... It is seen to depend for its hold not only on this expression in the interests of the ruling class but also on its acceptance as "normal reality" or "common sense" by those in practice subordinate to it* (1983:145).

As Gramsci (1971) has argued, I advance the argument that the main functions of intellectuals and the archivists of the holy word of the Koran is to perpetuate the
hegemony of their class over society as a whole by inventing and reinventing a justifying ideology, an ideology crafted in religious discourse and glued by the economic base of the Shurfa and Murabitin social groups setting the foundation for the ethnic mode of production that has characterized the valley's configuration of production since.

Tazroufte, the original foundation of the Zaouit Sidi Hamza before its final settlement in the present qSar of Zawit Sidi Hamza, inhabited by the Idrissid Shurfa and Murabitin of the Zawiya, is built on a hill, shielded by the overpowering and stark wall-like Jbel Ayash. It is reported that this qSar developed in the seventeenth century out of collective cereal granaries that the surrounding transhumant tribes kept in the hill. This period was characterized by drought, plagues and one of the worst famines to have left its mark on the southeastern social memory—‘am al qaHi, the mother year of all miseries and famines to the point that this historical event has taken the form of a serious hex one wishes upon his/her worst enemy.

The village is over-populated and the agricultural base, due to the tormented terrain, is limited to a short band of fields on both sides of the hill. Instead of intensifying every inch of the mazra’a or fields, the locals practice fallow because of the observed unproductivity of their plots over the decades and the poor stony soil—when the east side of the fields is put into production the west side remains fallow and open to livestock and herds. To redress the agricultural deficit and keep pace with a rising population, the Tazroufti have adopted the strategy of imdyazen or wandering musicians; some people would rather refer to them as beggars or sa’aya, or even as lazy people
who use their religious heritage to make a living.

During harvest times (wheat, corn, dates and olives), they leave the village to play music and sing, taking charity and gifts in the upper and lower Ziz Valley and beyond. They usually travel in pairs, one playing the violin and the other the *bendir*, a drum. The Tazroufti are believed to possess roughly 550 violins, and have, in fact, perfected the violin playing into an exact science of cultural and artistic adaptation to keep vulnerability to famine at bay, a creative strategy that sets them outside the traps of the Boserupian population and intensification model. Though their migration to offset the under productivity of their environment is seasonal and dictated by the rhythm of harvesting along the valley and beyond, the adaptation of the violin as a coping strategy to remedy their local ecological disequilibrium, reenforced by their religious capital, has handsomely produced an accumulation of charity supplementing nicely their part-time herding, fallow agriculture, and household penned livestock activities.

Under these conditions, production is no longer an economic activity in the narrow sense of the word, because it incorporates far more than the five basic pillars of production—land, capital, labor, technology, and management (the subsumed class). Production is determined at once within a web of relations—ecological, cultural, technical, and social—whose understanding is flawed by the forced insertions of essentialism and reductionism. The relations are dialectical, in the sense that they act and react upon each other constantly to perpetuate a dynamic process of production. In a historical sense, these relations are also mutually constituted.
Neo-Marxist theorists describe the concept of the nexus of relations with the notion "overdetermination" meaning that every process is determined simultaneously by every other process in society (Resnick and Wolf 1989). The technical relations of production refer to Marx's forces of production (resources, labor, capital, and technology), but whose attributes are determined by social relations of productions, meaning ownership of the means of production and the manner in which these resources are utilized and the rules governing the social distribution of the final products. Production involves constant relationship with the environment bringing about myriad mutual interactions with the ecological relations of production. The cultural relations of production refer to the mutual interactions between economy and culture, especially the interaction of production with the religious path of the community as embodied in shared meaning, reality, and the symbolic capital of the social groups.

The Tafilalt environment in the seventeenth and eighteenth centuries was marked by resource scarcity, drought, famine, and diseases. This scarcity and competition over resources by various nomadic tribes opened the door to the Zawiyas to act as the peace brokers. This period also saw the rise of the Shurfa Alawites and other trading groups to the summit of the social and ethnic pyramid—making huge profits from Saharan speculation and high interest bearing loans to the commoners who were vulnerable to the whips of a risky environment.

These Saharan lands whose development was arrested by droughts and violence among the pastoralists and the sedentary people set in motion the proliferation of
religious lodges to keep the peace, a peace that generated tremendous economic surplus and provided a justifying ideology for the religious class. The nexus of production was determined by the Shurfa’s religious lineage, reenforced by economic gains from the tran-Saharan trade and accumulation of wealth, and the Murabitin’s religious capital and capacity to erect some type of order among the nomads. Both social groups would come to prominence during periods of anarchy and scarcity.

Under the circumstances of a communal system characterized by the “absence of property in land” among the pastoralists, the Zawiya establishment functioned in the midst of an elaborate social superstructure “containing all the conditions for reproduction and surplus production within itself,” which resisted change (Hobsbawm 1989:33). Instead of “oriental despotism” and government management of resources, in a tribal system, centralization and organization is monopolized by the religious lodge. As Hobsbawm (1989:33) writes, “where such small-scale systems units exist as part of a larger unity, they may devote part of their surplus product to pay the costs of the larger (community), i.e. for war, religious worship, etc.” Whereas the Shurfa’s monopoly of the long-distance trade generated monetary wealth, usury led to the sharp social differentiation in society.

The elaborate Murabitin mobilization of the superstructure embodied in the use of their saintly status to arrest violence and the Shurfa deployment of the economic base to boost their superstructure realm together express an early social division of labor as well as a sharp separation of various ethnic ranks among the social groups of the valley,
spawning the valley's exploitative ethnic mode of production where Shurfa, Murabitin, and Berbers are the privileged groups with access to land and water and the slaves and the Haratine provide the labor power and skill to maintain production.

At the end of this century, despite the proliferation of Zawiyas and the strong power base of the Alawites and their efforts to quell violence and anarchy, the palm grove would remain a battle field perpetuated by the appearance of three crucial powerful actors: the Ait Atta confederation to the west, the Ait Yaflman to the north, and the Dwi Mni` to the east. The rise of the Ait Atta, natives of the Jbel Saghro, was provoked by the Banu Ma`qil's push and expansion to the West depriving the Ait Atta of their traditional Sijilmassa market and threatening their grazing lands. The Banu Ma`qil expansion to the Ait Atta grazing space would provoke a harsh reaction, changing the regional ethnopolitical balance of the Tafilalet. The sheer power of the Ait Atta would demonstrate its capabilities in violent conflicts with the Banu Ma`qil that would finally destroy Sijilmassa in 1818.

The Ait Atta would finally control the palm grove and extend their influence to the High and Middle Atlas. This quick and dominating expansion could only be explained by the ethno and socio-economic factors of the era: the drought years of the seventeenth and eighteenth centuries, the Banu Ma`qil push denying them escort of the tran-Saharan trade routes and domination of the palm grove, a source of their agricultural produce, especially dates and cereals. The Ait Atta hegemony did not only impact the palm groves but also threatened the central government. To contain the Ait
Atta expansion and power, Moulay Ismail recruited the help of the Berber Ait Yaflman confederation composed of many High Atlas and High Melwiya tribes. This governmental containment strategy would plunge the palm grove and its population into warfare, opposing the Ait Atta and Ait Yaflman with the Dwi Mni tribe taking sides whenever it suited their interests.

The Ait Atta push would quickly dominate the palm groves and the surrounding grazing space much to the detriment of the Banu Ma`qil, sedentary communities and other nomadic tribes. This expansion strengthened their occupation of many qSars that they still occupy today, an area endowed with watered lands and with date palms and olive trees in the Middle Ziz Valley. This occupation would breed cycles of violence with neighboring tribes that had devastating ramifications on the agricultural base and its population. The newly manufactured Ait Yaflman confederation, faced with evictions of its tribe members from the valley and a shrinking grazing space in the High Atlas, would react violently to the Ait Atta and give birth to alliances of clientelism and patronism in the heart of the Ghris and Ziz palm groves.

Grazing and palm grove alliances would perpetuate conflict between the two confederations (De Foucauld 1888:226). As a result, the palm grove would be partitioned into nomadic protected spheres or *leffs*. The Ait Khabbash *leff*, a tribe of the Ait Atta confederation, was composed of Rtab qSars, Bni M’hamed, Shurfa of Oued Ifli and Tanjouit, and Ghorfa of Dwi Mni’s who had a precarious relationship with the Ait Atta. The Ait Marghad *leff*, a tribe of the Ait Yaflman confederation, sheltered the
sedentary populations of Arab Sbbah and Haratine concentrated in Tizimi, M`aDiD, Oulad Zahra, Sifa, Sfalat, Jorf, Hannabou, Fezna, and Tilwin.

The destruction of Sijilmassa, in concert with the ethno- and geopolitical management of the Tafilalet palm groves and its hinterlands monopolized by the bipolar balance of terror maintained by the Ait Atta and the Ait Yaflman, generated a new situation—violence was not only limited to nomads and sedentary communities but it also had spread to inter- and intra-qSar conflicts. Under these conditions of violence, nurtured by drought, famine, and tran-Saharan trade replaced by the Sus Atlantic bound routes, it is very hard to imagine the maintenance of a productive system of agriculture, particularly an intensive system whose water management and operation rested on inter- and intra-qSar communal labor. With changing alliances breeding inter-qSar tensions, conflicts continued to tax the local ecology and its residents until the French finally put a military governorship in place in the Tafilalet province in 1932.

“When the Dog Came from Boudenib”: Finally, the French Arrive to Tafilalet

The French occupation of the southwestern Algerian Sahara in the last quarter of the nineteenth century, particularly Touat and its surrounding oases constituting the economic periphery of Tafilalet, sent chilling ripples across the Tafilalet landscape. This occupation would radically interrupt the old ethno-ecological relationships between the oases and the nomads. The Ait Atta nomads reacted violently to the French encroachments on their traditional territories. Ethnically and historically, a large tract of territory encompassing Ain Sefra and the Grand Erg Occidental belonged to the
Sharifian Moroccan sphere of influence. The Dwi Mni` are originally natives to the Sahel and had represented the Sultan of Tafilalt; the Ghenama tribe of Beni Abbes are from the Dra`a Valley; the Sawra, Touat, and Tidekelt were under the governorship and \( bay`a \) of the ruling Alawite dynasty.

It follows that political, economic and religious relations naturally tied Tafilalt to the Hammada of Guir and the oases of the Grand Erg Occidental and beyond. To the south of Tafilalt, the Ait Atta nomads would attest to a shrinking of their winter grazing lands and restriction on their subsistence strategies, being pushed from the Sudan caravan trade routes, Tidekelt, Touat, and Souara to the footsteps of the Anti-Atlas chain. The disruption of traditional networks of exchange and eviction of nomads from winter pastures invited fierce attacks on the French, engendering a climate of anarchy in and around the Tafilalt area.

Tafilalt was not only the agricultural and trade center of the region, but it also represented a formidable capital of Morocco, rivaling Fez and Marrakech. It was an armament bazaar for the surrounding nomads and sedentary communities as well as a refuge for the rebellious elements attacking the French along the Algerian-Moroccan border and pillaging much of the declining and reduced caravan trade. With Tafilalt plunged in political and tribal strife, the caliphate of the Sultan, Moulay Mahdi, tired of being abused and tired of anarchy, desperately pleaded with "the dog," meaning French colonial power \( (al-isti`\text{mar}) \), to step in and restore order and dignity to Tafilalt. Many informants subscribe to the belief that Moulay Mahdi was "tired of paying heavy fines
imposed on him by foreign powers whose traders and caravans were jumped all the time by nomads and the sedentary road extortionists or cutters.” Lyautey, the first French Resident General in Morocco from 1912 to 1926, familiar with indigenous politics of the Algerian-Moroccan borders, refused to send his troops to a politically and religiously torn tribal territory and preferred to initiate a commercial relationship with Tafilalt to escort and secure the safe passage of caravan trade between the Guir Hammada and the Tafilalt orbit (De Sainte Marie 1927:16).

Lyautey understood the suicidal ramifications of a premature intervention since “Tafilalt’s pear was not ripe to be picked yet” and “les maitres de l’heure” were the forces of religious adventurers re-energizing the old bloody tribal politics of alliances to fill the political vacuum created by a weakened Makhzen or government structure. Instead, he directed his effort and attention to the stabilization of productive Morocco as he called it and opted for slow political and anthropological work in the Sahara:

*Le principal intérêt de nos territoires Sahariens ne réside pas en eux mêmes, il a sa source dans la protection qu’il offre aux colonies voisines. Nous sommes allés au Sahara non pour tirer profit de ces immenses étendues stériles, mais pour mettre à l’abri des pillards des régions limitrophes les plus riches…. Comment imposer par la persuasion notre autorité à ces indépendants, parmi les indépendants, qui n’ont jamais connu d’autre loi que leur humeur vagabonde, d’autre contrainte qu’une liberté poussée jusqu’à l’anarchie?…. En un mot préparation politique et matérielle assez poussée pour qu’au jour de l’action décisive la progression de nos forces d’occupation ne rencontre pas de résistance immédiate, et que les réactions tardives de la dissidence a des positions déjà organisées* (Huré 1952:20).

For the French, however, the occupation of Tafilalt would deliver the last of the three major Moroccan capitals which would, of course, send vibrating sounds across
Morocco and thus boost their prestige. To establish order and the rule of law, they had to eliminate the sedentary dissident qSars as well as the nomadic Berber and Arab tribes gravitating around Tafilalt. The occupation of Tafilalt was seen as the first act in a series of a theatrical drama that would open the door to the ferocious Jbel Saghro and the High Atlas. In reducing the Tafilalt and Jbel Saghro, the French would rejoin the Atlas Mountain communities to the already pacified territories and tribes of Daddes and Dra’a ruled by the French collaborator T’hami El Glaoui, Pasha of Marrakech.

A key event was the Jbel Saghro war, particularly the Ait Atta’s cause célèbre the Jbel Boughafer Battle, in the spring of 1933, in which the natives’ short lived mountainous guerilla tactics outshone the adversaries. This French loss was quickly reversed by the devastating French bombardment of qSars, tents, and herds. Fighting intensified, turning the waters of the Aqqa Noulili creek bloody red, testifying to the resolution of men and women to defend their dignity and the honor of the tribe and the herd—2,000 casualties and a drastically reduced herd size from 25,000 to 2,500 heads in 42 days of warfare (Huré 1952:118).

The Ait Atta finally submitted to the pacification program on the condition not to be ruled and taxed by the Pasha of Marrakech, a condition the French happily accepted since the thorn of the Ait Atta was finally out of their way. The French could now behave as they pleased in the vast Moroccan Sahara and even dream of the tran-Saharan road linking North Africa and the French Sudan, a strategic and vital means of communications, if need be, to counter German maritime quarantines in the Atlantic.
Prior to pacifying the Tafilalt, the French colonial policy consisted of strengthening its military positions and establishing indigenous posts around Tafilalt for political and anthropological collection of data on the social organization of the natives. With high powered anthropological work reenforced by recruitment of native collaborators and informants, the colonial administration practiced a-step-by-step policy “to bring the indigenous communities to reason” and to bargain tranquility for anarchy. Tafilalt would later feel the echoes of this policy tainted, here and there, by skirmishes with dispersed pockets of resistance. First, came the occupation of Touat (1881), Abadla (1907), and Tabelbala (1910) to the southeast, and, the Boudenib area to the northeast (1908), the Rich area to the north (1916), and Tudghat and Ghris (1912-25) to the east isolating Tafilalt.

In 1917, the French would give in to the caliphate’s request for military help to maintain his authority and suppress the rise of fanatic religious groups and the never-ending intertribal nomadic pillaging of the sedentary qSars. The French established a scouting mission in Tighmart, a qSar in the middle of the palm grove. This move would invite hostility of the neighboring nomads believed by the French to have been infiltrated by the German propaganda and mobilized by self-proclaimed marabouts. Harkas or armed movements were organized to chase the “rumis and nasara” or Christians from the palm grove.

The most important movement or Harka rallied behind Si Moha Nifrouti Samlali,
the marabout of the Ait Atta and his assistant Belqacem N’gadi. In 1918, the colonial officer and interpreter, Mr. Oustry, would be assassinated in the Tighmart Garrison and tensions heightened. The Nifrouiti Harka stormed the Tighmart Garrison, known as the Battle of Gaouz, dealing the French a psychological blow to their military supremacy and forcing them to evacuate the palm grove. The French retreated to Erfoud, a town 30 kilometers due north, and in retreating the news traveled along the Ziz Valley and the prospects for a swift victory over the uncontrolled territory worsened for the French. Harkas erupted all over the landscape and French controlled areas were subjugated to violence fanned by the winds of Nifrouiti’s revolt and movement, and looting by the marauding opportunistic Harkas increased.

Belqacem N’gadi would later kill Si Moha Nifrouiti. He took over the leadership of organizing Harkas and used nomadic alliances against the “dogs”. His efforts of jihad would produce a decade of terrorizing and pillaging the locals who submitted to the French by the end of the twenties, just to be liberated from the injustice and abuse of the “chief agitator,” Belqacem N’gadi.

From 1918 to 1932 the palm grove’s landscape would become a ravaged battlefield culminating in the destruction of rebellious qSars, their productive labor and fields, the irrigation infrastructure, and date palms. The Rif resistance led by Abdel Karim Al Khattabi between 1921-26 against the Spanish and later the French in northern Morocco also contributed to the political and religious effervescence of Belqacem N’gadi and his unruly pillaging Harkas in southeastern Morocco. From their high mountain
Erfoud post, the French put in place a policy of terror and devised a water policy to punish their enemies, thus eliminating farming and causing abandonment of large tracts of the palm grove.

For instance, the French water politics diverted the Ziz river waters into the Amerbuh tributary, southeast of Erfoud, depriving the lower palm groves of their vital water. This policy also instigated inter-village conflict especially when one or a set of villages were dissidents, resulting in violence and destruction of irrigation infrastructure between pro and anti-French qSars. The degradation of the palm grove was exacerbated by the double impact of ground battles and air bombing the villages and their irrigation facilities.

In conclusion, the 14-year period of colonial resistance affected the farming systems in three ways. First, using the palm grove as a theater to wage war and manufacturing drought instigated by water starvation and abandonment of productive lands exacerbated the vulnerability of the local agro-ecosystem; second, the policy of terror, from 1918-1932, created a forbidding climate of insecurity and social violence and disintegration, taxing the maintenance of intensive agriculture whose productivity rested on inter-village and district communal labor; and third, the politics of rewarding and favoritism of Arab and Berber notables intensified and perturbed social stratification within and among communities.
The Stratified Ethnic qSars of the Ziz Valley: A Deliberate Outcome of Ecology and History

The brief reconstruction above of the historical role of the Shurfa and Murabitin coupled with the rise of the Berber confederations can be viewed as a chronicle of competition for scarce resources in a highly fragile environment, factors that led to the cohabitation of various ethnic groups in the Valley's qSars. The Ait Atta and the Ait Yaflman, two major Berber confederations, dominated the upper and lower pasture and agricultural lands of the Ziz Valley. Their first language is Tamazight, one of Morocco's three main Berber dialects. The rest of the population speaks Moroccan Arabic, while Reguagua blacks or imlwan speak Tamazight.5

By the end of the nineteenth century the lower and upper Ziz came under the control of the Ait Atta and Ait Izdey. According to the local reconstruction of oral history, the Ait Atta, specifically the Ait Khabbash tribe, entered the Ziz Valley, the Rtbat middle stretches of the Ziz, at the time when France embarked on its colonization of Algeria in 1830.6 For instance, the Ait Khabbash together with the Ait Umnasf in the Rtbat region occupied sixteen qSars or villages by the end of the nineteenth century (Dunn 1977:93 and 1972; Mezzine 1987). The Berber aggression was directed towards the control of the agricultural resources more than the occupation of pastures. The

5 The three Berber dialects are Tamazight, Tarifit, and Tashlhiyt.

6 Moha ou Hadou, a 75 year old member of the Ait Khabbash, claims that the Ait Khabbash entered the Ziz Valley, Rtbat to be precise, when the French invaded Algeria in 1830 (Interview, Zaouit Amelkis, August 15, 1991).
Berber nomads never regarded cultivators, Arab or Black, as their social or political equals. Their strong sense of ethnic superiority over sedentary Arabs and Blacks dictated that all men of the soil were to be subjected to domination and coercion.

Social stratification is well defined in the ethnic and spatial division of the qSars’ layout (ighrman in Berber). The village’s community and hierarchical chain of being is made up of seven ethnic groups: Shurfa, Murabitin, Berber, Ahrar, Haratine, Reguagua and slaves.\(^7\)

\(^7\) The origins of the population of the valley has been a matter of contention in the literature concerned with North Africa. Berbers or Baraber or tabnau mazigh, the free people or pastoralists, are the ancient inhabitants of North Africa as the author was taught in his third grade history class. The literature found in the library or khozant of Zawit Sidi Hamza, a religious lodge established in the last quarter of the sixteenth century, in the High Atlas, particularly, kitab al ahya wa l’inti’ash or the Book of the Surviving and Subsistence, a compilation of various letters and reports written by the Zawiya’s religious personnel and scribes at different times about the matters of the day, contains a few pages reiterating previous literature and adding new information, here and there. Edrissi (1968:65), for instance, reports that the Berbers are originally from ancient Palestine who migrated to the far western parts of the Maghreb after their ancestor Goliath was killed by King David (see also l’Africain 1980:10-17). After a long speech, the author of al-ahya wa al-inti’ash, particularly the section, Information on Countries or buldan, Al Ayashi Abdullah Ben Umar, traces the origin of the native Baraber to Goliath or Jalout in Arabic. When Goliath was killed by David or Sidna Daoud, he left four sons: Midoul Ben Jalout, Malou Ben Jalout, Baibi Ben Jalout, and ‘Atta ben Jalout. Midoul had 5 sons and are the ancestors of the Ait Ihya, Ait Hdidou, Ait Moussa ou Hadou, Ait Morghad, and Ait Youmour. Malou Ben Jalout left six sons who are the ancestors of the Zayan, Ichqirn, Ait Youssi, Ait Soghman, and Ait Sa’dan. ‘Atta had six sons and are the progenitors of the Ait Wahlim (original inhabitants of the Dra’a and Hsiya), Ait l’zza, Ait Unbyi, Ait Khabbash, Ait Isfoul, and Bni Mtir. Baibi ben Joulat was killed by the Arabs when he was still a young burning him by hot pieces of iron. This tragedy left a profound impact on his brothers and sisters to the point that they took to the habit of tattooing their faces and carrying fetishes to tie their clothes, placed on parts where their ancestor was wounded, to mourn his death. Since then, the Arabs became the hereditary enemies of the Berbers.

As for the Haratine’s origins, Al Ayashi tells the story of one Moroccan Sultan who ventured into Bilad Sudan, one night among many other nights, only to find himself and his army
The three prestigious classes in the village are the Berbers, the Shurfa, and the Murabitin. The Berbers represented the military and political group, a base from which they extended protection and domination of the other groups. The Shurfa and Murabitin encircled by the Black King’s army the next morning. To get out of this miserable situation, the Moroccan sultan thought of a quick story and told the King of the Blacks that he came to offer him the hand of his daughter in the sunnah of God and his Prophet. The King of the Blacks accepted the offer and pledged no harm. To return the favor, the King of the Blacks offered the Sultan seven “srabbis” or swarms of blacks. On his way back to Morocco, the sultan was full of satisfaction and joy, and that’s how the Haratine arrived to the Maghreb. Perhaps, what the author has in mind, here, is the Sa`diyin invasion of the Sudan in the middle of the sixteenth century and procurement of slaves and not Haratine. Besides, the etymology of the word Haratine means many things and has evolved through time: from the root of the Arabic verb- haratha-, to plant, one can say that these people were referred to by the conquering tribes as harathine or cultivators of land which, could also imply that they are the ancient inhabitants of the Saharan frontiers since its desiccation. The other meaning is derived from breaking down the term Hartani into two components hor thani, two separate words meaning the second free people as opposed to freeborns or Arab Ahrars or commoners. In Berber, however, the black population is referred to as iqbiyn singular aqbliy meaning the people of the East or the inhabitants of the southeastern oases, a term that could have been coined during the invasion of the Berbers of the sedentary communities composed of Haratine and Arab commoners in the seventeenth and eighteenth centuries. Iqbiyn are, in turn, divided into iqbiyn imalalan or White Easterners who own land and iqbiy ungaln or Black Easterners who have no access to land and thus subject to subordination, the Haratine. Iqbiyn imalalan are also called qbala, they are of Arab descent such the Beni Hcine who populate a few qSars around the Rich area and the Ahrars. Aqbliy in Berber or qbala in the Moroccan Arabic dialect of the area, darija, is also used to define the East or Mecca, hence the influence of Islam and the daily five prayers performed facing the qiblah or Mecca. In other Berber dialects such as the one spoken by Ait Sgherushen the term ahardan which is closer to Haratine refers to a dark skin complexion person. The term Haratine does not exist in Arabic, and this suggests the Arabization process of the Berber term undergoing a transformation from its original form of ahardan to the locally arabized version of Hartani, a linguistic evolution that testifies to the Arabization drive of Islam since the eighth century and the influence of the Arab Banu Ma`qil tribes in the thirteenth century. Outside the Tafilalt, the Haratine are referred to as drawa, natives of the Dra’a Valley, an oasis to the west of the Ziz Valley, or `azzi plural `awaza Bombara in reference to the Bambara people of the Sahel.
represented the rural intellectual groups. The Shurfa are believed to be descendent of
the Prophet Mohammed through the line of either Idriss al-Awal of Fez or Mulay Ali
Sharif of Tafilalet. The former was the founder of the first Arab dynasty in Morocco in
the ninth century (who built the city of Fez in 892 A.D.). The latter was the founder of
the Alawite Dynasty in the seventeenth century and still rules Morocco. They are
entitled to a number of communal privileges and personal immunities.

The Murabitin claim to be descendents of holy men who were revered as saints.
The living members of a saint lineage are responsible for the maintenance of his shrine
(Zawiya) and for the administration of gifts of money or heads of sheep/goats donated
by the followers of the saint. The difference between them and the rest of the population
is their role as peace brokers enhanced by their inherited symbolic capital of baraka, the
quality of divine grace. Because of their baraka, the Murabitin and the Shurfa serve as
respected and credible men in deciding and mediating tribal, communal and personal
conflicts (see Gellner 1969).

The fourth class is known as the Arab Ahrar meaning "freeborn". The Ahrar
represent the free cultivators. The Ahrar group distinguish themselves from the lower
Haratine group by pointing to their lineage organization and their fair skin. The fifth
class is the Haratine, which carries most of the menial work in the village and has low
social status in the eyes of the other classes. Most of them have black skin and Negroid
features. They usually work for a fifth of the crops which they plant and harvest. Most
of them are landless. The term akhmas, which refers to someone who works for a fifth
of the harvest, is used as a synonym for the Haratine.

The sixth group is made of Rguagua. Most of them are also landless. The only difference between them and the Haratine is the fact that they speak Berber or Tamazight. Rguagua are newcomers to the upper Ziz valley. Because of recurrent cycles of drought, they migrated to the upper Ziz communities or were brought by Berbers to cultivate and work land. They trace their history to the lower end of the Ziz Valley, occupying the area of Alnif and Msisi between Rissani and Zagora. Reg, and hence their name. They are known to have practiced Henna cultivation. Finally, there were the slaves or ismkhan (in Berber). Slaves are black and thought of to have originated from bilad al-sudan. Slaves worked as domestics and shepherds. The slaves were integrated into households and tents of the families they served and usually had personal ties with their masters. For this reason a slave had a higher standing in the eyes of a Berber or an Arab than the Haratine.

The valley’s qSars are resided by ethnically diverse groups; however, very few qSars are inhabited by the same lineage or tribe. The Upper Ziz Valley, from Rich to qSar Meski, historically fell under the protection of the Ait Izdey, a tribe of the Ait Yaflman confederation, and is a space dotted by ethnically diverse qSars. From Meski to Dwira belongs to the Ait Khabbash and Ait Umnasf, tribes of the Ait Atta confederation, represents another stretch of braided communities along the river inhabited by a mix of Berbers, Shurfa, Murabitin, Haratine, Rguagua, and former slaves.
In the Tafilalt Plain, the Arabs and the Ahrar and a minority of Ait Atta Berbers co-exist. The Ahrar are mostly concentrated in the Tizimi palm grove, Jorf and Hannabou inhabited by Arab Sbbah. The Idrissid and the Alawite Arabs are mainly found in and around the qSars surrounding the historical site of the ancient city-state of Sijilmassa. Despite the nomadic alliance and the partition of the settlement space, one encounters Berber qSars in the middle of an Arab or Ahrar ocean, and also Haratine and Jewish qSars (in the past) in Berber and Arab zones. The qSars of the Middle and Upper Ziz Valley, for instance, testify to Berber occupation and domination over a heterogeneous sedentary population that had no choice but to accept an imposed hierarchical code of social organization of village life anchored in an ethnic mode of production and sustained by the exploitation of the low status ethnic groups: the Haratine.

In conclusion, the valley's ecological ills and ethnic stratification are rooted in its tumultuous history conditioned by political instability, a hostile environment, and the encroachment of European imperialism. The traditional social organization of the valley's human settlements are the product of this long evolutionary drama played on a fragile and hostile stage whose heroes, the Arab Shurfa and Murabitin and the Berbers, were bent on employing the seeds of the Koran, economic clout, and power to maintain peace and order and to squeeze labor and extract economic surplus from the Haratine. These traditional social arrangements of the Ziz Valley's qSars are the subject of the next chapter.
CHAPTER III

Introduction

From the Tamasint Plateau, a stony, brown and flat plain with meager and spotty vegetation, the Ziz Valley and its qSars hugging the palm grove stand to boldly express the antithesis of a denuded, bone-dry desert space stretching in every direction only to be halted by the semi-circle blending of earth and horizon. The valley is a twisted ribbon of greenery nested between two mountain chains: the sound of rippling voices dissipates with the layer of blue smoke lingering above the valley, and the density of date palm trees fills one's eyes, mixed with olive and fruit trees.

In the midst of this green thickness, a meandering silver sight imposes itself on the observer and the square and rectangular fields crowd its shoulders. the Ziz River. The qSar's layout is dominated by the flat threshing areas in the middle of which posts are planted. Next to the threshing areas lies the cemetery and the sacred grounds of local saints. The cemetery is crowded with flat pieces of stones erected vertically at both ends of each earthen tomb pointing eternally to the Saharan skies. These grounds demarcate the outline of the village's spatial organization. This same physical layout, however, is dominated by the white adobe mosque domes and reddish minarets, high above the compact settlement of the community, engraving the landscape on both sides of the river. In the first section of this chapter I examine the built environment and
spatial organization of the qSar, and in the second section I discuss the qSar's pre-colonial traditional social organization.

The qSar and its Spatial Organization

The etymology of the word “qSar” is derived from the Arabic word “qaSr” meaning a royal palace or garrison. During the Islamic invasions of North Africa and Spain, the qSar meant a military garrison from which planning strategies of warfare in the name of spreading the Islamic faith were devised. In the Sahara and on the southern slopes of the Atlas Mountains, however, the term qSar refers to fortified and walled villages. They are called ighrman (sing. ighram) in Berber.

Along the valley, the qSar is the oldest form of rural housing. In response to concerns of dissidence and a traditional level of technology, the qSar was conceived as a defensive strategy to protect its residents and secure subsistence from agriculture based on communal management of property and labor mobilization. Local history and tradition report numerous stories of pillaging and attacks between various qSars. Some qSars defended themselves while others opted for nomadic protection. The defense and protection of the qSar meant also the protection of the fields and the irrigation network.

A thick earthen or adobe wall, five to six meters in height and 60 to 80 centimeters in width, belts the squared structure. Inside the walls of the qSar of Zaouit Amelkis, for example, houses share walls and there was no stand alone unit. In the pre-colonial period, the qSar had only one main gate and through it people and livestock entered and exited under the watching eye of the door man, abuwwab. The gate is a
large heavy wooden door covered with metal parts still bearing the marks of gunshots from the unruly days of tribal warfare. The arch frame is decorated in vernacular architectural designs in the shape of distorted white colored Christian crosses facing the east. Shady and breezy benches seated in wide courtyards in front and inside the qSar make suitable and tranquil places for old and young male adults to relax between prayer times and field work, and also chat away the hot hours of the day.

Once inside, the mosque and its well are seated to the right of the communal yard. The mosque is not only the place of worship but also the center of religious education. Without the mosque the cohesiveness of the community would not exist. The mosque has a \textit{fqih} to lead the five daily prayers and the \textit{muadhen} or prayer caller to fetch wood, to heat water for purification, and to clean the mosque. For his religious services to the community, the \textit{fqif} is provided with the right of use of the \textit{Habous} or mosque lands\footnote{Mosque land in southern Morocco refers to fields, trees, and houses donated to the mosque’s fund for reward in the after life. This fund was and is still supervised by the \textit{nadhir} or manager of the Habous or pious foundation. He is responsible for auctioning mosque property, keeping records of it, maintaining the mosque, and providing a trimestrial remuneration for the \textit{fqih}. Some of this property’s produce is used as alms to feed the poor and the blind locally and regionally.}; he is entitled to a half \textit{taggurt} and a half liter of olive oil from every batch of olives pressed in the communal press. \textit{Taggurt} is local unit of measuring land and evaluating olive and date production. It is equated with an area taking 90 kilograms of seeds. Since the \textit{fqih} was the only literate person he was also responsible for keeping records of the olive press. He was exempt from communal work and because of the
holy status of the *fqih* and the seclusion of the Shurfa women, a large portion of public activities were done by the Haratine. The prayer caller also had access to a third of a *taggurt* of mosque lands for use and a quarter of a liter of oil for every batch from the communal olive press.

Besides its sacred prayer room or *bit Allah*, the communal well, and purification rooms, the mosque houses the Koranic school or *akharbish* and the *aHanu* or room of the mosque to accommodate the boarding of the itinerant Koranic teachers called *murattibin*. These teachers taught writing, arithmetic, and memorization of the Koran to pre-school and other children. Unlike the *fqih* and the prayer caller, the *murattibin* were not entitled to mosque lands and other privileges. They were fed by the village, for which households took turns to feed them. They stayed no longer than a year before they returned to their home or to another assignment in another village. At the end of their one year tenure, their students went around the village reciting Koranic verses, house by house, and gathered *sadaqa* or alms for the teacher to take to his native village.

Across the mosque a series of retailer's stores, a blacksmith and a communal sharpening stone make a lively part of the courtyard. From this same yard the main streets travel through the squared plan of the village and these main thoroughfares give way to cul-de-sac lineage-based sections of the village. These streets are narrow, dark, and covered for protection from the debilitating sun and sand storms, with shafts of light here and there. Each house has a courtyard which conserves and retains fresh air inside
the unit. The spatial organization of the house reserves the first floor for large livestock (cattle, mules, and donkeys) and a part of the second floor, the residential area, for small livestock (sheep and goats), given that rabbits and hens roam all over the house.

The wall sharing of the residential units reduces the cost of construction and reduces the use of farm land for housing. The qSar is built with adobe, a mixture of compact earthen material, water, and hay. The walls of each house are built out of *lluHu*, a local technique of construction involving pouring mixed soil and water into a rectangular wooden structure and pounding it to make compact walls. Once the walls are in place, they are coated with a layer of adobe mix, helping the residential quarter to keep warm in winter and cool in summer. Built out of local materials and technology, the qSar illustrates how indigenous ways had adapted to a resource scarce base, as well as a defense against outside pillaging and attacks. The qSar is the result work of households and families who came together to establish secure and self-sufficient corporate communities (see Figure 3.1).
Figure 3.1. Village Plan of Zaouiat Amelkis
Legend:

1. *Imi n’ighram* or the village front yard
2. The communal alfalfa field used to feed the communal bull
3. The village’s main gate
4. The gate’s guard room or *abwwab*
5. *TamSriyt* or the communal room, located on the second floor above the guard’s room. In pre-colonial times, this room was the seat of power of the local assembly. It was also used by the assembly’s guests as sleeping quarters.
6. *Arkbiy* or caravancerais
7. *Ahanu n’taqbilt* or jail cell
8. The old mosque
9. *Tangir* or the room of ablutions
10. *Akharbish* or the Koranic school
11. Mosque rooms used by itinerary religious teachers
12. Purification area within the mosque
13. Prayer room
14. Mosque’s drainage canal
15. The mosque’s yard
16. The blacksmith shop
17. Small retail shops
18. The main street of the village and housing
19. Cul-de-sac alleys and housing
20. The place of the communal bull
21. Watch towers
22. The communal sharpening stone
23. The communal olive oil press
24. *Horm* or livestock pens
25. Threshing areas
26. Cemeteries
27. The new mosque
28. Health dispensary
29. New housing
30. Dirt road
31. Modern irrigation canal
32. Traditional irrigation canal
33. The Ziz River
34. The palm grove and its fields
As a corporate unit of residence the qSar cannot be separated from the palm grove, the threshing floors, and livestock pens that comprise its outside spatial organization. The palm grove is the ensemble of fields and trees owned and managed by each qSar. These fields, under the valley’s date palms and olive trees are intensively farmed, the palm grove being fragmented into myriad manicured parcels crisscrossed by a meticulous network of irrigation canals and ditches. Wheat, alfalfa, and vegetables grow under olive and date palm trees, fruit trees and vineyards, and olive oil presses.

Each qSar has its palm grove and its specific boundaries. Land tenure is threefold: mulk or private, Habous or endowed property, and al-`aSi or infertile. The size of the palm grove is determined by its ecological constraints. In the narrow parts of the valley, palm groves are long and follow the river’s banks and the qSar is often located on an infertile hill overlooking the agricultural fields. In wider areas of the valley, however, the qSar is an enclave within the surrounding palm grove.

Land use within each palm grove follows an onion-ring like set of belts of agricultural activities. In the Middle Ziz Valley area, for instance, the qSars are surrounded by a succession of rings of agricultural zones. The first ring is the walled gardens located in front of the main gate and around the ramparts of the village. Used to grow vegetables and fruit trees, this belt is called urtun in Berber and jnanat in Moroccan Arabic. The second ring is dedicated to the cultivation of alfalfa and is characterized by the dominance of olive trees. The third ring is dominated by cereals, date palm and other trees. The fourth ring is comprised of communal fields that
irrigation rarely reaches; these fields are called *al-bur* lands, devoid almost of any trees, although barley is sown in rainy years. The fifth ring is also communal lands used for grazing, *amardul*, and found outside the palm grove in the nearby hills and along the surrounding mountains and plateaus.

The spatial division of the qSar and its palm grove into various zones are the outcome of ecological and adaptation to an insecure environment. The gardens and the alfalfa fields are close to the qSar to assure the inhabitants of food security and the well being of the livestock. This spatial arrangement also reinforces the autonomy of the communities in uncertain times and during warfare. The organization of the qSar for its defense complements the organization of the palm grove and its irrigation network. Ruins of old watch towers are not uncommon in the middle of the palm grove, around natural springs on top of surrounding hills.

The second element in the spatial organization of the qSar is the threshing floors or *inrarn* (sing. *anrar*), which dot a large part of every qSar. This space is used for threshing and winnowing cereals, as well as drying corn and dates. Each household has a small, flat parcel no larger than 100 square meters. Each parcel has a wooden post in the middle from which mules or donkeys are tied to a rope to thresh cereals. The threshing grounds have a guard called *anmutar* in Berber and *al-HaDDay* in Arabic. He pitches his tent, made out of palm fronds, and guards the produce on the threshing floors night and day from April to December, following the harvest calender of cereals and
The guard is paid in kind and the amount he gets is liberally defined by each threshing floor owner. After the end of the harvest, the hay residual, called taqqayt, blown by the wind during threshing and winnowing and trapped in the little arroyos shouldering the threshing floors is assessed by the qSar's assembly and sold to interested parties. The swept hay is used for feeding livestock and fortifying manure (including human waste). The threshing floors are not only limited to agricultural related activities but are also used for social functions such as marriages and communal rain prayers.

The final spatial element is reserved to areas where livestock, particularly bovines, are penned to get sun. The defensive needs of the qSar led to the creation of communal spaces within and outside the qSar for agricultural and livestock uses. The household-penned livestock needs sun, especially in winter. For the small livestock, it is usually taken to the roof of houses. For the larger livestock, however, households have access to collective areas outside the ramparts called Horm. The Horm area is reserved for collective use and private construction of housing is prohibited. Households have built small mud units for livestock they bring in the morning and return home in the afternoon. These units are not covered; in each unit there is a built eatery and iron sticks planted in the ground, along with ropes to tie the animals. While

9 The threshing and drying calender is as follows: dates from October to November, drying and airing manure from December to March, barley in April, fava beans in May, wheat in June and July, alfalfa drying for winter feed or seeds in July and August, and corn from September to October.
this section describes the spatial organization of the qSar the next section discusses its traditional social organization.

The Traditional Organization of the qSar

The qSar is not only a communal arrangement writ large in its spatial elements and defensive architecture but it also makes what we could label as a closed corporate community whose management and viability was based on locally crafted communal institutions of governance. The management of the qSar and its resources were governed by an ethno-political and economic organization. This section examines the political, economic, and social organization of the qSars communities in pre-colonial times.

The Socio-political Organization of the qSar

As corporate communities, the qSars started with the settlement of different tribal lineages, ethnic groups, and religious brotherhoods. For these reasons, we encounter along the valley Arab qSars, Berber qSars, Haratine qSars, and Zawiyas. qSars sheltering different ethnic and tribal lineages are the product of ecology and political instability discussed in Chapter II. Some qSars, however, were planned and built by the government or Makhzen to represent its interests and collect taxes and store grains. The qSar of Abbar in the Tafilalt Plain, near Rissani, is one example among many that were constructed by the Makhzen (Jacques-Meunie 1959). I will be discussing the social organization of the Middle Ziz Valley qSars that came under the control of the Ait Atta Berber sub-tribes in the eighteenth and nineteenth centuries in
general and the qSar of Zaouit Amelkis in particular, one of my field sites.

Once the Ait Atta established their control of the qSars, these qSars were subjected to the aHkams or rules of governance of the Ait Atta confederation. These rules were either transmitted orally, as in the body of customary laws of azerf, or often written in camel skin shrut n-khams khmas, rules of the five-fifth composing the segmentary lineage organization of the Ait Atta nomadic tribe. The oral and flexible characteristics of customary law are largely responsible for minor changes and adaptation of the azerf throughout the Ait Atta land or timizar. These documents were also known in other parts of Ait Atta land. For example, in the asif n-rtbat or the Middle Ziz Valley, as ti`aqidin (sing. ta`qqit) or al-qa`ida n-Ait Atta, a term derived from the Arabic qa`ida or way, or as ait al-Haq, people of the truth.

These documents are largely inspired by the azerf of the confederation and leave room for sub-tribes to adapt to the ethno-ecological constraints of sedentary life in the valley. Though the Ait Atta were illiterate and formed a super nomadic tribe based on nested alliances and opposition, the coded customary laws were dictated to the scribes of the Zawiya, the holy lineage, or to the imam or fsqih of the qSar the first settlers conquered.

Berber customary law or azerf differs from Muslim law or ait shra`, or people of the shari`a, the basis of the Islamic jurisprudence. While Muslim Law is believed to be divinely inspired, and perhaps frozen, and carried out by highly educated and trained judges, al-quDat (sing. al-qadi), azerf is flexible to adapt to various Berber zones and
was administered by a group of illiterate notables called *inaHkamen* (sing. *anaHkam*) or a tribunal of elderly men of profound knowledge of the *aHkams*, the rules of the Ait Atta called *ait l-`ashra* or people of ten (Hart 1981).

The political life and administration of the internal affairs of some qSars are documented in local legal treatises and customary laws called *azerf* and *ta`qqit* in Berber and *shurut* or conditions in Arabic. While *shurut* implies the conditions set on the conquering groups by the sedentary population, the *ta`qqit* is the result of the conqueror's determination to subject the conquered. Historically, the qSars's livelihood depended on subsistence agriculture and exchange with nomads. Throughout this section, my ethnographic work is informed by the interpretation of the Ait Atta's *azerf* by Hart (1981) and the *ta`qqit* of qSar al-gara, in the middle Ziz Valley, discussed by Mezzine (1987).

The *ta`qqit* document dates to the late nineteenth century and reports qSar al-Gara's constitution and rules administering the ethno-political life of the village, management of the palm grove and irrigation, and sharecropping. qSar al-Gara came under Ait Atta's dominance in the late eighteenth century and still reflects the power relationships within the community as well as it illustrates the mechanisms at work in a stratified society with the Berbers and the holy Arabs on top and the Haratine at the bottom, an essential characteristic of most qSars controlled by the Ait Atta along the valley.

The internal and political affairs of the qSar were administered by the local
agnatic lineage based council called taqbilt or ajmu'. Each lineage or ethnic group occupied a certain part or street of the village. The ajmu' was composed of id-bab n-imuran or lineage representatives headed by amghar n-tmazirt, the country or land chief. The amghar was elected every year from a different lineage. The id-bab n-imuren, meaning the people who own land and shares of protection of the non-Ait Atta groups, were nominated to the council by the amghar but not appointed by the members of their own lineages.

For instance, in Zaouit Amelkis, the Ait Khabbash sub-tribe was divided into six lineages or swadis: Ait 'Amar, Ait Burk, Ait Taghla, Ilhiane, Irjdaln, and Izulayn. These six lineages made the taqbilt or ajmu' of the qSar. Each year, after the wheat harvest, they gathered to elect the annual amghar or chief of the community. The office of the chief rotated among the lineages. Once all the lineage representatives, as well as a the fqih of the mosque to bless the gathering with benediction, were assembled in the ajmu' s aHanu or room, the elections started. The candidates from the incoming lineage sat on a red carpet and waited while the electors from the other lineages went outside to discuss their choice of the individual to be elected. Once the electors made their decisions, they came back, walked in a circle around the candidates, reported their decision to the fqih, and finally the fqih put his finger on the head of the person who was about to assume leadership.

The newly elected chief sat down, and usually cried and prayed to God to help him do justice, to do no harm or to not falsely accuse any member of the community.
His predecessor then walked forward to him and put a branch of alfalfa in his turban to confirm his chieftainship and to symbolize the hope for a bountiful harvest during his tenure. The *fqih* gave the new chief some milk and dates for his inauguration but, while the chief is drinking his milk, the *fqih* would jerk the bowl of milk so that is spilled on the chief's *a`ban* or robe. This act meant the new chief's imperfection in office, the fragility of his power, and stressed the fact that he was no better than any one else in the community.

The annual elections of the *amghar n-usguas* (annual chief) by the lineage constituency is what Gellner (1969) labels "rotation and complementarity." This process safeguarded the political system in two critical ways: the electors could never elect themselves and its annual rotation acted as a check against any abuse of power and corruption. Neither candidates for the office of the chief nor the members of their lineage had the right to vote. Thus, through this process of complementarity, the political system remained immune to any temptations of hegemony of one group over another. A dominant concern of the Ait Atta was never to let one head rise above the others as De Monts de Savasse (1951) observed and what Hart calls the "jma`a syndrome, the syndrome of collectivity" (Hart 1981).

The duties and decisions of the *amghar* were those of administering internal and external relations with neighboring communities and other clans. He was the person responsible for the defense of tribal territory and communal interests. It was he who organized *Harkas* or armed expeditions in times of war and he supervised and guided the
settlement of disputes between lineages and neighboring tribes. For his prestige and services to the community, the amghar got a portion of the fines levied for unlawful infractions such as murder and theft of produce in the palm grove or livestock.

The main deliberations of the ajmu's representatives of the agnatic lineage groups of the sub-tribe centered on the communal management of the village's cultural and economic life. The ajmu's concerns centered on the following themes critical to the welfare of the qSar community and palm grove: 1. to elect the amghar or chief of the year, 2. to settle divisions of water and land, 3. to organize Harkas or war parties, 4. to administer any issue dealing with the Habous' lands and trees, establish the distribution of the 'ushur or religious tithe, and the share of the fqih of the mosque, 5. to enforce order, fines and banishments, and 6. to establish rules for sharing the costs of the qSar's guests.10

As was customary among other Berber confederations in the rest of Morocco, any mature male Atta was eligible to participate in the election and political life of the ajmu. Members of holy lineages of the Shurfa and the Murabitin Arabs, or Haratine never took part in the deliberations and meetings, which were held upon notification

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10 According to local tradition, guests are divided into those who were invited by the ajmu and the wandering poor or what they call those who are knocking on the doors of God or guests of God. The invited guests of the ajmu are called analis and households of the village take turns to feed them and provide a sleeping room. The guests of God or the poor usually slept in the tamSriyt, a sort of a hall just as one goes through the main gate of the village, or in the tanjir of the mosque, the furnace area for heating water for purification. For protection wandering poor women would usually ask a household if they could sleep in front of the house and they are usually granted that right and the same household would feed them. The wandering poor are not fed by household turns but by anyone who wishes to do so.
from the *amghar* on a specific time and place. The rest of the population was absent from the political life of the village, particularly the Haratine who do the sharecropping. The Haratine were tied to a particular lineage to whom they sacrificed for protection from abuse, but not political representation.

Despite the démocratie-témoin aspects of the Ait Atta’s political system and the inherent dislike of political hegemony, the management of the qSar’s affairs was based on policies that excluded the Haratine and the Arabs from participation in the running of the community. This exclusionist policies were seen as critical to the preservation of the Attawi political life. Keeping the Haratine out of the *ajamu* and viewing them as unqualified for representation stems from the fact that the Haratine would disturb the system and spoil the interests of the conquerors. Naturalizing the Haratine’s institutionalized dependency reenforced the feeling of solidarity and sense of egalitarianism among the Berbers, therefore conferring upon themselves the status of nobility and prestige. Blocking the Haratine from participation meant also a disequilibrium between population and resources in an environment marked by political violence well illustrated in the dominance of one ethnic group over the others.

**Containing Law and Order**

The violent and unstable characteristics of *blad siba* or dissidence in the eighteenth and nineteenth centuries led to the crafting of a series of mechanisms to keep law and order within and between qSars communities. As far as the external relations of the village were concerned, the institution of *arSam* delineated the limits or *lquTTa* of
each community and maintained its defense. The arSam institution stipulated that each household owning a portfolio of property (aS_I) land equal to one taggurt and a half must provide a man with a gun and a horse to help guard the village's lands. Along with the Ait Atta only members of their alliance or leff in the lower Ziz valley could be accepted in the arSam or the land of the qSar.

Despite its communal aspects, the Ziz communities epitomized societies of violence. Criminal legislation and oral traditions speak of high rates of crimes, particularly theft and murders. This violence is illustrated in the defense institutions of the village and its built environment. Harming the ramparts of the qSar by putting manure or directing water against them carried heavy fines. Opening the main gate of the qSar without the appropriate permission of the doorman was equally fined and sanctioned severely. In the days of the Ait Atta, the gate had a doorman who controlled who entered and exited and looked after the lost and found box of the village. After sunset, the doorman closed the door and made a daily roster of those who happen to be outside the walls for various reasons such as irrigation and produce theft. The doorman was armed with a gun and had the key of the door and would not open the door until one was identified or declared the family he was visiting. Households of the village took turns on the door's guard.

Violence, at the social level, gave birth to institutions of defense and criminal law which perpetuated the segregationist Berber political system. The Haratine were denied access to land. They also provided the entire labor inputs required for the
maintenance of communal infrastructure and agricultural production. The Haratine
could not exist as a social group without the protection or *tada* of a Berber lineage that
defended their interests and made them work on their lands. Their low status allowed
the Ait Atta to exploit their labor without sharing with them the surplus of their labor,
and this exploitation, anchored in protection pacts, nourished the socio-economic
development of the pre-colonial *qSars* in the Ziz Valley.

The institution of *taysa*, a pact of protection, allowed the threatened individual
the protection of the powerful. Once approved, the person will be assured of protection.
Usually this happens when an individual is banished or ordered to leave the community
for murder or rape. The integration or adoption of another person into another *qSar* is
attained through the sacrifice of a sheep or a goat or *tighersi* and the acceptance of the
sacrifice by the *ajmu*. Once the person was admitted, he was adopted by the family or
lineage of his choice.

Different from the *tada* and *taysa* institutions, the institution of *tazTTat* was
another mechanism used to protect the passage of travelers in hostile territories. The
*tazTTat* was a pact of protection for travelers and traders and not an alliance. Unlike the
life-long guarantee of the *tada* and *taysa*, *tazTTat* was only valid for a determined and
limited itinerary and always involved payment in cash by the client, the *mzaTTat*, to his
protector, the *amzTTid*. *TazTTat* was used for travelers and traders seeking the
protection of the most powerful member of the local community, usually the *amghar* of
the sub-tribe whose land they were transiting. At the tribal borders, when the trader or
traveler paid his protector, he was turned over to another powerful group or man and the
process repeated itself until the final destination.

The *tazTTat* institution was highly regarded among the Berbers and any one who
wanted to travel to the market place, *suq*, or to another neighboring tribe had to pay it.
Its importance stemmed from the fact that pre-colonial society was a society of violence
and insecurity. The *tazTTat* circumvented these concerns through the control of people
within tribal lands. As an old Ait Khabbash man said "*tazTTat* allowed us to know who
was going where and who was doing what. We got news of other places and prices
from travelers just like today's radio news, and, of course, made money."

Another institution that kept peace or *laman* throughout the sub-tribe's territory
is what is called the *tafargant* pact. *Tafargant* pacts are the outcome of the process of
sharing milk (*sarn aghu*), blood (*sarn idamn*) and food (*sarn T'am*) between hostile
tribes. *Tafargant* is usually concluded between hostile groups who were bent on
establishing friendship and peace. For instance, after a costly war, the Ait Khabbash
and the Bni M'hamed Arabs of the Tafilalt made *tafargant*. For *tafargant*
purposes, each contracting group provided a supply of milk from nursing and wet
mothers (but in the absence of mothers' milk the milk of two cows), one from each
group would be mixed in the same bowl and distributed and drunk by all the present
members and notables of both sides.

Different from the mechanisms of the milk sharing process, the *sarn idamn* or
blood sharing involved sacrificing a sheep so that the blood of the animals from each
side ran together, although blood was not drunk. In sarn T’am, each participant from each group ate from the couscous plate or aqSriy. Just as deception at oath led to tunant or dire and hellish misfortune, anyone who betrayed the terms of tafargant was liable forever to the same dire consequences.

Disputes and conflict that could not be resolved by the qSar’s council were submitted to the lower court house of the qSar of Takhyamt. Takhyamt was the first qSar to be occupied by the Ait Atta in the Ziz Valley in the late nineteenth century. It represented the first frontier settlement as well as the regional headquarters of the amghar or chief of the sub-tribe. Legal cases that could not be resolved in the Takhyamt lower court were then transferred to the superior or supreme court of the Ait Atta federation in the Jbel Saghro for final arbitration and settlement.

In conclusion, contrary to too much ink spilled on dichotomizing the history of pre-colonial Morocco into blad siba or land of dissidence and blad al-makhzan or land of the government, blad siba crafted a series of pacts and relationships to contain anarchy and disorder. These pacts and relationships, sealed among unequal ethnic groups, managed to maintain a compromised peace and order that made survival and exchange possible in the oasis environment marked by intermittent droughts, ethnic inequalities, and affected economically by the disappearance of the trans-Saharan trade. How, then, was the qSar’s community organized economically?
The Economic Organization of the qSar

The economic organization of the qSar revolved around the meticulous organization of the palm grove and its irrigation, preventing the Haratine from owning land, and the relentless quest for food security and economic equilibrium at the village level and the prohibition of economic speculation.

The Syndrome of Collectivity

The palm grove is the heart of the qSar and its main source of subsistence. Concerns about the management of the palm grove are still talked about in a nostalgic manner among today’s Berbers and Arabs. These concerns and changes that the qSars went through during the French Protectorate and since Moroccan Independence are discussed in Chapter VII. The palm grove in the past could only be safeguarded by the corporate community of the qSar. As a defensive strategy the qSar and its ajmu` crafted a bundle of rules to govern the use of the palm grove by the qSar’s residents as well as the nomads. The stipulations of customary law reported in written documents, as in the ta`qqit of qSar al-gara and oral history, testify to the determination of the Ait Atta to leave nothing to pure chance.

The palm grove had its chief, amghar n’tamazirt, to see to it that fields and produce were not subject to theft. The irrigation canals and network also had its chief or manager, amghar n-waman or n-tiruggin, who supervised the cleaning and maintenance of the canals and the dam, ugguy. The two amghars were always Berber and were appointed by the ajmu` based on their age, honesty, and religiosity, as these
attributes are essential to the just management of the palm grove. Communal institutions governed the agricultural calendar and land use and fixed the opening and closing of the palm grove. In fact, oral tradition depicts a conservative clan corporate agrarian community very jealous of its autonomy and autarky; a closed community, at least economically, where irrigated farming and livestock were the backbone of the local economy, prompting a strict and meticulous governance of the assets of agricultural production.

The legal organization of farming severely sanctioned acts such as weeding on the borders of irrigation canals and the river, unauthorized gleaning of dates, olives and other fruit, aimless circulation in the palm grove and around the gardens, bringing weeds or alfalfa into the village after sunset, and collecting of green wood. The palm grove guard fixed the opening and closing times and days for picking green dates or ablüh as well as the green olives period of bulmam or gathering olives that fell to the ground. For the gathering of green dates, ablüh, the ajmu` made a public announcement from the top of the mosque designating the days of the week and timing of gathering. For ablüh, children and women would gather early in the morning behind the door of the qSar and the doorman would not open it until the palm grove guard was present to oversee the operation. On their way back, the palm grove guard stood in front of the gate and checked everyone's basket to make sure that other produce from palm dates was not milked.

For fuel wood or iṣgharn, Saturdays were open for gathering dead palm fronds
throughout the palm grove and anyone caught with a frond outside this time limit was liable to izmaz or fines. Tamaris like trees, afarsig, growing on the river’s banks and used also for fuel and livestock feed, were also regulated, and their unauthorized cutting resulted in severe fines.

During the olive and date harvests, the village’s assembly convened to organize a timetable for both harvests in the palm grove. The assembly’s decisions were then relayed to the public crier to announce from the top of the mosque. These decisions were enforced so that theft and anarchy were avoided. If, for instance, an individual was guilty of stealing or violating the rules of the farming code, he or she was usually summoned by the palm grove guard to the ajmu` after the Friday prayer.

The ajmu` settled such matters in front of the mosque in an open yard space. There, the guilty party was called upon and cited for his or her violations. Usually the offenders were the landless group of the Haratine. After a short deliberation among the ajmu` and the palm grove guard about the nature and magnitude of the offense, the guilty person was imposed a fine or izmaz of a mud or a decaliter of grains or the choice of feeding the ajmu` and the fqih of the mosque.11 Either punishment was very harsh.

11 Just as water and soil qualities vary from one village to the next, the same holds true for weights and units of measurements along the valley. In the upper communities of the Upper Ziz Valley, farmers measure land in Hbal units and each Hbal unit equals 432 square meters and there are 23.15 Hbals in a hectare which is 10,000 square meters. When measuring grains they use the a wooden or metallic units called aqzdîr or qordiya which is equivalent to eight kilograms. They also use small metallic units that they refer to as gamila which is roughly two kilograms of grains or two a`winat, the smallest unit of measurement. In the Middle Ziz Valley, land is measured in either the hectare or taggurt unit (more on taggurt in the land tenure section below). There we encounter the mud unit, also a wooden or
for most of the Haratine since they could not even feed themselves and were very
dependent on their patrons.

If, however, the offender fails to show up for the deliberation or contest the
verdict of the ajmu`, the amghar would pick up a small stone, spit on it, and would then
hold it up against the sun to dry. The offender must accept the decision of the assembly
before the stone dries. Then, if the offender refused to go with the council’s verdict
before the stone dried, he was fined muddayn or two decaliters of wheat, corn or barley.
The stone spitting was repeated and if the offender had not accepted, his fine was
redoubled to four mdud or decaliters. The process keeps doubling until either the
offender accepted or was saved by the intervention of the lineage chief whom the
offender sacrificed on. Stories are still being repeated about families or households that
were forced to leave the village forever through this sort of on-the spot destitution,
which especially affected the landless Haratine and made them more dependent on their
lineages. It was more damaging for the Haratine in the sense that they had no grain
inventory to use as izmaz or fines and their solution was to turn to the patron for help

iron made cylindric box, and also called atmniy in Berber. Each mud is eight kilograms to the
rim and ten kilograms when it is filled to overflowing. Farmers also use full `abra or half
`abra meaning that a full `abra is two muds or sixteen kilograms or twenty kilograms. In
each mud there are ten `awinat and each `awina is almost 1 kilogram. Some farmers,
however, would use litro or liters units just as others use kilograms; for them they have the
same weights. In the Lower Ziz, in Rissani, for instance, one `abra equals sixteen kilograms
and each `abra is made out of four muds, and each mud is four kilograms. The mud unit is
four kilograms also in Errachidia, the capital town of the province, and it is sixteen kilograms
in Midelt and 32 in Itzer. It is possible that the spatial distribution of the mud and other
measurement units reflects transport costs to central markets.
which led to the accumulation of social and capital debts.

Livestock herding was communally organized in what is called tiwili or dawla, obeying the limits and the places fixed for its grazing by the ajmu`. Each village had a communal shepherd, and he was paid by a fixed rate per head. The village also had a communal bull that was fed by the community. Each household or individual coming into the qSar with alfalfa or weeds must throw a bundle to the bull, talqurt. The bull or a`jliy n-taqbilt, as it was called, was also the communal genitor for the village’s cows. The doorman or abuwwab kept an eye on the bull and made sure that he was fed and drank its water. The bull was slaughtered after 2 or 3 years or “when it starts getting out of control.” Its meat was distributed to each household while the heart, liver, fat, and guts, the essential ingredients of bulfah brochettes or what is called qayd al-wad or the mayor of the river, are sold to generate funds for purchasing and raising another bull.

In Zaouit Amelkis village, I was informed that the communal bull was taken to the neighboring village of Lkenz where the tomb of the saint Lalla Safia is buried. There the people of Amelkis and the Shurfa of Lkenz sacrificed the bull and distributed its meat to each household. They tell also of one year when the people of Amelkis delayed in sacrificing the bull to the saint, only to find out the next morning that the bull had fled to the tomb of the saint and was rubbing his neck on the walls of the saint’s dome—symbolically demanding to be sacrificed.

In the neighboring village of Izulayn, to the southwest of Amelkis, the communal
bull institution still continues. They still sacrifice the bull to the local saint of Sidi 'issa after the harvest of wheat. Territorially, the qSar of Izulayn is divided into two halves and each year one half provides tizlafin or huge wooden plates of couscous to celebrate the sacrifice of the bull as well as the end of the wheat harvest. Cooking households are then assigned to feed the non-cooking half of the qSar, and a few tizlafin are sent to feed the wandering poor called sadaqa.

The community has also a grave digger who has the right of use of the Habous field assigned to him by the ajmu for his services of digging graves and maintaining the cemetery. The assembly owns al-nna sh or mortuary equipment where the dead are washed and carried to the cemetery. The nna sh is kept in the mosque. The council also owns the communal ladder as well as the lluH boards used in the construction of walls, and permission was required for their use.

At the same time, the ajmu made it obligatory that all households of the qSar crushed their olives in the communal olive oil press, al-m SSart n-taqbilt, and prohibited the building of private presses. Olive mounds waiting to be pressed were organized spatially in accordance with the lineages or ighsan (sing. ighs) composition of the qSar. Each lineage has a long stretch of space and knew its limits. The decision as to who crushes his olives first was a matter of contention among the villagers. The potential yield of the first press of the harvest is believed to be affected by the dry crushing pit and may lower the oil productivity of each batch or TaHna of olives. A TaHna of olives equals 50 muds or 375 kilograms and fluctuates in its yield between 75
and 110 liters of oil. This concern is solved by drawing lots or *grat ilan* among the lineages, who in turn, draw lots among their members. Others, although they favor the *ilan* way, villagers still believe that one gets his *larziq*, an amount or provision guaranteed by God, no matter how dry or wet the crushing pit is. You get what God wants you to get; that is your *larziq*. The overriding obsession with defending the common interests of the qSar demonstrates a solid communal organization and underlines the power of social cohesion inside the qSar.

**The qSar's Land Tenure Organization**

The second main characteristic of the economic organization of the qSar centered on the management of the land tenure system. The land tenure code of the Ait Atta, as reported in their tradition and written documents, prohibited the fragmentation of land and denied access to non-Ait Atta except for the holy lineages of Arab Shurfa and Mrabtin.

For the Ait Atta Berbers, land tenure was the founding pillar of law and tradition, *azerf*. Land and tree tenure was virtually the decisive vehicle through which the Ait Atta's social organization expressed itself. Exclusion of outsiders was the chief operational element of the Ait Atta's construction of property, and the perpetuation of *tamazirt* or the patrimony of the community was jealously guarded by the keepers of customary law and tradition. Someone other than a member of the Ait Atta and the holy Arab lineages could never acquire land in the Ait Atta land, particularly the Haratine. In qSar al-Gara, in the nineteenth century, for example, it was prohibited to sell or
transfer land to the Haratine, and such acts, if they happened, would result in severe financial fines for both the buyer, the seller and his lineage, and the amghar under whom the land transfer took place.

Property was the primary cementing block of the “conservative closed corporate community”, and was embedded in complex contexts of violence, ecology, power, and cultural concepts to keep outsiders and the conquered from accessing it. Land tenure or tamazirt for the Ait Atta is referred to as al-asl or origin and ancestry; in other words, origin, social structure, and identity were and are still writ large in property. The concept of shafa’a or preemption, for instance, was and is still mobilized to block land transfers from Berber lineages or ighsan to non-Ait Atta groups.

In the Berber qSars, any land transactions or selling of trees had to be made public so that the right of shafa’a could be applied by distant clan and lineage members who might be away from the village during the sale. Before concluding the sale, a three week-long auctions was held in order that an absentee could have enough time to make his shafa’a claim. Practically any stranger, to the exclusion of the Haratine, wishing to buy a piece of land belonging to a certain lineage or any of its members, could offer a price. Any lineage or clan member could make a counter-offer of half that price, and would acquire the land. The shafa’a claim ensured that land remained in the hands of the clan or lineages because a lineage member’s price and blood negated those of a stranger (De Monts de Savasse 1951; Hart 1981; Mezzine 1987).

Land was divided into units of measurements called taggurt (plur. tiggurin).
After the settlement of the Ait Atta along the riverine qSars of the Ziz Valley, *taggurt* or the sum of *tiggurin* was the homestead share to which each conquering lineage or household within each lineage was entitled. Land holdings in the Ziz Valley were private property or *aharmil* (*mulk* in Arabic) in terms of its classification within the Ait Atta land tenure taxonomy. Before distributing land, the *ajmu* along with the *fqih* and outside experts or *iquwwaman*, would set out to the palm grove to evaluate the nature of terrain, surface areas, irrigation nodes and the depth of the water table. They then divide the valley (or whatever the area), into a number of different zones or *iDgharn* along the river banks: an upstream zone, a middle stream zone, and a lower stream zone.

A *taggurt* owner theoretically would have three *igran* (sing. *igr*) or fields or more depending on the abundance of land, at least one in every zone. Each field usually comprised land from the bank of the river to the marginal and uncultivated lands of the valley. The total village fields incorporate upstream lands irrigated by the main canal, then other lands irrigated by tertiary and secondary canals, and finally lands extending over the slopes above the valley and outside the irrigation network, an area called *amardul*. Fields thus extend from the river to the mountains, this diversified set of land property giving rise to the frequently quoted Berber expression of establishing the rights

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12 In general, the Ait Atta distinguish 4 types of land tenure or *timizar*: 1. *mulk* or *aharmil* refer to private property; 2. *iguldan* or pasture lands used by specific clans and subject to closing and opening regulations by the tribal confederations; 3. *bil-khir* or cultivated land that is not owned but used by the first conquering clans; and 4. *l-khla* or empty wilderness belonging to the assembly and the community (Hart 1981:104).
of taggurt owner sag islman ar udadn, “from the fish to the mouflons.”

The strategies of containing risk associated with climatic fluctuations of the area are well manifested in the agricultural calendar of each taggurt owner. In dry years, the upstream zone is devoted to the double cultivation of either barley or wheat in winter and corn in summer. In a good year, the farmer can put the whole winter crops and half of the summer crops in the middle zone. Finally, if the lower zone is very dry, he would not do any ploughing; but in a good year of heavy rains he may extend the cultivation of barley in what is called amardul or bur, rainfed areas.

According to Capt. De Monts de Savasse (1951) the concept of taggurt is one part land and one part water. It is of variable size and dimensions and subject to a host of ecological variables such as location, annual precipitation, and the amount of labor needed to extend and develop the land. In the Ziz Valley, in particular in the Ait Atta qSars, water rights are linked to rights of land. When land changes hands, water rights follow the land. Distribution of irrigation was based on the concept of mulliy or tiremt (turns). A turn belonged to each household and applied to fields and not to individual irrigation turns because, in the qSars of the Middle Ziz Valley, there was enough water. While the maintenance and clearing of the secondary and tertiary ditches or lmserf was the responsibility of the specific beneficiaries, the labor required for the upgrading and operation maintenance of the diversion dam and the main canals, the life line of the qSar, was provided on a pro rata basis of each taggurt owner. The meticulous division of property into tigurrin along the three ecological zones of the valley is ingenious and
practical in maximizing each household's chances of benefitting from the scarce and variable supply of water.

Taggurt was a portfolio of land and water in the upper, middle, and lower reaches of the river estimated to provide annual subsistence requirement of each takat or household. Despite changes in the original taggurt system that prohibited land fragmentation, taggurt has survived to our day and still remains the preferred local and traditional unit of water partition and defines the expenses and duties of each owner in the operation and maintenance of the irrigation network of the qSar. In the Zaouit Amelkis qSar, for instance, taggurt does not only refer to a standard unit of land but also evaluates olive and date production and is equated with an area taking 24 muds or twelve `abra of seeds, given that one `abra equals two muds—twelve muds of seeds and the other twelve for olives and palm dates. The measurement of tree production differs from that of seeds. Tree production is measured in what is called lwatad and one lwatd or palm tree equals ten `awinat or one mud, one ta`wint equals almost one kilogram of seeds or fruit produce. It follows from this that, for tiruggin or canals and the diversion dam maintenance, each taggurt is evaluated at twelve shhar or months and each shhar or month equals two muds of seeds or the combination of one lwatad and one mud of seeds. Tradition of the land stressed that every taggurt owner must provide an able-bodied man, atarras, and not a teenager, and a beast of burden with a zenbil or container, preferably a mule, for needed work on the main canals.

The conceptualization of taggurt into twelve shhar makes provision for the
mobilization of labor on a monthly basis to deal with the mishaps and the emergencies of the irrigation system. Small land owners who have shares of two muds must provide one able-bodied day of labor and in case this same owner has less than one and a half muds it is suggested that he cooperate and trade labor days with another owner within his lineage for the completion of his monthly labor requirements. In times of emergencies, however, such as floods that usually damage the palm grove and the irrigation infrastructure, the able-bodied men of the whole village or Had SSaym, people capable of fasting during Ramadan, regardless of land titles, must participate in repairing the system. Every household must bake an extra loaf of bread, taghrumt, and provide a bowl of olive oil to feed the labor, working on the irrigation system.

The qSar’s Quest for Economic Equilibrium and Egalitarianism

The final characteristics of the qSar’s corporate community is its relentless quest for food security, economic equilibrium, and the hostile attitude towards the market and economic speculation. The ajmu sanctioned a wide array of speculative economic activities that would create wealth. Oral tradition is replete with stories of how, in the past, a series of economic activities were prohibited and could not be practiced in the qSar. Occupations such as the butcher and the baker were not allowed to exist. These occupations were considered profit making and undermined the interests of the community. The occupation of the butcher damaged the practice of l-uzi`t or the institution of collective slaughtering. This communal institution provided those who joined to slaughter a goat with equal shares of meat without incurring the whole price of
a sheep or suffering from the market price charged by the butcher. The same rules applied to the baker. These prohibitions acted to strip the value added profit or wealth created from the transformation of primary products into goods, goods that were essential to the survival of the community. These activities were deemed as ways to generate wealth and constituted, in themselves, serious threats to land which was the crucial factor of production. Therefore they could undo the egalitarian foundation of the Ait Atta which was based on the equal partition of land.

Hoarding salt and wheat were severely sanctioned as well, because these items were the staples of the community, and if left to be traded and exchanged, the safety net of the community would be in jeopardy and dependency on others for food will follow. Interestingly, the sale of green olives or the exchange of boiled fava beans for dates during and after the date harvest were forbidden. The ajmu' fixed the prices of crafts made by the Haratine and prohibited the inhabitants from selling local crafts to strangers or other villages. The Haratine were also the blacksmiths and made the necessary farming tools and household utensils. The villagers could not sell manure, hay, and Dokkar or date palms’ pollen to outsiders, and violations of these stipulations were severely dealt with. The wandering Jewish merchants or i'TTarn were not allowed to sell or barter their proto-industrial products on the threshing floors during the harvest of dates and olives.

In these examples, the ajmu' prohibited selling any product that is part of the community's agricultural production. Manure was essential to the productivity of
farming and ensured high yields. Hay was the main feed of livestock and livestock provided meat to the community as well as farm labor. As for dates, they were the sacred cornerstone of the qSar's diet as well as its medium of bartering with the surrounding Berber nomads. All these examples indicate a strong local jurisdiction to protect the qSar's economic self-sufficiency and economic equilibrium. They also embody the folk wisdom that things which belong to the community should remain within the reach of every member. Even poor households could acquire the necessities for their consumption needs and farming purposes without having to resort to buying them and being victimized by the market forces. Above all, the control of economic speculation—of the Haram activities—and the customary mechanisms employed to block the entrance of the market forces into the social organization of the village aimed at isolating the middleman occupations which were the only options that could be mobilized by the landless Haratine to economically compete with the Berber land owners and undermine their hegemony. The laws of the qSar, as devised by the Berbers, assured the importance of land in production and blocked the non-Ait Atta from appropriating land or even having access to it. While these legal arrangements protected the interests of the Berbers and perpetuated the exploitation of Haratine labor and craftsmanship essential to economic production, they also secured egalitarianism and cohesiveness among the Berber and Arab lineages of the qSar.
Conclusion

The qSars communities, with their distinctive ethno-political and economic attributes, maintained through exploitation and organized around the agency of social stratification, were resistant to socio-economic transformation. Subsistence and intensive agriculture of the valley moved towards closer communal ties and sacrificed the potential income accumulation for the security of democracy and collective poverty. This could also mean that as population grew, the *ajmu* responded by developing more complex ways of controlling the non-alienation of property from the Berber lineages and the perpetuation of the exploitation of the Haratine. In contexts where economic speculation and the behavior of profit making were not allowed to exist, the result was stagnant productivity of agriculture, shared poverty, and a structure which was resistant to the risks of change which would undo the Berber configuration of property and its management. The communities were organized to protect their corporate entities and, as such, had specialized controls over the use of accumulation of resources and mechanisms to insure a democracy of poverty—at least for the Berbers and the Arabs. The leveling mechanisms operated to prohibit economic speculation and accumulation, and to keep the Berber lineages fairly equal in wealth. They also mitigated against the rise of the Haratine based on distinctions of wealth and economic power. These leveling mechanisms rested on low level of technology, limited land, and social stratification, so that wealth accumulation was absent in virtue of poor resources in relation to population and a traditional technology which was labor intensive and not highly productive. The
qSar seems to conform to the Geertzian concepts of shared poverty and agricultural
involution, but not shared exploitation. It nears Wolf’s analysis of peasantry types when
stating that “close corporate communities result from conquest and the attempt by an
occupying power to seize resources, concentrate population, and make village units
responsible for tribute and corvée labor” (1967:236). Certainly, the social
formation of the qSars along the Middle Ziz Valley was a product of long processes of
conquests and ethnic power struggles discussed in the third chapter. These communal
rearrangements would, however, witness sweeping transformations with the arrival of
the French to southeast Morocco in the early twentieth century. These changes will be
discussed in Chapter VII.
CHAPTER IV

THE ETHNOGRAPHIC PRESENT OF THE ZIZ VALLEY'S AGRARIAN SOCIETY

Introduction

The Ziz River farmers have been practicing subsistence agriculture, tending palm date and olive trees, and raising livestock, for centuries. The Ziz Valley is located in the Province of Errachidia, Southeast Morocco. To the north the province borders the Khenifra and Boulmane provinces, to the west Ouarzazate, Beni Mellal and Azilal, to the east Figuig, and to the south the Moroccan-Algerian border. In terms of its administrative organization, the province is divided into districts called cercles which sub-divide into rural and urban communes. The research sites for this study are located in the Errachidia and Rich cercles. The cercle of Rich is comprised of the urban commune of Rich and the rural communes of Guers Tiallaline, Gourrama, Mzizel Tillechte, and Zaouit Sidi Hamza. The Errachidia district encompasses the greater Errachidia urban commune and the rural communes of Aouffous, Boudnib, Chorfa Mdaghra, and Lkheng. Kerrandou is part of the Guers Tiallaline rural commune, while Zaouit Amelkis belongs to the Aouffous rural commune. All these districts and communes also fall under the economic development administration of the Office Regional de Mise en Valeur Agricole, the regional arm of the Ministry of Agriculture and Agrarian Reforms.

The valley’s economic system is characterized by historically constructed power
relations and ethnic stratification, differential land and cultural management practices by
the three social groups, and new nuances added by the recent construction of the 1971
Hassan Addakhil Dam on the Ziz River. I selected the Ziz Valley as my research study
for theoretical, analytical, and practical reasons. My theoretical interests center on
human adaptation in arid lands ecosystems, and processes of social change within
(ethnically stratified) agrarian societies. From an analytical perspective, the diverse
ethnic composition of most of the valley's communities provides an ideal setting for
exploring the relationship between ethnicity and agricultural intensification and for
indexing the recent ethnic social changes since Independence in 1956. Practical
considerations center on my familial ties to the Ziz Valley.

These concerns, and my desire to understand the relationship between ethnicity
and agricultural intensification and variation of farming strategies, led me to choose two
sites for intensive data collection in the Upper and Middle Ziz Valley. The upper
village, Kerrandou, lies above the Hassan Addakhil Dam constructed in the wake of the
1965 flood, and thus continues to struggle with the Ziz River's give-and-take flow.
Zaouit Amelkis is located in the elbow of the middle of the valley, and can count on a
stable water supply. Both villages are inhabited by Arabs, Berbers, and Haratine, and
their irrigation systems are complemented by springs: Hammat Moulay Hachem and
Tin Larba` Springs in Kerrandou and Meski Spring for Zaouiat Amelkis. Both
communities, however, have enough water year round (see Figure 4.1). This chapter
provides the regional context of the two research sites. It describes the social history of
the villages, their population and emigration patterns, household composition, the rules of inheritance, housing and food habits, the structure of the work force, and the market system or *suqs*.

**The Social History of the Villages**

Kerrandou is located in the heart of the Tiallaline Plain, covering an area no larger than twelve km\(^2\). It is fifteen kilometers east of Rich and 70 kilometers north of the town of Errachidia, the capital of the province of Errachidia. To the south, Tiallaline is confined by a large chain of reddish rocks and a series of high rocks forming plastered walls called Jbal Nfarst and Foum Z'bal through which the Oued Ziz has excavated a twisted and narrow passage. To the east the plain extends to the horizon running over low altitude hills. To the west, hugging the plain, a gray range of mountains and hills called Sdur dominate the scenery. To the north lies Jbal Bouhmid and Jbal Assamar n' Ait Fargan which creates a natural boundary separating Tiallaline from the Guers area. The Ziz River splits the plain into two banks fashioning a ribbon of irrigated farming and olive trees, and villages dot the landscape along the river. The width of the ribbon of irrigated agriculture varies with respect to the nature of the terrain and the ever changing riverbed. Approximately 500 meters to the west of the river, the National Road Number thirteen, a paved thin stretch, runs parallel to the river course and along Kerrandou. This road is the lifeline of the southeastern part of Morocco, running from Meknes to Rissani.

Due to its strategic location on the caravan trade route between Sijilmassa and
Figure 4.1, Location of Fieldwork Sites
Fez, Tiallaline is prominent in the geographical descriptions of various medieval and early twentieth century explorers. L'Africain, in his sixteenth century account, mentions the city of Gerseluin (etymologically: "between the boulders"). He reports that it was a miserable place with hardly any inhabitants; the few inhabitants it did have were constantly tormented by the aggressive Bani Hsin Arabs. Its population was very poor, as was its agriculture. L'Africain (1980:318-319) mentions that the locals tended vineyards and peach trees and dried much of this fruit for nourishment. The city, he adds, was built by the Zenata Berbers as a fortress to collect taxes on caravans and traders. Four centuries later, the French explorer De Faucauld (1888:229) went through Tiallaline and described it as an area of "apparence morne, cultures tristes,...absence d'arbres." Despite the miserable nature of the plain, De Faucauld spent two days in Gsibat al Yahud (Jewish quarter), the third and fourth of May 1884. He does not tell us much about the area except that it was inhabited by the Ait Izdiy Berbers.

Today, the locals tell of the early settlement of Kerrandou and its neighboring villages by the Bani Hsin Arabs and I was shown the ruins of their villages, located on the northwest side of Kerrandou. The Lhayne, Amalou, and Ait Lfqih to the north of Kerrandou are still inhabited by Arabs who trace their descent to the Bani Hsin Arabs. In the seventeenth century, because of famine and drought, the Bani Hsin Arabs sold the land to the Ait Hdiddou and went to settle in the Gharb, where they are found today. The story of this land transfer is known by heart to all generations of the village. During the period of drought and famine, which also coincided with the rule of Moulay
Ismail (1672-1727), the Bani Hsin went hungry and their land was dry, so they decided to sell it to the Ait Hdiddou. When the Ait Hdiddou refused to buy dry land, an old tamghart or lady of their own took a stock of wool and buried it in the riverbed overnight. The next morning she dug up the wool. As it happened, the wool was moist and she convinced the Ait Hdiddou to buy the land from the Arabs, suggesting that a wetter climate was in the future for the buyers. After the sale of the land, one of the elders of the Bani Hsin climbed to the top of one of the surrounding hills, took a long look at the dry and famished land and screamed “miyat taghda fi taghda ou mashaw wladi bla ghda, God Ihnik a tiallaline” [hundred parcels of land by a hundred and my kids are left without food, goodbye Tiallaline].” Then, he and his people headed north in the direction of the Gharb plains.

In the seventeenth and eighteenth century, Tiallaline would attract the Ait Izdiy to settle and to slowly sedentarize at the expense of the Ait Hdiddou. They came from Aqqa n’Tizgui of Tudghat (Tinghir) to the West of the Ziz River. Today, there are only three villages in the Upper Ziz Valley inhabited by the Ait Hdiddou: Tighramt Moulay Omar, Isghdan, and Ait Ihya. Since the seventeenth and eighteenth century, the Ait Izdiy and the Ait Atta Berbers partitioned the control of the Ziz Valley. The Ait Izdiy dominated the area between Meski (south of Errachidia) to Nzala (south of the Tizi Ntalghumt), while the Ait Atta influence stretched from Zaouit Amelkis to Touat and beyond or what is considered today Saharan Algeria.

When asked about the meaning of the term Ait Izdiy, the locals explained that it
denotes something *isharn* or mixed, something similar to the reins of the bridle of a horse or *tizday n’tawargit*. Because the horse’s reins are woven with different threads, wool, colors, and hair, it follows that the formation of the Ait Izdiy tribe is also a mixed one. In fact, the recent history of the village lives up to this analogy. It is composed of Ait Izdiy, Ait Marghad pastoralists who bought land from departing Jews and started settling in the area since the late 1950s, Arabs who migrated from the drought prone Tafilalet plain since the mid-1970s, and Haratine. The village also had a thriving Jewish community in the past. The Jewish population lived in Rich as well as Kerrandou, where they practiced commerce and various crafts. Because of their business sense and practice of usury they became landowners in the Tiallaline and the Upper Ziz Valley. They were originally from the Tafilalet Plain. During the 1950s and 1960s, most of them migrated to larger Moroccan urban centers, or to Israel, France, and North America. Today, only three or four Jewish families remain in Rich and none remain in Kerrandou. There are those, however, who converted to Islam and are found all along the Upper Ziz Valley villages. They are called *imshhaden* in reference to the second pillar of Islam, *al-shahada*. Most of these converts took Sharifian status or holy names after their conversion into Islam.

The Ait Izdiy belong to the Ait Yaflman confederation that was created by Moulay Ismail to resist the push of the Ait Atta Confederation to the north of the Atlas. The Ait Yaflman are made of the Ait Izdiy, Ait Hdiddou, Ait Marghad, Ait Yahya, and the Arab Sabah alliance. The Ait Izdiy are subdivided into the Ait Moumou, Ait
Fargan, and Ait Toulout clans (see Table 4.1).

Kerrandou has a population of 1,060 comprised of 170 households. The mean of the village’s household size is 8.45 while the mean for the entire sample is 8.93. Its population structure, like most regions of Morocco, is young. The average farmer’s entire landholding is 1.21 hectares. The village’s farming area is 220 hectares of which 126 hectares is devoted to the cultivation of cereals (wheat, barley, and maize), 40 ha for fava beans, 34 for alfalfa, and 20 ha for fallow and horticulture. Trees are also important to the farmers, with an estimated 18,000 olive trees, 20,000 apple trees, and 4,000 various other fruit trees—figs, vines, almonds, peaches, quince, and plums. The farming area makes what is called ma‘ra‘a, and it is irrigated by surface water derived from the Ziz River.

Similar to the Zaouit Amelkis village, Kerrandou has also a local council made of eight lineages with each lineage having two representatives. The council is composed of the first Berber settlers or imzwura: Ait Ijourar, Ait Yahya Ou Khlife and Ait Khmirra, Ait Cha’ba and Ait Hmou Ou Hmad, and Ait Ali Ou Hsain. Because of the social status of the Haratine, despite their recent accumulation of land, they were not and still cannot be members of the local council, as is the case of the recent Arab settlers. They can only be represented by a descendent of an original Berber settler. The council regulates the management of the irrigation system and oversees the social and economic organization of the community.
Table 4.1 Segmentation of the Ait Izdiy

<table>
<thead>
<tr>
<th>Clan</th>
<th>Lineage</th>
<th>Sub-lineage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ait Moumou</td>
<td>Ait Hahou</td>
<td>Ait Khmirra</td>
</tr>
<tr>
<td></td>
<td>Ait Barhim</td>
<td>Ait Lahcen</td>
</tr>
<tr>
<td></td>
<td>Ait Attou</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ait Blal</td>
<td></td>
</tr>
<tr>
<td>Ait Fargan</td>
<td>Ait Tibarsht</td>
<td>Ait Jussfan</td>
</tr>
<tr>
<td></td>
<td>Ait Hammi</td>
<td>Ait Bushlik</td>
</tr>
<tr>
<td></td>
<td>Ait Wabaray</td>
<td>Ait Imzan</td>
</tr>
<tr>
<td></td>
<td>Ikhermijwa</td>
<td>Ait Zayd Ou</td>
</tr>
<tr>
<td></td>
<td>Ait Haha</td>
<td>Masku</td>
</tr>
<tr>
<td></td>
<td>Ait Keshmish</td>
<td>Ait Kyal</td>
</tr>
<tr>
<td></td>
<td>Ait Yahya Ou Khifa</td>
<td>Ait Ali Ou Hsain</td>
</tr>
<tr>
<td>Ait Tulut</td>
<td>Ait Mussa Ou Ali</td>
<td>Ait Bulman</td>
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</tbody>
</table>

Zaouit Amelkis’ oral history, according to the elders, dates to the seventeenth century as well. It is believed that it was established by the Murabitin Arabs who came from the Tafilalet Plain. Their ancestor is Sidi L’abbasse, and he was among several brothers who were told by their father to take the road along the valley and set up a household when the sun sets. Sidi L’abbasse settled in the Fam Gsirat on the right side of the Ziz River across from the present day village of Zaouit Amelkis. The ruins of Fam Gsirat are still standing. Fam Gsirat’s main economic activities depended on collecting offerings and donations from the locals and the itinerant traders. Fam Gsirat was built at the piedmont of a canyon which was narrow and subject to torrential floods, so the early settlers changed location to what is known today as Zaouit Amelkis. The name Zaouit Amelkis literally means “the religious lodge of the treasure keeper.” The word Amelkis is a corrupt form of the Arabic term *Amin al-kisse* or the treasure accountant. Later, the Murabitin would invite the Shurfa Arabs to settle from the Tafilalet area as well. The Haratine were brought to sharecrop the land and maintain the irrigation infrastructure. The Ait Atta Berbers, as discussed in the previous chapter, would enter the village in the early nineteenth century, and dominate the political life of the village to the present.

The Zaouit Amelkis village is located in the Middle Ziz Valley. Hidden in the elbow of the valley, it is four kilometers from the main paved road, and transportation from there takes the form of animal power or a couple of vans servicing the area along a bumpy and steep dirt road. The village is 25 kilometers south of Errachidia and 18
kilometers north of the rural commune of Aouffous. Its traditional social history is discussed in Chapter III. It has a population of 1,297 divided into 193 households. Similar to Kerrandou, its population structure is young, and the mean household size is 9.33, slightly higher than that of Kerrandou.

Like Kerrandou, the economy is based on irrigated subsistence agriculture, the tending of date and olive trees, and livestock raising. Dry farming is also practiced in rainy years for growing cereals, particularly wheat and barley, in the surrounding hills. Of the 163.5 ha of the village’s farmland, 83.40 ha is in cereal cultivation, 52 ha in alfalfa, 14.70 percent in fava beans, 7.35 ha in vegetables, and 6.05 ha in fallow. Similar to the overall social and economic indicators of the entire sample reported in Table 4.2, the average farmer’s landholding according to the villages’ survey is 2.09 ha.

The Zaouit Amelkis village is administered by a council called taqbiilt, representing the village’s ethnic groups and lineages. Unlike Kerrandou, Zaouit Amelkis’ council is composed of six lineages or swadis: three Berber, one Murabitin Arabs, one Shurfa Arabs, and one Haratine. These six groups make up the council of the village. The council’s concerns revolve around various issues essential to the welfare of the qSar’s community and productive assets: 1) to appoint the palm grove and the irrigation guards; 2) to distribute village’s infertile lands for housing along the swadis of the council; 3) to administer the distribution of the ʿushur or religious tithe; 4) to mediate water and land disputes and to enforce order and fines; and 5) to assess the village’s land holdings every eight years.
Besides the village councils, every village has a *moqaddam* who is appointed by the government to act as a liaison between the government and the village. The *moqaddam* keeps a busy schedule, serving as the village's postman, the reporter of death and birth statistics, the scribe of letters, and the author of various certificates, such as those attesting to residence. For the most part, however, because of his close relationship to the government, which has resulted in the slow erosion of local governance, villagers view his position with a great deal of ambiguity. It goes without saying that any ethnographic project should start with him, at least at the village level.

**Population and Emigration**

Of the surveyed Ziz villages the population has continued to increase since the 1971 population census. According to the 1971 census, the population of Kerrandou and Zaouit Amelkis was 397 and 987 inhabitants respectively, while the 1994 census enumerates 1,060 and 1,297 for each village. The population increase is phenomenal for Kerrandou which almost tripled its 1971 population size. While Kerrandou’s population increased at the rate of 3.7 percent annually, Zaouit Amelkis’ population has grown very little, keeping a slow and steady pace at a rate of 0.8 percent annually. The rural population growth could be explained by the improved health services over the last three decades, communications, and an environment in which a rainy year is typically followed by five to seven years of drought. The droughts of the 1980s drove many pastoralists to settle in rural communities. One third of Kerrandou’s households,
Table 4.2 Basic Socio-economic Indicators of the Ziz's Entire Sample by Head of Household

<table>
<thead>
<tr>
<th>Mean Size</th>
<th>Mean Landholding in Hectare</th>
<th>Mean Age</th>
<th>Mean School Years</th>
<th>Gender (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>8.93</td>
<td>2.18</td>
<td>53.01</td>
<td>3.04</td>
<td>96.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Female</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.3</td>
</tr>
</tbody>
</table>

for instance, were pastoralists and others are still arriving. Another interesting factor behind the influx of pastoralists to the rural communities, as I was told by a sedentarized nomad, resides in the election process and the relentless search for Berber votes by parliament seat seekers. The politicians convinced the pastoralists that their life was hard and not worth living, and they must join the civilized world of schools and hospitals for their children. "The politicians running for the Rabat Parliament came and told us that we should educate our kids," a sedentarized pastoralist told me. As a result, the word traveled throughout the pastoralist landscape, and every time there was an election, the notion of settling to a better sedentary life traveled even faster and further among the pastoralists.

This population shift is also due to the recurrent droughts, particularly during the 1979-1986 period, that obliged many pastoralists to liquidate part of their herds of camels, sheep, and goats and seek refuge in villages where life is more predictable and bearable—potable water, electricity, hospitals, centers for agricultural development, and above all, the cultural luxury of going to the market place to shop at any time of the week. At the markets, most of the old pastoralists would be involved in petty trade and livestock speculation, a specialization they know best. The village's traditional and modern bureaucracy consists mainly of the local council, the mosque, the elementary school, the one room health center, and the communal water fountain. However, Kerrandou has access to, and is within walking distance of, more services such as a center for agricultural development, a small pharmacy, a post office, and a middle
school.

The present population is a dynamic one, however, so the Ziz Valley’s demographic transition will not be complete for generations to come. If these trends continue, low child mortality and high fertility will turn the valley into a land of higher population concentration like those of the Egyptian Delta, some government officials say. The surveyed households report at least 4 children, and the mean household size as noted above is 8.33. Similar to other rural areas of Morocco, the valley’s predominant household type is the multiple or joint family structure.

The population pyramid of the entire sample shows an imbalanced spread of age groups. This imbalance becomes acute in the middle range and at the apex. Male children constitute 19.8 percent of the total population under fifteen. In the age group 15-70, male adults comprise 30.6 percent while males make up 2 percent of respondents older than seventy years old. On the female side, children under the age of fifteen comprise 19.8 percent, a percentage equal to that of the same male age group. In the age group 15-70, female adults make up 27.3 percent whereas female adults older than seventy years old account for 0.4 of the entire sample. The latter result is interesting because one expects to find the contrary—women have higher life expectancy than men. The similar percentage for female and male age group under fifteen is even more baffling. One would expect a gender and age differential despite the fact that males (279) outnumber females (266). Only 3.3 percent of the entire households surveyed are female headed, and usually this type of responsibility comes after the death or illness of
the husband or because the offspring are too young to manage the fields. Among the valley's population, given the patriarchy of all households, there is a very strong tendency on the part of the patriarch to under report the age of his spouse, and the same goes for the age of his young girls. Questions of old age and delayed marriage for daughters tend to be viewed with ambiguity and a sense of shame.

Another problem that could account for the imbalanced spread of the age groups in the population pyramid is due either to the fact that the patriarch rarely reports the exact birth and death dates of family members to the appropriate authorities, or to the small nature of the sample. Stories abound among farmers on the fact that some birth dates are attributed to the wrong names and so on. Early suitors also compel the patriarch to petition the authorities to increase the age of young girls so that they could marry lawfully. Age is also tinkered with upon formal and informal petitions relating to social services such as emigration and government jobs. The most striking aspect of the pyramid is the male age group 40-54; they are almost non-existent and account only for 2.6 percent of the total male population of the sample. Perhaps this imbalanced age group is due to short- and long- term emigration, or to a combination of the reasons stated above.

Emigration patterns are even more telling. Emigration is a male phenomenon and the only female emigration available is called marriage outside the village, as the local male adults would like to brag. Of the 61 household surveyed, 13 reported 22 emigrant relatives, 41.8 percent in France and 52.8 percent in major Moroccan urban
centers. Those who are involved in internal or seasonal migration within Morocco, however, are questioning the benefits of being away from home. The trend among the age group 20-45 is staying home and investing in horticulture fields and livestock for the regional markets. After a cost-benefit analysis compounded by the psychological price of being away from the family, most of them are convinced that truck farming, livestock, and date and olive speculation in the Errachidia and Aouffous markets are actually more financially rewarding. However, if the European work opportunities were still open, they said they would be the first ones to join the drive. All in all, the valley's population pyramid mirrors much of the same demographic dynamics and issues associated with rural Third World countries, a very young and broad-based population pyramid in search of full-time occupations and overseas work opportunities.

Households and Household Composition

The demographic composition and size of the entire sample reflects the constraints, contradictions, and lack of opportunities encountered in the resource-poor world of the Ziz Valley. Comprised of biological siblings, the households' livelihoods revolve around the cultivation of irrigated fields, the tending of palm dates and olive trees, the raising of livestock, and of course the reproduction and socialization of the household. Because they are units of production, consumption and redistribution, their size has a strong impact on a broad range of decision-making processes, from what names the new born babies take and when the daughters should marry to the forms of market interactions and strategies the unit ought to adapt. All the households surveyed
are involved in some sort of network, linking them to urban Morocco and France. These ties vary, ranging from market relations to emigration and government related occupations, such as civil and military jobs.

The analysis of the conjugal relations within households shows that the dominant household type is the extended or multiple family or households comprised of three generations of a family, or more than one simple or nuclear family. Nuclear or simple families composed of a married couple with biological offspring varies from one ethnic group to another. As Table 4.3 indicates, 62.3 percent of the households surveyed are extended families, while the nuclear or simple family type makes up 37.7 percent. When broken down along ethnic lines, the Arabs represent 18.2 percent of simple families and 81.8 percent of extended or multi-generational families; 55.6 percent and 44.4 percent for the Berbers; and 26.1 percent and 73.9 percent for the Haratine. Interestingly enough, 3.3 percent of the entire sample has one married son, 2.3 percent has two married sons, and 0.4 percent has three married sons. Furthermore, 10.1 percent of the sample is comprised of grandsons while granddaughters make up 9.2 percent.

Despite the increase of the nuclear family type throughout most of Morocco since the colonial period, the valley occupants still prefer the extended family. Children upon marriage almost never leave the house, and rarely do they move out. Establishing a new residence usually takes place after the death of the father or when the newlywed bride finds it difficult to live under the rule of the mother-in-law. Most residents, however,
despite "women feuds" in multiple households, prefer residence with the patriarch. Because of land scarcity and the power of the patriarch most of the children refrain from setting up their own residences. Fragmenting the land base of the household is the last resort after mediation by the local holy men and is only performed after the death of the father. Members who cannot solve their differences usually move out and rent a house, but keep working for the patriarch.

Notions of shame and honor also silence conflict or keep peace within the household like a "a compact and an undivided pomegranate," and constitute a major aspect of the moral authority of the heads of the household, the patriarch and the "matriarch." Because they are the progenitors of the household they are invested with the power of the curse and the blessing, Sakht wa riDah, granted to them by God. The power to curse or bless a member of the household is a critical factor in the calculations of those who seek the fission of the household as a corporation. The term Sakht literally means anger, and the son who has been cast the curse is believed to be maSkhoot al-walidin. Once cursed, those who disturb the patriarchal and matriarchal design of the pomegranate-like household unit are said to have a future in which whatever they plant will not reap. Furthermore, wrath and misfortune await them ahead. A cursed son will always be a loser and unlucky, and in being a loser he is ostracized by the community. Any deals or activities involving a cursed person are believed to be imbued with Sakht and lack the baraka, a critical element for the
Table 4.3 Types and Ethnicity of Ziz’s Households in Percentages

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Number</th>
<th>Nuclear Households (%)</th>
<th>Multiple Households (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire Sample</td>
<td>61</td>
<td>37.7</td>
<td>62.3</td>
</tr>
<tr>
<td>Arabs</td>
<td>11</td>
<td>36.4</td>
<td>63.6</td>
</tr>
<tr>
<td>Berbers</td>
<td>27</td>
<td>59.3</td>
<td>40.7</td>
</tr>
<tr>
<td>Haratine</td>
<td>23</td>
<td>30.4</td>
<td>69.6</td>
</tr>
</tbody>
</table>

blessing of human relationships and economic production. An old man, a patriarch himself, nicely and succinctly conveyed the essentials of Sakhi to me, stating it is “like ‘sida’ [the French word for Aids or H.I.V.], when thrown on someone they will wear it to the grave and the after-life.” Only tuba (repentance) in the presence of a holy man and Ta’a (obedience) of parents can dislodge the curse.

Marriage is strictly monogamous, and no household head has more than one spouse. Despite his uncontested rule, the head uses neither physical force nor the threat of it to enforce his authority. Instead, he relies on his traditional and moral stature for obedience. He makes decisions about the management and disposition of household farming land and properties. He mediates conflict among members of the household, and he is the representative of the household in front of the village and the wider society. He provides for the feeding, sheltering, and clothing of all members of the household, and he is responsible for their weddings. Although the survey’s households resemble in many ways the stem and patriarchal family structures of the eighteenth and nineteenth century Europe (Berkner 1972; Wilk and Netting 1984), the Ziz householding type, despite the domineering patriarchy as well as that of indirect (but ruthless and silent) matriarchy, is much kinder and gentler because it keeps the male children in residence and provides the expenses for their wedding. Unlike the Irish peasants (Arensberg and Kimball 1940) that provide their daughters a dowry in money, manage to find other trades for younger sons, and leave the landholdings of the household intact for the oldest male heir and his new simple family, the Ziz patriarch neither forces the
sons to leave nor finds other means for their survival. He favors partible inheritance among the sons and minimizes the loss of inheritance through his daughters' marriages. As the saying goes, once again, "a room full of men is better than a room full of money or wealth," because money, sooner or later, evaporates but "real men or irgzan", even after the death of the father keep the original unit intact, and see to it that their parents, while alive, are taken care of in old age. Regardless of the rising trend of simple or nuclear family structure in most regions of Morocco, the valley's labor for intensive farming favors the mushrooming of large families to contain the inherent risks of their surroundings and thus, to mobilize and diversify the male power of the household. As a local proverb goes, "the limit of brotherhood is life." The Ziz households are best captured as frères with a great deal in common with peasant household morphology of the fifteenth century rural France (Leroy Lau durie 1974).

Rules of Inheritance: Land and Women

The rules governing land transfer and inheritance along the Ziz Valley are a mixture of customary rules and Maliki shari'a or Muslim law. Because irrigated land is a valuable subsistence asset as well as a store of value in a cash scarce economy, the principles regulating inheritance of property are jealously guarded by the local councils, and outsiders have a great difficulty undoing the traditional barriers to acquire land in the valley. The price of an irrigated hectare of land without valuable trees, for instance, ranges between U.S $12,250 and U.S $15,000, while that of the non-irrigated land oscillates between U.S $1,000 and U.S.$1,500.
It is important to briefly mention the impact of the French colonial administration upon the rearrangement of tribal customary law, particularly that of the Berbers (see Gellner and Micaud 1972). In 1930, the French promulgated the Berber Dahir and used it to divide and rule Morocco. Soon after, a large share of colonial research was devoted to the revival of ancient Berber custom ranging from Berber dietary habits to the reinvention of tribal tribunes and pre-Islamic Berber beliefs. This policy stressed the differences between Arab or Muslim law and the Berber custom exemplified in institutions such as collective oaths, rules of inheritance and divorce, and priority of agnates over women and land. The French did their best to revive and rehabilitate tribal tribunals to mediate conflict among and between Berbers. With the coming of Independence in 1956, one of the first things to be abolished the Berber Dahir. Despite the efforts of the post-colonial administration to abolish customary law in the rural areas and use of Muslim law, customary law remains operational. For instance, it still regulates inheritance within households and among households of different lineages. To paraphrase Hart’s paraphrasing of Hoebel, today it is custom and not law or a combination of both that “has teeth, teeth that can bite if need be, although they need not necessarily be bared.” (quoted in Hart 1981:127).

Before I go into the various reasons behind the system of partible inheritance among the Ziz smallholders, two important inheritance concepts must be explained: \textit{shafa}’a (preemption) and \textit{rahn} (a loan or pawn). \textit{Shafa}’a refers to the preemptive or priority rights of agnates over land and over daughters in marriage. Under \textit{shafa}’a, any
mature man could object to a sale of parcels of land by one of his agnatic kinsmen or to the arranged marriage of any of his agnatic kinswomen; neither the transfer of land nor the marriage could take place. Unlike the interpretation of shafa’a in local custom, the Muslim law does not involve the entire agnatic world of the objector.

This old custom stresses that any land sale had to be made public so that the right of shafa’a could be exercised by a kinsman who might be absent from the village. Three auctions within the duration of three weeks are held so that an absent member of the lineage could make his shafa’a claim. Despite the inroads of shari’a in much of rural Morocco since Independence, I was told in 1995 that shafa’a was invoked during a land transfer involving a Berber buyer and an Arab seller, and has become a clever strategy used by Berbers and Arabs alike to block the economically rising Haratine from access to land. In practice, any outsider willing to purchase a parcel of land belonging to a different ethnic group, would offer a price. Any member of the selling ethnic group could make a counter offer which is usually half that price. In the case of marriage, a young adult could make a shafa’a claim on the daughter of his uncle as soon as the word is out that the uncle is pondering giving away his daughter. The point is to keep land within ethnic lines because the member’s offer and status overrides that of the outsider.

The other common form governing property management is rahn. Its essence gravitates around the pledging or pawning of land. It is a loan of land in exchange for allowing usufruct rights for a money loan over a specific determined period. It also
takes the form of a verbal pledge in which a parcel of land or a head of livestock is used as collateral and the credit provider does not enjoy the usufruct rights. This practice is illicit under Muslim law but it is still common among the Ziz farmers. These transactions are made public so that members of any ethnic group could practice shafa`a as well as stand witness to the exchange in case the user tries to turn his usufruct rights into private property. Because of chronic cash shortages in the valley, under this system, land, date palms and olive trees, and livestock are the creditor’s guarantees. The new user of the parcel, for instance, cannot return the land until the expiration date of the transaction. If the owner is unable to repay, the credit provider either keeps using the land until he is repaid or the parcel is transferred under another round of rahn to a third party. If the owner of the parcel, however, repays his debts on time, the user returns the land in the first two weeks of l`ansart or the summer solstice, just in time for the new agricultural year.

According to local custom and Muslim law, the property of a deceased head of household is not divided equally among male and female offspring. The division of property takes places after the female widow has served four months and ten days of seclusion and mourning. If the deceased left children, his widow first gets one eighth of his property (fields, livestock and trees) and is entitled to one fourth if there are no children. If grandparents are still alive, they have the right to one-sixth and the rest is divided among the children. A daughter inherits half the share allotted to the son. Inheritance differs among brothers and half-brothers as well as among sisters and half-
sisters. Brothers and sisters are called *ishqiqn* if they have the same mother while stepbrothers and sisters are *ishafa* or fragments. If the deceased left one son and that celibate son dies, the step-brother from his mother's side takes everything. In the case that he does not have a brother from his mother's side, brothers from his father's side will step in and inherit his land. If there is no one from either side, the brother of his father can inherit the land.

Let's suppose that a married man died and left a daughter. His widow takes one-eighth and the rest is left to the daughter to divide in half with her closest kinsman, usually the father's brother. In the event that the widow remarries, she is not allowed to take the orphan with her. The orphan stays behind under the guardianship of her uncle until she reaches the age of marriage. By custom, if the orphan is a minor, the uncle has the right to enjoy the benefits of the orphan's property, and for this he is held responsible for her welfare and marriage expenses. If the widow felt that the orphan's welfare was neglected by her uncle, with the help of the local council she could put the property into a private *habous* (family endowment); that is, to keep the land undivided until her daughter reaches the age of fasting. Upon marriage, she has the right to reclaim her property and transfer it to her new husband. If her residence is far from the village, or she has no pressing need for her inheritance, the orphan can give *tbariya* or rights to enjoy the harvest of her trees and fields to her uncle until she needs them. If the deceased left no children and no agnates, property is donated to the *habous* of the mosque.
To reduce the share of land that daughters receive and to slow the fragmentation of property, some fathers might leave a will in which a third or *tulut* of the total landholdings is to be inherited by the grandsons of the male line. If this is the case, the division of property (*batu/imkusa* in Berber and *al-waratha* in Arabic) proceeds after the subtraction of the third from the property, including trees and household items. This third is divided equally among the sons, and upon the arrival of the grandsons it is redistributed among them. Because it is the property of the grandsons, their fathers are, by custom, forbidden from selling it. Not surprisingly, alienation of property cannot escape through marriage and agnatic priority over land and women ensure that property flows along the male line.

The surveyed sample reveals that 65.6 percent of households inherited their parcels directly from their fathers, 29.5 percent purchased them, and 4.9 percent parcels are either donated land or a combination of purchased and inherited land (see Table 4.4).

Table 4.4 suggests these trends of inheritance become highly variable even among the ethnic groups of the valley. They also tell of land inequality among the members of the communities. While the Arabs inherited 85.7 percent of their parcels of land and bought 14.3 percent, the Berbers were second with 69.6 percent inherited and 30.4 percent purchased, and the Haratine third with a higher rate of purchased land (62.5 percent) and a lower rate of inheritance (37.5 percent). Once again, this unequal
Table 4.4 Land Inheritance and Purchase by Ethnic Group in the Ziz Valley

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Number</th>
<th>Inherited (%)</th>
<th>Purchased (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire Sample</td>
<td>61</td>
<td>65.60</td>
<td>29.50</td>
</tr>
<tr>
<td>Arabs</td>
<td>11</td>
<td>85.70</td>
<td>14.30</td>
</tr>
<tr>
<td>Berbers</td>
<td>27</td>
<td>69.60</td>
<td>30.40</td>
</tr>
<tr>
<td>Haratine</td>
<td>23</td>
<td>37.5</td>
<td>62.5</td>
</tr>
</tbody>
</table>

distribution clearly testifies to the fact that access to land in the Ziz Valley is still dominated by inheritance.

**Housing and Food Habits**

As mentioned in Chapter III, much of the housing technology has not changed. The building material is made of *al-*lluH, abode bricks, and earth mixed with straw for plastering the walls of the house. In building their houses, the Ziz inhabitants use the *al-*lluH technique, also known in French as *pisé*, to construct walls. The foundation of homes is made of stones plastered with earth mixed with straw, and has a depth of less than one meter. The *lluH* method compresses earth mixed with water, stones and straw into a rectangular box where it is pounded hard. This rectangular frame is an open-ended box, and consists of two flat wood boards, eighty centimeters wide and a meter and a half long; two other boards from each end; six vertical wooden poles, two in the middle and two at each end; and three poles laid horizontally, one in the middle and one at each end. These poles are held tight by ropes to give support to the box and to lock it in position. With the box in place, dirt mixed with water, straw and small stones is poured into it and pounded with a flat pole. More soil is pounded until the box is filled, and the wall being built is a meter and a half long. It is left to dry before another layer is built on top.

This cheap local technique produces strong and solid walls. The *lluH* construction is done mostly by the Haratine. The *lluH* is an effective means of shelter that insulates families against the rigors of extreme cold, heat and sandstorms in the arid
environment of the Ziz Valley. Because of the lack of heating and cooling amenities, the insulating properties of *al-lluH* render houses cool in summer and warm in winter. Despite the maintenance it requires in the rainy months and the recent inroads of cement and brick construction, *al-lluH* remains the dominant form of housing. A point must be raised here in relation to the difference between *al-lluH* and adobe. Arabs and Berbers brought the method of adobe to Muslim Spain where the Arabic word *attoob* was adapted to adobe, the current term in the New World. Adobe is not the same as *al-lluH* because adobe bricks are hand-molded and used for load-bearing of walls in compression.

New methods of constructing housing, such as using brick and cement, however, are being introduced in the villages. These innovations are usually done by households who have access to remittances from Europe. Most of the houses, however, are still being built in *al-lluH* but these same structures are coated with a layer of cement on the outside walls. Some parts within the house, particularly the guests room and the courtyard, have cement floors. Ceilings are made of woven reeds and plastic sheets supported by date palms or poplar beams. Roofs are plastered with mud mixed with straw. The layout of a typical home is divided into three parts: 1) the garden; 2) the living quarters, the storage room, the courtyard and the wooden stoves or kitchen, and 3) an area reserved for livestock and the bath room. These three parts are connected by a long hall, *tal‘lut* or the little way.

Despite the promises of electricity and running water since the 1956
Independence, in 1994-95 the surveyed communities had neither electricity nor running water. Although Kerrandou had a water tower powered by a diesel generator, it was almost always out of order, as was the electricity generator. Although half of the homes in the sample were equipped with electricity installations, kerosene lanterns or *lambas* and candles provided light at night, despite the hanging “useless and dusty light bulbs.” In 1995-96, the Moroccan government launched a plan for rural development, and one of its objectives was the electrification of the countryside. By the end of 1996, the surveyed communities were provided with electrical lines, and now they no longer have to put up with the noise and unreliability of generators. It remains to be seen whether electricity will have an effect on how the valley’s inhabitants store and preserve food.

Up until 1994-95, the Ziz inhabitants relied on traditional methods of preserving food—salting and curing meats and drying vegetables and fruit. Water was kept cool, particularly in summer, in jugs wrapped in wet layers of cloth, olive oil in jugs and plastic containers, and dates in plastic and cloth bags. In summer, fresh vegetables were also kept wrapped in wet cloth bags. Dry foods such as fava beans, dates, and cereal products such as couscous and flour store well all year round when caution is taken against spoilage caused by mice and pests. Lentils and chickpeas, though not locally cultivated, are procured in the weekly market place.

Most of the Ziz homes have small propane stoves usually used for boiling water for mint tea and light cooking. Coffee comes second only after the national beverage, mint tea (travel guides refer to it as Moroccan Whiskey). Baking bread and cooking
meals, however, still relies on wooden stoves and ovens. Date palm fronds and olive wood constitute the main wood used in cooking. As Lenin said "every vegetable has its season,"—so do the Ziz meals. Diet of the inhabitants, since there is an absence of refrigerators, is very much tied to the agricultural calendar of the palm grove.

Couscous, stews or tagines, soups, fruit, and milk products such as ghee butter and cultured milk are the main staples of the Ziz diet. Couscous is prepared from cereal grains and steamed over vegetables and meat, although beef and lamb are scarce and too expensive for most households to eat on a regular basis. For this reason all the surveyed households raise hens, turkeys, and rabbits as substitutes for purchased meat and as strategy 'to save face' during the often unexpected visits of relatives and guests. Olives are also cured and can keep for a few months, while dates are consumed year round. Fruit such as grapes, prunes, apricots, peaches, figs, pears, and pomegranates substantially supplement the diet from late spring through summer to early autumn.

The Ziz diet is highly variable and labor intensive. Almost each season in conjunction with the cycle of crops has its meal, and meals are prepared by women. Turnip soup with a heavy mix of flour is eaten from late October to late April. It is a breakfast food, and its competition, ground fava beans, comes in second according to the valley's farmers. In the middle of winter, January or what is called naS lyali, the haguza or seven vegetables meal is prepared. It is made of some meat, pitted dates, chickpeas, lentils, wheat, corn, and barley. Greens (zagzaw in Berber) are added to it so that the coming spring may be green, and hot chili powder is not used since it may
forecast a hot or difficult year for farmers.

_Zanbu_ is made in May, at the time of barley harvest. Barley is boiled and put to dry in the sun. Once it is dry, it is ground into flour and used in soups or pasta to be steamed as couscous. The month of May is the most versatile diet month because much of what is eaten is fresh of the fields: for instance, _tafrinft_ or pit-roasted fava beans, green figs in soups or with couscous and cultured milk. The same month is also well known for the apricot leaf soup, _khob mar_. In late spring and early summer, roasted heads of wheat and barley or _shwad_ are eaten, as is the case for corn in early autumn. Green dates or _abluh_ are eaten from May until August when they turn into mature dates. _Bayfnus_, although considered a food of the past (twenty years ago), is prepared in the winter months when the land is dead and food from the field is absent. It is couscous served with steamed alfalfa. In the absence of couscous, it is green alfalfa leaves dressed up with salt and hot chili powder. Wild plants are collected by women in spring. _Awallfaz_ and _allam_ plants and tubers (_Iguz_ and a potato-like tuber called _tarfas_) crown most of the spring couscous and stews.

Although many aspects of the past still co-exist with the late twentieth century, conveniences of modern transport and household assets such as televisions, short wave radios, cars, and overseas educated sons, and finally the coming of electricity will no doubt have an impact on the local diet and time. For sure, the farmer's day will be long and his night shorter, and the modern monthly responsibility of paying electricity bills will give him a taste of what it means to join the flow of progress, now that he is
"rescued from darkness into light" and electric switches.

The Structure of the Ziz Work Force

Despite the socio-economic and political changes during the colonial and post-colonial periods, life in the valley continues to rely on irrigated agriculture, the tending of olive and date trees, and livestock raising. Further, regardless of the wisdom of the popular sayings, "he to whom his father left some hill should climb it", or, "he to whom his father left some occupation should follow it," Ziz inhabitants, especially men, appear to deviate from the central tendency of this old wisdom. Instead, they tend to combine agricultural farm work left by the ancestors with new non-farming activities brought in during the colonial and post-colonial periods. Off-farm work encompasses a variety of labor activities, ranging from government employment to seasonal labor migration inside Morocco and yearly migration to Europe.

As indicated in Figure 4.2, 60.6 percent of the entire sample identify themselves as full-time farmers, 18.1 percent as part-time farmers who hold government jobs, and 21.3 percent as farmers who practice a wide range of commercial activities. While the latter’s sphere of activity includes farming, livestock speculation, and small-shop keepers, the part-time farmers with government jobs exercise a wide variety of professions such as elementary teachers, extension agents, administrators such as the moqaddam and the members of the local council, and the holders of religious office as the imam of the mosque, the Talab or the Koranic school teacher, and the prayer caller.
Fig. 4.2 Occupations in the Ziz Valley

Trader (21.30%)
Jobs (18.00%)
Fellah (60.70%)

Although access to land in Ziz is highly unequal, not a single head of household defined himself as a full-time wage laborer. Wage labor is at best occasional and usually associated with sporadic housing construction, and represents only 5.6 percent of agricultural labor in the entire farming sample. They do not define themselves as full-time wage laborers because wage opportunities are few and far between in a highly labor demanding intensive agriculture. They view wage labor as a coping strategy during the low periods of farming labor. However, they cannot be seen either as rural proletariat. Although some of the household heads think that they are exploited by the land owners, they still can negotiate labor arrangements from sharecropping agreements to field rental contracts. Similar to Geertz’s (1963:100) study of the Javanese peasantry under Dutch colonial rule, sharecropping and labor arrangements in Ziz act as temporary leveling mechanisms and reduce the impact of economic differentiation resulting from the unequal sizes of landholdings.

Consider, for instance, the socio-economic situation of Hida’s Haratine household. He is 45 years old, and married to Aicha who is 38 years old. They have four young adults—two sons and two daughters. Hida farms one hectare of irrigated parcels. Of this one hectare of land, he owns 0.05 ha, sharecrops 0.84 ha, and rents 0.11 ha. The rented and sharecropped parcels with their trees belong to four different owners—two Berber male headed households, one Haratine female-headed households, and one very old male-headed Haratine household.

Because of the marriage expenses of one of his daughters, Hida sold his last four
ewes to a Berber, only to take them back from the same man in a half profit partnership for a period of four years. Aicha raises the four sheep and a few hens and rabbits. Two years before that, Hida had to sell his cow and four other sheep to underwrite the expenses of the wedding of his other daughter. In that marriage he refused to sell land, and instead opted for joining forces with his brother who also happened to be marrying off one of his sons.

Hida cultivates wheat, alfalfa, maize, fava beans, and vegetables. He pollinates the palm trees of the owners, tends their olive trees, and irrigates them. For his labor arrangements he receives one-fourth of the total production of trees and one-half of the produce of the sharecropped parcels. In the low periods of farm labor demands, Hida and his oldest son engage in all kinds of labor, ranging from construction and irrigation jobs to the local olive oil press attendants. Tending trees, raising livestock, and cultivating crops along a spectrum of tenure types dominates the life of the farmers of the Ziz Valley.

The recent intrusion of government social services in Zaouit Amelkis is restricted to the one nurse managed health dispensary and an elementary school staffed by six teachers. The gendarmes or rural policing is non-existent, and policing falls under the domain of the local council and the moqaddam. Kerrandou, however, has access to a greater bureaucracy. Because of its location, many social services are within the radius of one kilometer. It is not far from the seat of the Guers Tiallaline Rural Commune administered by the Ministry of the Interior. The commune houses the civil record
office of mortality and birth statistics and the planning and housing development office in charge of issuing housing permits. Although most of the bureaucrats live in the central town of Rich, Kerrandou enjoys the services of the Center for Agricultural Development (Centre de Mise en Valeur Agricole) staffed by an agricultural extension agent and an animal production specialist. It also has access to a small pharmacy and a health dispensary staffed with three nurses and a doctor. It has an elementary school with six teachers, and a middle school was being built in the vicinity. Aside from the Parliament Representative of the Rich District, who is a native of Kerrandou and belongs to the leading landowning and historically influential family of the village and the upper Ziz Valley, almost all the locals are still engaged in farming and marketing their produce and livestock in the Rich and Errachidia markets.

**Markets or Suqs**

The market place or suq has important economic as well as social functions. Markets vary greatly in size and volume of commercial activities in relation to: 1) whether they are located in a strategic place in the regional transport network; and 2) whether the population density within which the markets are located provides “sufficient consumers or firms” to justify the emergence of a marketing system and infrastructure. The peoples of the Ziz Valley live in nucleated villages along the valley, and this settlement pattern hardly allows the growth of any standard or small market place. Because Ziz farmers grow more or less the same produce, means of exchange of local products are horizontal. Although small shops of the village carry a wide variety of
imported consumer goods, bulk goods such as tea, sugar, and clothing are not readily available at the village level, and only periodic markets have the capacity to fill this gap as well as providing the farmer with an outlet for his produce (see Benet 1957; Mikessel 1961; Skinner 1967; Troin 1965).

It would be foolhardy to advance the idea that Ziz farmers inhabit economically self-sufficient communities, for their livelihood and the persistence of their farming depends on markets. Between the ninth and nineteenth century, the tran-Saharan trade route linking the trade entrepot of Sijilmassa and Fez went through the valley. The communities, as well as the surrounding transhumants along this valley's axis, provided safe passage for commerce—but they also pillaged it. Itinerant peddlers on foot and on donkeys, dealing in cosmetics, clothing, and spices, have criss-crossed the valley's villages since the pre-colonial times as well, particularly during the date and olive harvests. At harvest time, there is enough money to spend on home supplies, although sometimes money is not used, and barter in the form of dates, olives, and olive oil become a medium of exchange. The suq serves as the main channel for exchanging the agricultural surplus for import goods. All Ziz farmers frequent markets at least twice a week.

In the Ziz Valley, economic exchanges take three forms: 1) individual exchange between producers at the village level; 2) exchange between producer and consumer at the market place; and 3) exchange through the agency of the middle man, known as asbab. Because of household cash scarcity and the poverty of much of the transport
linking villages with the main market towns, *asbab* is a dominant character who provides credit to farmers at usury rates in advance for their produce. The *asbab*’s activities focus on livestock and tree products such as the high quality dates of majhool as well as olives.

The *suq*’s physical layout is very simple. It is usually located on a flat terrain with sufficient water, and very often near a mosque or the seat of governmental offices, hence combining daily religious duties and weekly or annual festivals with order. In terms of the volume of commercial transactions and the number of individual sellers who frequent it, we can distinguish two types of *suqs*. The first type is the small one that attracts two or three rural communes, such as that of Aouffous, that the Amelkis farmers attend three times a week—Tuesdays, Thursdays, and Sundays. The second and larger type is usually situated at major crossroads and on the border of ecological zones. The Rich market held every Monday fits the latter type, serving the entire administrative district of Rich and neighboring provinces; it also attracts people of the High Atlas Mountains as well as the inhabitants of the valley.

*Suqs* in themselves are divided into three kinds: the everyday late afternoon stands of goods and vegetables called *swiqa* or little *suq*, green vegetables markets, and livestock markets. The latter two are not usually held on the same *suq* grounds. Inside the green vegetables *suq*, various activities occupy different parts of the market grounds. For example, agricultural produce sellers are gathered in one sector, retailing cereals, vegetables, fruits and dates, while in another section there may be crafts such as
basketry and farming supplies made of palm date fronds. Spices, cooking oil, butter, honey, and clothing occupy a privileged space in the suq because they represent luxury items which are usually bought only once or twice a year. In most suqs, for health reasons and caution against fire hazards, blacksmiths, the space for mule and donkeys, and the slaughter house are found outside the walls of the market place (see also Geertz 1979).

Suqs are not only about economic transactions and swapping of commodities. They provide a forum for social and political functions as well. These functions are very important in relatively isolated areas for information exchange among farmers and for relaying government directives to far away communities. For the farmer, market day means a day of vacation from the back-breaking work of farming, one to be enjoyed in haggling over merchandise and in the company of reawakened friendships and relationships over a half loaf of bread filled with meshwi or barbequed lamb and washed down by a few glasses of sweet mint tea.

Within the province of Errachidia there are ten suqs of variable size and importance. Most of them could be considered small markets (Errachidia, Aouffous, Boudnib, Imilchil, Tinjdad, Goulmima, Jorf, and Erfoud), whereas Rich and Rissani constitute large or regional markets. If farmers frequent the market at least twice a week, that translates into a loss of 70 days of male labor, suggesting the integration of the Ziz farmers into wider society through the mechanism of marketing. Of the surveyed households, 69 percent of the farmers market their produce at the Rich,
Errachidia, and Aouffous suqs, while the remaining 31 percent sell their crops through a middle man. Table 4.5 underlines the economic importance of the market in the persistence of smallholder agriculture in the Ziz Valley.

From Table 4.5, one notes that the Ziz farmer is well entrenched in the regional market structures, these data suggesting that farmers practice diverse farming strategies. Because cereals constitute the most important staples, especially maize, their share in the marketed crops is still of importance. The most striking and revealing findings of this table are that livestock and its products contribute 51 percent of the total revenue of the entire marketed goods of the farm, while dates and olives contribute 24 percent, fruits 13 percent, cereals 8.6 percent, and vegetables 3.4 percent. These findings may suggest that Ziz farming is actually in a transition period, a period in which farmers are moving from an intensive and labor demanding subsistence agriculture to an extensive one where livestock and alfalfa and tending of trees may become the dominant land use system. These indicators of change might also have to do with the developmental cycle and ethnicity of households. The interpretations of some aspects of these findings, the possible trend toward farming extensification, and the hypothesized relationship between ethnic and agricultural production will be analyzed in great length in Chapter VI.
Table 4.5 Mean Quantity of Goods Sold and Total Revenue in Dirhams Aggregated by Household, 1993-94, (N=50)

<table>
<thead>
<tr>
<th>Items</th>
<th>Mean Quantity and Units</th>
<th>Mean Income</th>
<th>Total Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>122.95 kg</td>
<td>465.70</td>
<td>23285.00</td>
</tr>
<tr>
<td>Maize</td>
<td>133.26 kg</td>
<td>324.12</td>
<td>16205.55</td>
</tr>
<tr>
<td>Fava Beans</td>
<td>241.76 kg</td>
<td>732.67</td>
<td>36633.50</td>
</tr>
<tr>
<td>Anis</td>
<td>5.25 kg</td>
<td>215.00</td>
<td>10750.00</td>
</tr>
<tr>
<td>Dates</td>
<td>110.00 kg</td>
<td>180.00</td>
<td>9000.00</td>
</tr>
<tr>
<td>Olives</td>
<td>599.12 kg</td>
<td>1973.20</td>
<td>98660.00</td>
</tr>
<tr>
<td>Olive Oil</td>
<td>138.39 liters</td>
<td>2709.93</td>
<td>135496.25</td>
</tr>
<tr>
<td>Fruits</td>
<td>1053.00 kg</td>
<td>2628.00</td>
<td>131400.00</td>
</tr>
<tr>
<td>Vegetables</td>
<td>350.70 kg</td>
<td>763.28</td>
<td>31864.00</td>
</tr>
<tr>
<td>Livestock</td>
<td>34.00 head</td>
<td>1704.20</td>
<td>85205.00</td>
</tr>
<tr>
<td>Milk</td>
<td>2391.50 liters</td>
<td>8545.39</td>
<td>427269.50</td>
</tr>
<tr>
<td>Wool</td>
<td>11.00 kg</td>
<td>31.00</td>
<td>1550.00</td>
</tr>
<tr>
<td>Eggs</td>
<td>6.70 units</td>
<td>7.48</td>
<td>374.00</td>
</tr>
<tr>
<td>Total</td>
<td>------------------------</td>
<td>20279.86</td>
<td>1013993.00</td>
</tr>
</tbody>
</table>

The Agrarian Society of the Ziz Valley

Regardless of the importance of livestock and the high value of trees in the persistence of the farming household in the Ziz Valley, the Ziz farmers refer to their agricultural activities as integrated farming because the sustainable productivity of their parcels depends on animal manure and shade provided by trees. Despite the harshness of the climate, a microclimate prevails in the oasis: managed irrigation, animal manure, and shade provided by olive trees and date palms render the environment at the ground level less arid and the soils more fertile and productive. In contrast to the constructs of ecological niche and verticality adaptation in which mountain peasants and pastoral communities exploit a range of ecological areas delimited by ethnic boundaries and altitude (Barth 1956; Guillet 1981; Netting 1972 and 1993), the valley’s agroecosystem is best understood as an isomorphic twisting plain where altitude is negligible. On the flat floor of the valley several environmental and historical factors, and not ecological niche or altitude, limit the options of farmers. All arable land is fully allocated and expanding farming operations is impossible. Water availability and especially patterns of land distribution determine the nature of farming strategies. Because of land scarcity and its skewed distribution, Ziz households have replaced “scale with skill” and rely on a three-storey farming system: mixed cropping shaded by the first floor of fruit trees which are in turn protected by the date palms and olives from extreme climatic elements in winter and summer. This intensive multi-storey farming system is as close as the Ziz farmers come to the verticality concept found among mountain smallholder
All households combine the three-storey farming activities with livestock raising. In this process the constraints endemic to the Sahara Desert in the form of the limited arable land and environmental stresses such as sandstorms and recurrent droughts add more difficulty to the farming activities. While they live with vulnerability in the oasis ecosystem, they constantly militate against it through the application of labor, skill, and diverse strategies of production and marketing.
CHAPTER V
THE FARMING SYSTEM OF THE ZIZ VALLEY

Introduction

Smallholder agriculture is labor intensive. The application of irrigation and multiple cropping is commonly practiced by the Ziz farmers along the valley, with each area combining its proper farming systems. Farming is essentially a simplified recreation and improvisation of the diversity of surrounding ecosystems, not an attempt towards a "nature artificielle". Within such an arid locality the smallholder conjugates myriad activities in concordance with past and present seasonal vicissitudes: ploughing and planting, maturity, and harvesting. Planting is contingent upon the will of God, it is believed, as well as the elements of the Saharan climate, and it is scheduled so that short and long-maturing cereals, root crops, and fruit trees ripen in succession and not at the same time.

Agriculture is not just obtaining food from the soil in the face of droughts and pestilence, but it is a religious way of life as well. "We keep doing iflaHa or agriculture because the market’s produce does not have baraka; we need to feed our families, feed the poor, the rambling folks, the birds, and above all it is a shame to have total dependence on the market foods when there is land around to be exploited," stated an old Haratine farmer. Not surprisingly, when it comes to farming, which is the cornerstone of livelihood, farmers combine God’s help and baraka with a variety of human responses to the opportunities and constraints imposed by the environment. The
critical constraints facing the farmer and his parcels, very low and irregular precipitation and very high temperatures, are ameliorated by the flow of rivers from the High Atlas Mountains into the region, which not only provide surface waters but also feed the area's springs and water table.

The Seasons and the Agricultural Calendar

Farming revolves around the timing of preparing soils, planting crops, and harvesting trees. This mundane fact requires a knowledge of the seasons and when they change, for the seasons determine the farmer's agricultural calendar. While all Ziz farmers follow the Muslim lunar calendar, because their farming activities follow the rhythms of the seasons they are also versed in the Julian calendar. The Islamic lunar calendar is impractical for the coordination of seasonal activities, because it is eleven days shorter than the solar calendar and hence the timing of the months are changing every year.

According to the local mosque imam, the year is divided into twenty-eight mawazin abajidiya or alphabetic blocks. Each block has thirteen days, with the exception of the 18th-31st July block which has fourteen days. Farmers distinguish four distinct seasons. Autumn (Ikhrif) is indicated by the letter block ghayaz: gha indicating the first letter of the month of August, ya standing for number ten, and z standing for number seven. These letter blocks and numbers add up to read the 17th of August meaning the beginning of Autumn. Winter (shta) is determined by the manzal nayaha which begins on the 15th of November; spring's (rbi`) block is fayaha, and starts on the
15th of February; and summer’s (SSif) block of letters is configured of mayaza and it is on the 17th of May. These seasons themselves are divided into periods which specify various activities related to the agricultural cycle. The forty days between the 12th of December and the 20th of January is called layali; the fifteen days of Midsummer between the 24th of June and the 7th of July are l’ansart; and the forty days between the 12th of July and the 20th of August are named Smaym (see also Bourdieu 1977; Park 1996; Varisco 1994; Westermarck 1926).

Table 5.1 presents the months of the Berberized Islamic calendar, the local Moroccanized Arabic months, and the Islamic calendar and its corresponding Julian months of 1994-95. Farmers call the Julian months by their Latin names. January is referred to as nnayr; February, kobrayar; March, mars; April, abril; May, mayu; June, yunyu; July, yulyuz; August, ghushr; September, shutanbir. October, kaoobar; November, nuwanbir; December, dujanbir.

Because the agricultural calendar is cyclical and farmers practice multiple cropping strategies, one is left wondering as to when the calendar year starts. Unlike monoculture farming, for the Ziz farmers the calendar does not have a precise starting day because a large share of planting is regulated by the seasons. All households in the survey own livestock and valued trees. Therefore land use mirrors a mixed response to household subsistence requirements, animal feed needs, and market demands.

According to farmer narratives, the ploughing season begins in October, but the ploughing may start earlier or later after a pre-irrigation that soaks the fields. The
<table>
<thead>
<tr>
<th>Berberized Months (based on Islamic calendar)</th>
<th>Moroccanized-Arabic Months (Based on Islamic calendar)</th>
<th>Islamic Calendar</th>
<th>Julian Calendar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tirwayin</td>
<td>Moolud</td>
<td>Rabi<code> al-awwal 24- Rabi</code> al-thani 24</td>
<td>September</td>
</tr>
<tr>
<td>Intfarntirwayin</td>
<td>Taba` lmoullud</td>
<td>Rabi` al-thani 25- Jumada al-ula 25</td>
<td>October</td>
</tr>
<tr>
<td>Atfasizwar</td>
<td>Taba<code> tab</code>u</td>
<td>Jumada al-ula 26- Jumada al-thani 26</td>
<td>November</td>
</tr>
<tr>
<td>Wissin</td>
<td>Ayou</td>
<td>Jumada al-thani 27- Rajab 28</td>
<td>December</td>
</tr>
<tr>
<td>Win iguramn</td>
<td>Bumarkidan</td>
<td>Rajab 29-Sha`ban 29</td>
<td>January</td>
</tr>
<tr>
<td>Taltyurt</td>
<td>Sha`ban</td>
<td>Ramadan 1- Ramadan 28</td>
<td>February</td>
</tr>
<tr>
<td>Ramdan</td>
<td>Ramadan</td>
<td>Ramadan 29-Shawal 29</td>
<td>Mars</td>
</tr>
<tr>
<td>Iswi</td>
<td>L`id sghir</td>
<td>Dhu al-qi<code>da 1-Dhu al-qi</code>da 30</td>
<td>April</td>
</tr>
<tr>
<td>Win ghar la`yad</td>
<td>Bin la`yad</td>
<td>Dhu al-hijja 1- Muharram 1</td>
<td>May</td>
</tr>
<tr>
<td>Tafaska</td>
<td>L`id lkbir</td>
<td>Muharram 2- Safar 2</td>
<td>June</td>
</tr>
<tr>
<td>Ta`shurt</td>
<td>`Ashura</td>
<td>Safar 3-Rabi` al-awwal 3</td>
<td>July</td>
</tr>
<tr>
<td>Intfar n<code>ta</code>shurt</td>
<td>Taba<code> </code>ashur</td>
<td>Rabi<code> al-awwal 4- Rabi</code> al-thani 4</td>
<td>August</td>
</tr>
</tbody>
</table>

earlier ploughing is called takarza tamnzut. During this period, wheat (imandi), barley (timzin), fava beans (ibawn), peas (jalbana) and alfalfa (IfaSa) are sown. The late ploughing season is called takarza tamazuzt when the same legumes, pulses, and cereals are planted. This season begins in early December and lasts throughout the whole month of January. Farmers, therefore, are accustomed to saying “Harth lyali kif lawwal kif titali,” sowing either at the start or end of lyali is the same; while planting during Smaym is luck for livestock, “Hart Smaym man sa`d lbhaym.” Planting of cereals, pulses, and legumes is broadcast by hand. For Lahcen, however, one should plant wheat in the last days of October and not wait until lyali because for every seed you sow in October it yields four to five pockets of wheat, while in late planting a seed gives one to three pockets of wheat. Lahcen believes that early sowing improves the vegetative growth of cereals, strengthens the roots of the plants, and, therefore, gives better yield or al-ghalt and straw (see Table 5.2).

In the period between mid-December and the end of January, the olive harvest is the main activity of farmers. After the olive harvest, they irrigate the fields with the aman or water of lyali so that olive grains and leaves are cleaned up from alfalfa and cereal parcels. Because of alfalfa’s slow growth in the cold months between late October and early March, women crush date pits, cut palm fronds, weed fava bean fields and gather olive branches and leaves as animal feed. In the middle of lyali, nurseries of tomatoes, eggplants, sweet and hot peppers, onions and mint are planted only to be transplanted as seedlings for the March planting of vegetables. In January,
Table 5.2 Planting and Harvesting Calendar of the Ziz Valley Farmers

<table>
<thead>
<tr>
<th>Crops</th>
<th>Months</th>
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<tr>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Wheat</td>
<td></td>
</tr>
<tr>
<td>Barley</td>
<td></td>
</tr>
<tr>
<td>Maize</td>
<td></td>
</tr>
<tr>
<td>Fava beans</td>
<td></td>
</tr>
<tr>
<td>Alfalfa</td>
<td></td>
</tr>
<tr>
<td>Carrots</td>
<td></td>
</tr>
<tr>
<td>Turnips</td>
<td></td>
</tr>
<tr>
<td>Onions</td>
<td></td>
</tr>
<tr>
<td>Tomatoes</td>
<td></td>
</tr>
<tr>
<td>Squash and Okra</td>
<td></td>
</tr>
<tr>
<td>Mint</td>
<td></td>
</tr>
<tr>
<td>Eggplant</td>
<td></td>
</tr>
<tr>
<td>Greens</td>
<td></td>
</tr>
<tr>
<td>Peppers</td>
<td></td>
</tr>
<tr>
<td>Pears and Apples</td>
<td></td>
</tr>
<tr>
<td>Apricots</td>
<td></td>
</tr>
<tr>
<td>Plums</td>
<td></td>
</tr>
<tr>
<td>Figs and grapes</td>
<td></td>
</tr>
<tr>
<td>Pomegranates</td>
<td></td>
</tr>
<tr>
<td>Dates</td>
<td></td>
</tr>
<tr>
<td>Olives</td>
<td></td>
</tr>
</tbody>
</table>

Planting and ploughing | Harvesting | Pollinization | Transplanting

Source: Author's survey 1994-95.
the saying goes "mul llaft kay bqa Hayr," "the turnip grower becomes anxious and confused" since the turnip and carrot harvest is coming to an end. Farmers also cut reed, and either sell it or use it in roofing houses and basket making.

In February, olives seedlings are planted. February is believed to be a windy month, and farmers fear high wind velocity and early thunderstorms because they break or "make the standing cereals sleep." March is the happiest, saddest, and busiest month, according to farmers. It is believed that in this month, the Prophet Mohammed passed away, and a great deal of sadness or taghufi pervades the landscape to the extent that "vineyards or grape trees cry", "aDil dayalla". It is the happiest time because trees start to recover their garb of leaves. It is the busiest because of several activities that have to be performed simultaneously: pollinization of date palm trees and transplanting of vegetable seedlings, planting of melons and date palm shoots and early mazuzi maize, and the first cut of alfalfa. At the same time, fields are fertilized by lghbar or green manure and household waste. Nothing can be more devastating to the farmer's livelihood than the howling winds of March, the thunderstorms of April, and locust invasions of May. Farmers say "Allah injina man rih mars, u ra'dat abril, u jrad mayu. May God save us from March wind, April thunder, and May locusts." If these three elements agree to conspire against farmers, their prosperity is at best delayed by one year causing unwanted hardship. These southeastern winds, also called Sallat al-biban or door slammer, also have positive effects. They could either turn pollinization dust into flowers, a big help to farmers, or turn flowers into dust, triggering a
pollinization wind traveling throughout the palm grove.

In April, farmers continue transplanting vegetable seedlings, and plant okra, green collards, and a variety of squashes (*slawi* and *taghsayt*). Peas and fava beans are plucked from the fields and used as vegetables. A second round of date palm pollinization occurs. In May, fava beans and peas are harvested and carried to the threshing areas. These same harvested fields are irrigated. Soon after, particularly during and after the *l'ansart* period, pears, apricots, prunes and vegetables begin to ripen. Wheat is harvested in June and threshed in July. Figs, grapes, early pomegranates or *al-ramman ssafri*, and peaches ripen by the end of the *Sma'y* period between the 12 July and 20 August. Peaches kill livestock before the *l'ansart*, and women refrain from feeding animals with hot alfalfa or *taghanim lqlib* weeds because they cause alfalfa bloat or simply lead to the death of livestock.

While July marks the beginning of the fruit season, August gets flooded with fruit produce, and by the end of *Sma'y*, dates start to ripen, particularly the earlier varieties such as *l'majhool*. Maize is planted in place of harvested wheat and multi-cropped with alfalfa, turnips, carrots, and onions in August. Similar to fava bean and potatoe planting, fields are not ploughed, and maize seeds are sown into the ground by hand and a small pick (*taghlzimt*). At the same time, green manure is spread over the field and left without irrigation for the period of two weeks. During these two weeks, maize fields are thinned and weeded by women. These weeds are not fed to animals if the fields have not yet been irrigated. They kill animals and could only be used as feed
after they had been soaked in water overnight.

The mid-August period is the start of Autumn. Autumn for most farmers of the valley is equated with the date harvest. As farmers say “when September begins dates mature even in the bottom of wells.” September and October are dominated by the harvesting and marketing of dates. In addition to date and Autumn pomegranate activities, farmers harvest maize and women peel it by hand and date palm needles. Dried corn cobs are crushed with date pits and fed to animals, and if there is no livestock, *al-mashshash* or dry cobs are used as fuel. After the maize harvest, fields are ploughed and a new round of cereals, legumes, and pulse planting follows. Alfalfa, a perennial crop, is cut from March to late November. It occupies the soil for almost six years, and provides five to six cuts per year.

The Irrigation System and its Social Organization

As discussed earlier, water in the study area is supplied by flood waters, springs, wells, and the Hassan Addakhil storage reservoir. Traditional land tenure patterns and water allocation involve complex overlaps among geographical, social, and technological boundaries. For instance, a farmer from one village may depend on water supplied by a canal controlled by a second village, and his or her land may have trees on it owned by a farmer from a third village. Because Kerrandou is located above the dam and Zaouit Amelkis has a relatively reliable water supply, irrigation management is regulated by customary rules and not by the dam’s bureaucratic authority.

Concerns about the management of the palm grove and its irrigation system are
the concerns of everyday life in the villages. As a defensive strategy, villages and their councils crafted many rules to govern the use of the palm grove. The palm grove has its chief, amghar n'tamazirt, to see to it that fields and produce are not subject to theft. The irrigation network also has its chief, amghar n-tiruggin, who supervises the cleaning and maintenance of the canals and the dam. The two chiefs are appointed by the council based on their age, honesty, and religiosity, as these attributes are essential to the just management of the subsistence base.

Communal institutions govern the agricultural calendar and land use, and fix the opening and closing of the date and olive harvests. The legal organization of farming punishes acts such as unauthorized weeding on the borders of irrigation canals and the river, unauthorized picking of dates, olives and other fruit in the palm grove and around the gardens, bringing weeds or alfalfa into the village after sunset, and the collection of green wood.

In the Ziz Valley, the irrigation community is usually made up of one or several villages along the river sharing communal main canals that irrigate the palm grove. Each village has a local council (taqbilt in Berber) that administers the economic, political, and social organization of the village. The border limits are known and recognized by neighboring villages. The management of water and land fall under the responsibility of the council. Typically, the main canal (targa in Berber) draws water from a diversion dam built out of dirt, sticks, and stones. The canal is considered the property of the village or the villages that use it and maintain its operation. The
neighboring villages recognize each other's rights of ownership, construction, and maintenance duties (Ilahiane 1996; see also Hammoudi 1985).

The irrigation network of the villages of Kerrandou and Zaouit Amelkis, for instance, could be described as a local folk model, or what Levi-Strauss calls the "home made model" (Lévi-Strauss 1953:327). Similar to Kerrandou, the Zaouit Amelkis palm grove, for instance, stretches on both sides of the Ziz River. Thus, its system of irrigation is fed by two diversion dams, the Jarmonia dam on the west bank and the Salhiya on the east bank of the Ziz River. Each dam feeds a main canal: the Salhiya dam feeds the Salhiya canal on the east bank, and the Jarmonia dam feeds the Jarmonia canal on the west bank of the river. These two diversion dams are situated about seven kilometers north of the village. The location of dams requires pacts with neighboring villages whose territories the canals traverse, as well as permitting topography and slope. For these reasons, and for the main canals' right of passage through the neighbors' lands, a tradition of weekly division of water regulates water use among the villages. The Salhiya canal on the east bank runs through the Lkenz, Amelkis, and Zwiwia villages, and water distribution is shared on a weekly basis. Lkenz to the north of Amelkis uses its water share from sunset Saturday to sunset Sunday, Amelkis from sunset Sunday to sunset Friday, and Zwiwia to the south of Amelkis from sunset Friday to sunset Saturday.

On the west bank of the river, the Jarmonia canal traverses the villages of Bous' id, Amelkis, and Jramna. Bous' id, to the north of Amelkis, is entitled to use its
water share from sunset Saturday to sunset Sunday, Amelkis from sunset Sunday to sunset Thursday, and Jramna, south of Amelkis, from sunset Friday to sunset Saturday. Water channeled through the main canals is the property of all members of the community and is everyone's concern. Breaking dams or diverting water illegally from the main canals has led to bloody disputes and water wars among the villages.

As the Jarmonia canal reaches Amelkis' fields, it channels water into the village's upper and lower targa, which in turn divide into secondary canals, and then into tertiary canals called ImSarf leading water straight to fields. Although the main canal is the responsibility of several villages, once within the boundaries of a settlement it becomes the business of all members of that village. The lower and upper targas are of concern to the whole village as well, whereas the secondary and tertiary canals are the responsibility of owners who get their water from them and are, therefore in charge of their maintenance and repair. In some places, however, the main canal feeds directly into the tertiary canals. The same rules apply on the east side as on the west side. The system of water distribution in Amelkis is based upon the principle of mulk, or private ownership. Thus, the water that a person gets is as much their property as is their land property. The owners of the upper canal fields can take as much water as they want without taking into account the interests of the lower canal field owners. This distribution of water is reinforced through the customary rule of the priority of the upper canal lands over the lower canal lands. Water rights are not alienable from land rights; nevertheless, water is still considered to be the outcome of collective obligations.
The management of the irrigation system falls under the village council. The system is fixed and everyone knows the rules. For the maintenance of the dam, there is a yearly campaign at the village level to mobilize the work force to repair and fix the dam, the canal, and the major branches. Communal help is called upon when the dam is destroyed by floods. For the maintenance of the irrigation system, all males past the age of puberty have the obligation to take part in the upkeep of the dam, regardless of whether they own land.

In normal times, the work force provided by each farmer is a function of their holdings. Stealing water and produce from the palm grove and gardens are the two major sources of labor for the maintenance of the irrigation infrastructure. Theft tends to be high because landless villagers are barred from the right to cut and collect grass on the banks of the river and the canals as well as on parcel boundaries. While the landless are required to participate in the operation and maintenance of the irrigation infrastructure of the village, they are denied the right of use of wild grass and weed patches found on the banks of the river and canals as well as on field boundaries. These grassy areas, particularly those on the banks of the river, are used by land owners to graze their mules and cattle. Blocking the landless from using what is supposedly communal property of the village, even though they must provide labor for the upkeep of the community's communal irrigation system, is justified by the principle that a villager who does not own or sharecrop property has no business going to the palm grove and the gardens. The offender is subject to a public denunciation from the
minaret and later given the choice between feeding a party of ten or twelve people for a
lavish dinner (usually including six members of the council, the fqih of the mosque, the
prayer caller, the water and palm grove guards, and another member or two of the
community), or one or two days community service clearing and cleaning the main
canals so that the water runs smoothly (Ilahiane 1996).

The dinner expenses are often too stiff for the poor and landless to bear, and to
save face he is compelled to negotiate his way through credit, which in turn, makes him
indebted and dependent on others. This practice of "feasting" is locally called n'zul
from the Arabic verb "nazala" meaning to "fall on someone." The n'zul has a practical
function which is to sanction the offenders and to teach others a lesson in communal
administration and morality. Besides their prestigious position in the council's circle,
the water guard and the palm grove guard are paid a salary of ranging from 4,000 to
6,000 dirhams a year for their service (one dirham = U.S. $8.50 in 1994).

The similarities between the two villages end during summer, particularly during
the maize season when water becomes very scarce in Kerrandou. Kerrandou shares its
communal irrigation with the Isghdan village to the north and the Boucham village to the
south. The rules governing the maintenance of the irrigation infrastructure are similar to
those of the Amelkis discussed above. Unlike the scattered nature of the villages around
the Amelkis system, Kerrandou and its neighboring villages are more compact and
geographically close to each other. Because of the proximity of the villages' farming
land, the partition of water is not based on a weekly basis but rather it is done in
succession, or what is locally called *rabta-b-rabta*. This system is reinforced by the customary rule of priority of the upstream over the downstream users—water flows from Isghdan through Kerrandou to Boucham.

During times of water scarcity, especially in late spring and summer, water may be partitioned, field by field. Often times, especially during the 1979-84 severe drought, farmers in the upper Ziz Valley refrained from irrigating high water demanding crops such as alfalfa, maize, and vegetables. To avoid social conflict, water rationing is initiated by a decree from the local council that specifies the number of assigned days or half-days allocated to specific zones of the farming area. The water guard sees to it that the guidelines of the council are fulfilled. He appoints honest irrigators to execute the mandate of field by field irrigation. These irrigators, called *imswan*, work under the supervision of the water guard, and they are paid around twenty to twenty-five dirhams per field irrigation, no matter how small or big the field might be.

Despite the local rules and control of the irrigation system conflict persists among the irrigators—and environmental factors exacerbate it. The problems farmers face are recurrent droughts resulting in water scarcity and even more competition over it. In addition, the upper canal farmers can take as much water as they wish. They need not, and typically do not, consider the needs of the lower canal farmers. Also, the diversion dams and canals technology is always vulnerable to floods which wash away and damage the irrigation infrastructure at least twice a year.

Because of the customary rule of priority of upstream over the downstream
users, a string of eight villages, sharing the Guersiya irrigation canal to the north of the Kerrandou irrigation perimeter, has been riddled by water disputes since pre-colonial times. The Guersiya runs through eight villages for twelve kilometers. While the upper stream villages use its water year round without providing any labor input for the upkeep of the diversion dam which feeds the canal, the lower stream villages provide all the labor upkeep but get no water in late summer. Water scarcity becomes acute in the maize planting season in the lower villages where most farmers have given up on planting maize. They still do plant it, and since the late eighties “maize went dead”, because the upper villages hoard all the available water and refuse to change the irrigation custom of the upper over the lower.

Needless to say, the lower communities have tried every avenue of the legal system of the Moroccan government as well as mobilizing the regional holy cast of saints to remedy this “water injustice.” But nothing has come of it so far. For the Regional Office of the Ministry of Agriculture, customary rules are better left alone to the locals to deal with, no matter how violent they become; “the waters of customary rule or ‘urf are dangerous and have no solution,” an extension agent conceded. For the old Lhajj, an active farmer in the water legal struggles, who remembers vividly the colors of offices, the names of military and civil cadres of the provincial courts and the Moroccan Supreme Court in Rabat since 1957, is tired of seeing his village’s maize and alfalfa fields suffer from water shortage. It is a situation where state intervention must be encouraged, he insists. Caught between custom embedded in the environment and
corrupt institutional practices, all the frustrated farmer can do is make Berber threats such as "one of these days, Assi Hsain, we will irrigate our fields with the water of their eyes." At the same time, he gets hold of his anger and asks God to forgive him for such bad thoughts as well as to throw some light on the reasoning of the folks of the upper communities.

Because of these social and environmental constraints, some farmers have resorted to drilling wells and tapping into underground water. Pump-powered irrigation is viewed as complementary irrigation to seasonal water shortage by some, while others see it as the only alternative altogether to traditional irrigation limiting the expansion of the land base. Despite the latter's claim about the benefits of pump irrigation, they also use surface water to irrigate their fields. Even though pumps have been adapted by farmers to protect their agricultural production in the face of various environmental and social perturbations, recent innovations and shifts in land use, such as the introduction of apples and the increase of alfalfa acreage, have increased the number of pump users in the valley, particularly in the Kerrandou area. Technology enthusiasts either sell a parcel of land and a few livestock head or convert the sales of tree produce and its derivatives into the purchase of a pump.

Out of the surveyed sample, 89 percent of the parcels are irrigated by surface water while 11 percent use both surface water and pumped water. The number of diesel-powered pump wells in Kerrandou is twenty while Zaouit Amelkis has only one. Water is drawn to the ground surface and stored in a cemented pond or basin called
sharij. From the sharij, water is driven into the fields though a network of small canals and ditches. Despite the fact that those wishing to drill a well must obtain a permit from the Ministry of Agriculture's regional office, farmers tell of illegal well owners and how the state's regulations do not have teeth to enforce water pumping regulations.

Despite the government's attempts to manage ground water, and because of environmental and social perturbations and the recent shifts in the land use system that can no longer solely depend on seasonal traditional irrigation, perhaps it is safe to state that the future of the valley's farming system, driven as it is by household requirements and market demands, will only be maintained and expanded by power-pumped wells. Meanwhile, farmers continue to rely on free and God given water and to improvise with new technology while avoiding the water officials of the regional development authority.

Land Use and the Farming System

As pointed out in Chapter IV, in spite of the environmental dictates of horizontality on the valley's cropping patterns, the availability of household labor, land, and water determine the farmers' cropping intensity. Almost all households' farming system consist of crop cultivation, tree-crop farming, and livestock raising. To better understand the morphology and properties of household farms, I stratified the size of landholdings into three size classes which are reported in Table 5.3.

Table 5.3 shows the dominance of small size farms, indicating that 37.7 percent of the surveyed sample survives on less than 1.50 ha while 36.00 percent cultivates
holdings less than 3.50 ha. Farms whose size is greater than 3.50 ha and less than 9.00 ha represent 26.30 percent. Interestingly, the number of parcels is relatively higher among small property owners and users, particularly in the land size class below 3.50 ha. The mean parcel size ranges between 0.05 ha to 0.35 ha, and the average number of parcels per household is 13.21, with an average farm size of 1.26 ha. Although the large farms, occupying the range between 3.50 and 9.00 ha, show a relatively small average of number of parcels per household they have a higher mean parcel area: 0.35 ha against 0.05 and 0.12 ha of the other two land area classes. These data on the size of the Ziz holdings reveal a skewed land distribution among farmers, indicating the high incidence of small and fragmented property characteristic of oasis agriculture in southern Morocco.

Land use is based on the combination of the three-storey farming system, a fundamental and classic feature of the arid Moroccan oasis ecosystem. The third and second floors form the palm date, olives and fruit trees cover. Because of intensive irrigation these two floors create a micro-climate below, conducive to the practice of perennial crops which form the first floor’s vegetation cover.

The land use or farming system of the Ziz Valley consists of cereals, forage, legumes and truck farming or vegetables (see Table 5.4). Cultivated in the area for
Table 5.3  Ziz Landholdings by Land Class Size in Hectares, 1993-1994

<table>
<thead>
<tr>
<th>Area</th>
<th>Households</th>
<th>Area in Hectare</th>
<th>Parcels</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>Ha</td>
<td>Mean</td>
<td>N</td>
<td>Mean/HH</td>
</tr>
<tr>
<td>0 — 1.5</td>
<td>23</td>
<td>37.70</td>
<td>10.70</td>
<td>0.45</td>
<td>210</td>
<td>9.13</td>
</tr>
<tr>
<td>1.5 — 3.5</td>
<td>22</td>
<td>36.00</td>
<td>39.38</td>
<td>1.93</td>
<td>330</td>
<td>15.35</td>
</tr>
<tr>
<td>3.5 — 9</td>
<td>15</td>
<td>26.30</td>
<td>83.20</td>
<td>5.54</td>
<td>227</td>
<td>15.15</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>100</td>
<td>133.28</td>
<td>7.92</td>
<td>767</td>
<td>39.63</td>
</tr>
</tbody>
</table>

centuries, cereals occupy an important place in the farming system. Out of the entire survey, the area allocated to hard and soft wheat is 30.6 percent of the total parcels or 39.18 ha, while maize occupies 3.45 percent or 4.42 ha. Because of the human and animal consumption needs, and despite their low yields, farmers almost always keep a reserve of wheat to shield themselves from market prices and cereal availability. Due to changing cultural tastes, barley has given way to the dominance of winter and summer maize.

The only forage crop encountered in the valley is alfalfa. The demands of various milk cooperatives and the recent introduction of “foreign” or improved cattle races into the area, the acreage of alfalfa has increased. Perhaps these factors may explain the recent shift in the land use of the area, particularly in the Kerrandou village. Because of its strategic location, on the paved road and near the Rich Milk Cooperative, the alfalfa and cattle complex might eventually replace the wheat growing mentality of the old generation, some young farmers believe. Alfalfa represents 29.25 percent of the land use and occupies 37.48 ha of the total land area of the sample. Almost all households cultivate alfalfa; even if a farmer does not own any animals the alfalfa harvest is either converted into hay or seeds and sold in the weekly markets. Traditionally, vegetable farming or tabHirt rested on the cultivation of turnips, carrots, onions, tomatoes, squash, okra, peppers, and greens. Despite this diverse basket of vegetables and the household food requirements and market demands, vegetables occupy an insignificant part of the farming system—only 6.4 percent and covering
Table 5.4 Cultivated Land Use of the Ziz Valley, 1993-1994

<table>
<thead>
<tr>
<th>Crops</th>
<th>Area in Hectares</th>
<th>Percentage of Total Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>39.18</td>
<td>30.60</td>
</tr>
<tr>
<td>Maize</td>
<td>4.42</td>
<td>3.45</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>37.48</td>
<td>29.25</td>
</tr>
<tr>
<td>Vegetables</td>
<td>8.2</td>
<td>6.40</td>
</tr>
<tr>
<td>Fava beans</td>
<td>13.72</td>
<td>10.70</td>
</tr>
<tr>
<td>Fallow</td>
<td>25.13</td>
<td>19.6</td>
</tr>
<tr>
<td>Total</td>
<td>128.13</td>
<td>100</td>
</tr>
</tbody>
</table>

a total area of 8.2 ha of the sample. In addition, a large share of this produce is used by the households themselves, and so it represents only 4.40 percent of the total market revenue of the farm. Although there is enough water and land, and despite the fact that vegetables are usually cultivated in small parcels and thought of in terms of kitchen gardens by most farmers, others have pointed out the economic viability of vegetable production. Theft by villagers and transport costs, however, have obliged them to rethink investing in market vegetables.

Fava beans are the only legume cultivated in the area. It is part of the local diet as well as used for livestock feed, but despite its contribution to the renewal of soil fertilization through its nitrogen-fixing quality it represents only 10.7 percent of the total parcels or 13.72 ha. Short fallow or amsiki of three months or less occupy 19.6 percent of the cultivated area or 25.13 ha. However, one should be careful when categorizing fallow land in the area, because the same parcel in fallow is very likely to also have some trees, and therefore requires irrigation, manure, and may be even fertilization as well.

In summary, according to farmers, land use in the valley consists of five systems: 1) intensive cereal cultivation based on winter wheat and succeeded by maize in late summer and early Autumn; 2) a biennial system of cereals and fava beans in which fava beans succeed wheat—farmers prefer to rotate fava beans and wheat because the latter exhausts the soil while the former enriches it; 3) a semi-intensive cropping system which is similar to the biennial system with the exception that the parcel has a
short fallow; 4) the forage system seen by farmers as vital to their livestock. Alfalfa, a perennial crop, occupies the soil for five or six years and produces five to six cuts per year from one single planting. It is intercropped with wheat or barley and sometimes with maize; and 5) vegetables, a cash crop strategy which also satisfies the subsistence base of households is labor intensive and demands high quantities of manure which, in turn, renders the soil more fertile for the cereal rotation.

After much haggling and arguing about the nature of the farming system and its crop rotations in the village’s plaza, and it goes without saying nothing is ever final in the world of the farmer, they agreed on the following crop rotations as fundamental to the annual farming calendar in the Ziz Valley: fava beans give place to wheat or barley which are then replaced by maize; wheat or barley followed by maize which is intercropped with turnips and carrots and followed by fava beans; fava beans is replaced by wheat or barley which are interplanted with alfalfa which gives way to alfalfa; alfalfa after five or six years lends its place to wheat or barley which in due time lends the same spot to maize. Finally, vegetables give way to wheat or barley which are succeeded by maize, and so on. The point here farmers insist is that crops are not jealous of each other like people. They borrow parcels from each other, and this process of lending and borrowing strengthens the fertility of the soil, so that “we get better harvests from each crop”. The strategy is to interplant and to know when to rotate crops, and the skilled farmer is the one who farms even on the banks of a river. The timing of crop rotations, knowledge of soils, and skills are what the practice of agriculture is all about,
farmers enjoy repeating time after time in assertive body gestures—with commanding facial expressions enforced by inflated biceps muscles.

Land Tenure and the System of Production

Historically for the Arabs and Berbers land tenure was the founding pillar of law and tradition. Land and tree tenure are virtually the decisive vehicle through which the valley's social organization expresses itself. As mentioned in the previous chapters, exclusion of outsiders was the chief operational element of property, and tamazirt or the patrimony of the community was jealously guarded by the keepers of customary law and tradition. Until recently, no one other than a member of the Ait Atta and the holy Arab lineages could ever acquire land in the valley, particularly the Haratine. Today, however, land may be rented, mortgaged, or sold to insiders and outsiders alike despite the desire to make it difficult for the Haratine to acquire it.

Because of its symbolic and economic status, land and tree tenure or tamazirt is referred to as al-asl or origin and ancestry. In other words, origin, social structure, and identity are embedded in property. A landless household is considered "a people of no-al-asl", denoting lack of ancestry as well as indicating a client-patronage relations in which the landless work on the lands of the people of al-asl in exchange for a portion of the harvest.

Land and tree tenure and the system of production are two different concepts. While the first refers to forms of land control and access, the latter denotes labor arrangements under which land is exploited. Land is held under a spectrum of
arrangements ranging from private ownership and various forms of sharecropping to short duration of land rentals. The dominant land tenure type is what is locally called *mulk* or private property, representing 89.14 percent of the total land tenure of the surveyed villages. Fields under rent contracts, covering usually a period no longer than 5 years, account for 7.44 percent of the sample, while sharecropped parcels and *habous* lands stand at 3.34 and .08 percent, respectively.

The dominant mode of working land is family or household labor. The Ziz farmers, however, distinguish three types of labor arrangements: household labor, household and hired labor, and the one-half system. The old system of sharecropping in which the owner provided land and the inputs (seeds, manure, and fertilizer) and, in exchange for his labor, the sharecropper received one-fifth of the total production is no longer in use. Today, the one-half system has taken its place. Under this system, the landlord provides land and half of the inputs plus labor as does the sharecropper, and the sharecropper gets a half of the total production. The analysis of the household survey reveals that parcels under the half system represent 14.5 percent while those under direct family labor and wage labor represent 67.7 and 17 percent, respectively. At the ethnic level, labor arrangements are variable and data indicate the high incidence of family labor across ethnic lines. For example, 34.5 percent of the Arab parcels are managed under the one-half system, 22.7 percent run by family and wage labor, and 45.1 percent taken care of by family labor. For the Berbers, 8.3 percent of the parcels are under the one-half system, 22.7 percent tied to family and wage labor, and 67.1 percent involves
family labor. Haratine data show that 11.5 percent of fields involve the one-half system, 9.8 percent under family and wage labor, and 78.4 percent exploited by family labor.

Another form of labor arrangements is called charity or *sadaqa* fields. Although insignificant in terms of its amount, it is still practiced by the well-to-do farmers. Under *sadaqa*, the user of the field works the soil and irrigates the field. He has control over whatever he plants, but he has no legal claims over the parcel and no rights over the returns of the trees. The purpose, according to some farmers, is that in most cases these fields are far from home and have poor soils, and need to be irrigated if they have trees. It is meant as a good deed in the name or path of God because such acts provide poorer village fellows with land for farming. Because trees have very low labor demands they are never given in the one-half system. Date and olive harvests are negotiated under two types of labor arrangements, workers may either obtain one-sixth or one-tenth of total tree produce. Across the ethnic boundaries, 0.9 percent of Arab parcels, 1.9 percent of Berber fields, and 0.6 percent of the Haratine are under charity tenure.

**Agricultural Labor**

Despite the introduction of some agricultural machinery along the Ziz Valley, the cultivation of fields and trees still relies on the muscle labor of farmers. In the past, as discussed Chapter III, all agricultural work was done by sharecroppers or *khommasa*. Today, however, this ethnic division of labor has undergone serious changes, due mainly to migration by the Haratine. These changes triggered radical transformations in labor arrangements and led to the acquisition of land by the Haratine. These changes
are discussed at length in Chapter VII. The gender division of labor reserve the domain of the home and livestock to women. Their participation in the farm’s labor is limited to alfalfa cutting and the olive and date harvests, while ploughing, planting and irrigating are the work of the men.

To better understand the allocation of labor along gender, let’s consider the farm of Moha. Moha’s farm size is 4 ha and his household size is 16 individuals, of whom six members regularly provide farm labor. His consumer worker ratio is 0.34, these calculations are based on the following formula:

\[ \text{Family labor} = a + \frac{b}{2} + \frac{c}{4} \]

where \( a \) denotes mature male labor above the age of 15 and less than 65, \( b \) indicates mature female labor, and \( c \) stands for child labor (El Ouassili 1979). One, however, has to be careful when assigning certain estimates to the distribution of labor inputs at the household level, for each village or region has its specificities and traditions that keep the holy Arab women, for instance, secluded at home, and therefore do not participate in the fields or harvests labor. Table 5.5 shows Moha’s land use and labor days for each crop. It also shows a total labor budget of 1,025.5 days per agricultural calendar. In order to refine the distribution of labor throughout the year, I collected data to trace the allocation of labor and time allocation by seasonal and agrarian activities. Table 5.6 displays the availability of labor throughout the 1993-94 agricultural calendar.
Table 5.5 Moha’s Crops and their Labor Days, 1993-1994

<table>
<thead>
<tr>
<th>Activities</th>
<th>Area in ha</th>
<th>labor days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa</td>
<td>1.08</td>
<td>290</td>
</tr>
<tr>
<td>Wheat</td>
<td>0.50</td>
<td>210</td>
</tr>
<tr>
<td>Fava beans</td>
<td>0.40</td>
<td>83</td>
</tr>
<tr>
<td>Maize</td>
<td>0.50</td>
<td>75</td>
</tr>
<tr>
<td>Vegetables</td>
<td>0.75</td>
<td>110</td>
</tr>
<tr>
<td>Palm dates</td>
<td>150 trees</td>
<td>45</td>
</tr>
<tr>
<td>Olives</td>
<td>120 trees</td>
<td>30</td>
</tr>
<tr>
<td>Livestock</td>
<td>2 cattle, 1 mule, 1 donkey and 15 sheep</td>
<td>182.5</td>
</tr>
</tbody>
</table>

   Total . 1025.5

Moha is 75 years old, and he owns and manages the farm. The available household labor is composed of 2 mature males, 2 mature females, and 2 girls under the age of 15. Mature male labor is estimated as one full labor day while that of mature female and girls is estimated at 0.8 and 0.6 labor days, respectively.

A brief analysis of time and labor allocation during the course of the agricultural calendar reveals a great deal of variation in the allocation of labor by gender. As Table 5.6 indicates, Moha's available household labor days stands at 869.9 days, given that market days and religious and holidays are subtracted from the potential labor availability while the actual number of days worked is 790. Of these 790 days, 370 are carried out by men and 420 by women. In other words, each cultivated hectare requires a budget of no more than 197.5 days of labor. These data also indicate that labor within the household only satisfies about 90.80% of the total labor needs of the farm. For this reason, farmers resort to wage labor to fill the labor peaks, particularly during the harvest of cereals and trees.

Furthermore, a recent study on the role of rural women in agriculture by the Regional Office of Agricultural Development indicates that female labor reaches a peak of sixteen hour days, especially in the busy periods of the agricultural calendar. On average, women spend 150.40 labor days on domestic work, 117.90 days on fields and livestock, and 31.90 days on crafts and clothing per year (ORMVAT 1993:25-27). In summary, despite the recent efforts to provide the benefits of modern farming equipment and its cost, Ziz farmers still trust and use human and animal labor.
Table 5.6 Labor Days Availability of Moha’s Household, 1993-94

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total days</td>
<td>30</td>
<td>31</td>
<td>30</td>
<td>31</td>
<td>28</td>
<td>31</td>
<td>30</td>
<td>31</td>
<td>30</td>
<td>31</td>
<td>31</td>
<td>31</td>
<td>365</td>
</tr>
<tr>
<td>Holidays and markets</td>
<td>12</td>
<td>11</td>
<td>15</td>
<td>6</td>
<td>9</td>
<td>8</td>
<td>11</td>
<td>8</td>
<td>10</td>
<td>7</td>
<td>11</td>
<td>16</td>
<td>124</td>
</tr>
<tr>
<td>Labor days</td>
<td>18</td>
<td>20</td>
<td>15</td>
<td>25</td>
<td>22</td>
<td>20</td>
<td>20</td>
<td>22</td>
<td>21</td>
<td>23</td>
<td>20</td>
<td>15</td>
<td>241</td>
</tr>
<tr>
<td>Male hr/day</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>4</td>
<td>------</td>
</tr>
<tr>
<td>MM/hr 1*2</td>
<td>288</td>
<td>280</td>
<td>210</td>
<td>300</td>
<td>308</td>
<td>20</td>
<td>320</td>
<td>352</td>
<td>336</td>
<td>368</td>
<td>280</td>
<td>12</td>
<td>420.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female hr/days</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>6</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>------</td>
</tr>
<tr>
<td>MF/days 0.8*2</td>
<td>172</td>
<td>236</td>
<td>144</td>
<td>200</td>
<td>176</td>
<td>96</td>
<td>192</td>
<td>246.4</td>
<td>201.6</td>
<td>147.2</td>
<td>128</td>
<td>96</td>
<td>256.9</td>
</tr>
<tr>
<td>Girls/ days 0.6*2</td>
<td>129.6</td>
<td>192</td>
<td>108</td>
<td>150</td>
<td>132</td>
<td>72</td>
<td>144</td>
<td>184.8</td>
<td>151.2</td>
<td>110.4</td>
<td>96</td>
<td>72</td>
<td>192.75</td>
</tr>
<tr>
<td>Total labor days</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>869.9</td>
</tr>
</tbody>
</table>

Legend: MM reads mature male while MF stands for mature female labor.
Because of the irregularity and small sized fields and the high frequency of valued trees, many, if not all, agricultural activities are still carried out by hand or by draft animals.

**Agricultural Technology**

Farming machinery and equipment are limited mostly to animal traction and a traditional set of hand tools: *al-fas*, a heavy iron cast flat hoe, used by work parties to turn the soil; *al-masHa*, a light flat hoe tool used for opening and closing water canals; *al-mzbart* or machete for pruning date palms and olive trees; *al-gaduma* or axe for breaking wood; *al-manjal* or sickle for harvesting cereals; *al-mHasha or tamgurt*, a 20-cm toothed blade to cut alfalfa. Tractors are not uncommon and very few farmers use them, largely because of the fragmented and small size of the parcels. In the entire province, they are used on 5 percent of the cultivated area, while 95 percent of the land is worked by hand and draft animals. Since their introduction to the area in 1962, tractors and threshing machines are, however, used in threshing wheat and have replaced more and more the animal threshing.

To dig the soil to a depth of 30 cm with the hoe, farmers resort to pre-irrigation or “drowning fields”, as some call it, to soften the soil. In salinized soils, however, pre-irrigation is practiced to flush the salinized strata and sand is added to enrich the soil’s texture, thus making it more permeable and fertile. Ploughing the soil for planting involves either a reciprocal work party called *twiza* performed by groups of men who might not be related by kinship, and paid either in kind or cash. The soil is turned by a hoe and left to dry in the sun for a few weeks depending on the cycle of the season.
Once the field is dry and leveled, seeds are planted and manure and fertilizer are added. The field is divided into igmoon or rectangular strips which are then irrigated.

Since the local environment is subject to fluctuating interannual water budgets and recurrent droughts, the quantity of seeds sown by farmers is of such importance that they do not discuss how much they plant or would plant. They say that the more seeds the better, but that “quantifying seeds would only reduce their baraka or potential yield and things of plenty should not be counted, only God knows how much.” Under this camouflage of baraka, farmers when pressed, state that you cannot always count on one seed to germinate in a highly variable environment: “if one seed or two or three fail to explode due to water scarcity or rodents, the chance for the fourth and fifth seed to come up is good despite all odds. The creatures of God need to eat also and in that there is also al ajr or Godly rewards.” Farming is not a business or running a shop, it is an activity dependent on the blessings of God and the baraka of the local saints. Farming activities open and close with religious chants and Koranic recitals. It is also an afterworld activity that figures largely in farmers’ discourse about how much to plant. “We do it because we get satisfaction from working land, feeding one’s family and community, and also feeding the birds and the poor. IflaHa or farming is above all feeding ourselves and keeping God’s design healthy for future generations,” farmers say with a down to earth attitude and a common sense of religiosity.

The quality of the native seeds are seen through these environmental and religious lenses as well. Local seeds have baraka and are zakyin or yielding more than
those sold and distributed by the branches of the Ministry of Agriculture. Refraining from planting *al-mazruba* or improved or "fast seeds" stem from the fact that those seeds "don't have *baraka* and we don't know how they have been conceptualized. Their grain yield is not different from our seeds but their straw yield is very weak, and straw we need badly for our livestock. We don't know how they were produced and they could be tainted by something that only God knows; and besides, bread and couscous made out of the fast seeds or *al-zzarri‘a al-mazruba* tastes bad." Farmers voiced their concern about anything labeled fast or improved and requiring specific amounts of inputs: "you have to let the course of the palm grove play its role in the growth of seeds, and by doing something fast and playing with the things of God the result could only be mediocre and the taste is sour." Fertilizer usage trends, however, have been on the rise since the construction of the dam to compensate for the low nutrient content of storage water, and manure is used widely.

When asked, all farmers in the Ziz Valley preferred local varieties because of their reliable yields. Moha Boumezough, the director of ORMVAT's experimental agricultural station in Errachidia, has tested 49 "improved" cereal varieties to-date. Of these, the best required only 4 percent less seed, and yielded only 2 to 3 more quintals (200-300 kgs) per hectare than the local varieties of soft wheat (*farTas; Triticum aestivum*) and hard wheat (black and white *shguira; Triticum durum*) under optimal conditions—an increase of about 10 to 15 percent over the average yield of the local varieties. Yet the modern wheats have proven to be much more vulnerable to the two
common problems faced by local farmers: rust and insects. Losses of 100 percent are
not uncommon with some fast seeds struck with wheat rust, while losses of 3-4 percent
are typical for local seeds, for which insects are a greater problem. Local seeds are also
more tolerant of low-moisture stress, and vastly outperformed the introduced fast seeds
during the drought between 1979 and 1986. They also perform better on mediocre and
poor soils, and require less fertilizer.

The effects of displacement of local varieties by fast seeds is particularly
apparent when analysis of yield returns are broken down by types of cereals. Hard
wheat, which has a growth cycle of about 180 days, requires one or two more irrigations
than soft wheat, but is preferred for human consumption to soft wheat, which can be
harvested after only 140-150 days with four or five irrigations. While hard wheat
requires more water, it is more tolerant of cold, and therefore comprises about 80
percent of the area under cereal cultivation in the Upper Ziz Valley, which receives
more rainfall and experiences longer winters. Because of its higher potential
productivity, soft wheat comprises more than 50 percent of the irrigated area under
cereals in the Middle Ziz Valley and in the Tafilalt. For the same reason, four out of
seven of the introduced varieties of seed (about 75 percent of the volume of seed
distributed by ORMVAT) are soft wheat.

In the Ziz Valley, farmers growing local cereal varieties under irrigation may not
achieve the maximum potential yields of rainfed production of modern varieties in
exceptionally rainy years. But they are calculating risks, and the logic of their farming
undertaking is not to maximize yield returns and profits but to stay alive. Farmers have tried both improved and local varieties. Their decision-making is not only driven by how much production of grain they can get but also by how much hay the variety yields to feed livestock. Livestock is well integrated into the valley’s oasis agriculture, without which production will be affected and soils impoverished. Preference for local varieties stems from the fact that they have thicker and taller stems, providing more hay and grain than shorter and skinnier stems of improved seeds. Others have ruled out the possibility of planting improved varieties because they ripen quickly, and since not every farmer plants the same seeds their fields are attacked by birds. In addition to “fast seeds’” competition with the harvest of fava beans, farmers also confessed that bread and couscous made out of local varieties are much healthier and taste ten times better than flour extracted from improved varieties.

Of the surveyed households 81 percent of the sample use local seeds while 19 percent resort to improved varieties; 13.20 percent apply chemical fertilizer and 87.80 percent use livestock manure and household human waste to renew the fertility of their soil; and only 0.13 percent utilize pesticides. According to farmers, this very low share of chemical fertilizer and pesticides is compensated for by the practice of crop rotation and succession. The pattern of crop rotation such as fava beans and alfalfa is thought to restore the fertility of the soil. It is important here to note that improved seeds do not lead to farmer’s dependence on the market or the agricultural development centers for their seeds as is widely believed in most of the literature on the negative effects of
biotechnology—at least in the Ziz Valley when climatic conditions are normal.

According to Lhajj, who won a farming contest sponsored by the Regional Office for Agricultural Development in 1973, modern varieties need good soil, plenty of water, and extreme care and maintenance in terms of weeding and protection from pestilence. He has been using both chemical fertilizer and livestock manure since he started experimenting with fast seeds such as the cocorit variety of hard wheat. He claims that he won the first prize because he chose a good soil for his seeds by planting them after a rotation of fava beans and alfalfa. He won 5,000 dirhams which was converted into a modern plough, a pesticides pump, three bags of chemical fertilizer, and of course the unquantifiable and symbolic honor of shaking hands with the governor of the province. His small plot of ten square meters of fast seeds of cocorit yielded 10.5 kgs, and for that spectacular production he was named the farmer of the year. When asked, however, about his habits of purchasing seeds, he insisted, like his neighbors, that he had not bought any fast seeds since 1973. He claimed that he replanted the same seeds time and time again, and the same seeds have become localized and have adapted to his fields, despite the fact that a few stalks would be a different color from the rest of the field. By replanting them and mixing them with other local varieties, it seems that Lhaj’s skills of improvisation and hard work may have made the improved seeds go native.

Many other farming techniques performed by farmers still reflect the weight of the past on the present agrarian practices along the valley. Wheat, barley, and fava beans are harvested by the sickle while alfalfa is cut by a 20-centimeter long sickle-like
tool called *tamgurt*. Cereals are transported to the threshing floors called *inrarn* in Berber, and left there to dry for almost a month. Before threshing, the pile of wheat, or whatever the crop might be, is turned, mixed up, and certain customs are performed to protect it. A handful of salt and chunks of yeast are thrown into the cereals before their threshing. Showering the pile of cereals with salt is believed to keep the evil eye’s impact of reducing yields away, while pieces of yeast are believed to increase grain production just as yeast inflates dough.

The threshing floor has a wooden post in the middle to which a string of donkeys or mules is tied. Once the stalks are spread out around the post the animals are driven around it until their hoofs separate the grains from the straw. Winnowing or *azuzzar* is done with pitch forks or shovels to separate the grains from the straw. While the threshed wheat is being tossed in the air, the winnowers sing in Arabic “*ya l`wan uya l`wan, ya l`wan bilbarka, di tban u khali lhbub*, Oh helper, oh helper, oh wind with blessings, take the straw and leave the grains.” If it is windy, the winnowers and the landlord are said to be blessed and to be good people. If there is no wind, the wife of the landlord is asked to loosen her tight head scarf; and in case of a killer heat and no wind to be had, the landlord demands that his wife hang a screen or *busayar* to invite and catch the breeze that would eventually produce a stronger wind velocity.

The threshing and winnowing of cereals is followed by silent measuring of grains, for loud measurement of production would potentially reduce yields and its *baraka*. Once measured, the sharecropper receives half of the grain production and no
straw, the winnowers each receive fifteen kilograms of grains per day, and the landlord takes the rest of the grain and the entire straw. Grains are then poured into cloth bags and transported on the backs of donkeys or mules to the storage room of the house, while straw is transported in rope nets and stored with alfalfa hay in the straw room. In conclusion, the farmers use human and animal power and machinery to execute their agricultural tasks. Fields are worked by tractors and ploughed by hand and animal draft. Of the 61 households in the sample, 21 percent use tractors to plough their parcels and thresh their cereals, and 79 percent continue to rely heavily on human labor and draft animals. Because of its cost and despite its publicized benefits by the agricultural authorities, adoption of machinery remains impossible in most cases, for the small scale and irregular shapes of parcels and the density of date palm and olive trees in the palm grove remain the main obstacles on the road toward complete mechanization.

Livestock Raising

Like its neighboring oases throughout southern Morocco, livestock in the valley fulfills a number of economic, social, and ecological functions. Livestock is seen by farmers as a store of monetry savings mobilized year long, if need be, and a source of scarce meat, milk and wool, and manure for the renewal of soil fertility. Despite the impact of the 1980s droughts on the area, households continue to raise livestock. Livestock raising is variable and consists of local and improved races. Cattle, sheep, and goats occupy a privileged place in the farming system of households.

The Ziz farmers distinguish two strategies of livestock raising: 1) an intensive
system of milk production and dairy products geared to the regional cooperatives and markets, and based largely on improved races of cattle or what farmers call "Dutch cows"; and 2) an extensive livestock established to satisfy the subsistence of households in terms of dairy products and manure for their fields.

As Table 5.7 shows, only 49 out of 61 households surveyed (80.35 percent) in the area raise cattle, and the mean head per farm remains very low and it does not surpass 4 head per household. On the other hand, within the same sample, 13.6 percent raise improved cattle races (pie-noire and crossbreed or croisée) and 82.4 percent continue to rely on local or baldi races. However, the mean number of improved cattle tends to be greater, 5.6 cattle per household, for households with a farm size of 4 hectares or more. Because of its adaptation to the local environment, modest demands for feed and reputed rusticity, the baldi or local cattle are the dominant race.

Additionally, the improved races of cattle were introduced into the region in 1974, and their integration into the local farming system was facilitated by the credit services offered by the Agricultural Credit Bank (Le Crédit Agricole), the free genetic amelioration services and the use of artificial insemination offered by the Animal Production specialists of the Regional Authority for Agricultural Development,
Table 5.7  Role of Cattle Raising and Race Type in the Ziz Valley’s Farming (N=49)

<table>
<thead>
<tr>
<th>Number of Cattle</th>
<th>Local Race (%)</th>
<th>Improved Race (%)</th>
<th>Mean per household</th>
<th>Mean Income (dhs)</th>
<th>Head Sold (%)</th>
<th>Number Consumed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>82.4</td>
<td>13.6</td>
<td>3.6</td>
<td>2417.08</td>
<td>23.30</td>
<td>8.5</td>
</tr>
</tbody>
</table>

and the establishment of milk cooperatives throughout the valley.

Cattle provide farmers with various dairy products such as milk, fresh butter turned into cured and salty butter or udi, manure, and calves and bulls converted into cash in the weekly markets throughout the year. Milk production, nevertheless, varies across types of cattle and is still subject to climatic conditions and household management skills. According to farmers, milk production ranges between 2.5 to 12 liters per day per cow for local and improved races of cattle, respectively, or, 520 and 2,400 liters per year per cow over the 200 day period of lactation, respectively.

If cattle ownership is a social marker of prestige and wealth, sheep and goats are the backbone of livestock raising in the area. Sheep and goats are said to constitute “small change” for the small farmer, to be dispensed of in response to household subsistence requirements in times of economic hardship. Within the sample of 61 households, 90.20 percent own sheep while 9.80 percent possess goats (see Table 5.8). The six households who own goats are recent pastoralists who settled in the area since the 1980s, and they still maintain dual household organization—one in the valley and the other on the move along the transhumant routes in the region. The settlement of pastoralists has reenforced the symbiotic relationship between intensive agriculture and livestock raising, one in which the pastoralists and their sedentary relatives prefer. All six households combine pastoral and agricultural activities, and all of them are involved in tasbabt or livestock speculation in the regional markets.

As shown in Table 5.8, almost all households own sheep, while only 9.80
Table 5.8 Small Ruminants, Draft Animals, and Small Livestock by Household in the Ziz Valley, 1994-1995

<table>
<thead>
<tr>
<th>Type</th>
<th>N</th>
<th>Household (%)</th>
<th>Mean Number</th>
<th>Percentage Sold</th>
<th>Percentage Consumed</th>
<th>Mean Income (dhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheep</td>
<td>863</td>
<td>90.2</td>
<td>15.70</td>
<td>15.30</td>
<td>25.70</td>
<td>901.15</td>
</tr>
<tr>
<td>Goats</td>
<td>546</td>
<td>9.80</td>
<td>91</td>
<td>13.50</td>
<td>00</td>
<td>2662.00</td>
</tr>
<tr>
<td>Donkeys</td>
<td>59</td>
<td>96.70</td>
<td>0.96</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Mules</td>
<td>29</td>
<td>44.30</td>
<td>0.44</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Poultry</td>
<td>360</td>
<td>62.30</td>
<td>9.54</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Turkeys</td>
<td>47</td>
<td>16.40</td>
<td>4.70</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Pigeons</td>
<td>8</td>
<td>68</td>
<td>8.5</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Bees</td>
<td>6</td>
<td>0.02</td>
<td>6</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Camels</td>
<td>8</td>
<td>0.02</td>
<td>8</td>
<td>42.82</td>
<td>---</td>
<td>60000.00</td>
</tr>
<tr>
<td>Rabbits</td>
<td>42</td>
<td>9.8</td>
<td>7.00</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

percent within the sample practice goat raising. The dominant race of sheep is locally
called "al-dmman", and this type is reputed for its adaptation to the arid environment of
the area, as well as its high and prolific birth rate. The Ziz Valley is the native home of
the dmman race, and well known for its unique and exceptional reproductive capacities.
Its reproduction rate is believed to surpass that of the Russian sheep, called Romanov.
Farmers associate the following properties with the dmman population: high fertility and
the ewe lamb reproduce in their first year of age, reproduction can take place any time
of the year and ewe do not have a period of biological or sexual rest; the interval
between lambing is six months, and the average production per ewe per year is two
head. Giving birth to triplets is frequent, those of quadruplets are not exceptional, while
quint or six head are rare. The dmman race constitutes all of the sheep population in
the Ziz Valley. It is integrated into the agro-ecology of farming and satisfies many
farming needs—a source of cash for farmers through livestock products (animals and
wool), and provides manure, a critical ingredient without which intensive farming
productivity is low and, therefore, cannot assure household subsistence needs.

In contrast to sheep, goats are grazed in the surrounding hills or constitute herds
of pastoralists who have kin ties with sedentary households, although this practice
involves only 9.80 percent of the surveyed farms. Draft animals are limited to donkeys,
mules and camels, and no one owns any horses. Farmers use donkeys and mules for
ploughing fields and threshing and harvesting crops, while camels are used by
pastoralists for transporting household belongings during seasonal movement of herds.
Of the surveyed farms, 96.70 percent have donkeys while 44.30 percent have mules. As for small livestock, almost every household has a mixed space in which poultry, rabbits, turkeys, and bees are raised for the provision of meat, eggs, and often times for cash through sales of eggs. When asked about the benefits of a mixed variety of small livestock, a farmer responded that he raises them to save face in case unexpected guests show up at sunset, so that he would have some meat to feed them, since the market is twenty kilometers away. Despite this variety, however, farmers talked about the decline of the rabbit population and beehives in the area over the years, and they attribute these changes to the negative impact of the chemicals used to kill locusts in the late 1970s and early 1980s.

Of the surveyed sample, 96.6 percent of livestock, particularly sheep and goats, is held under direct ownership while 3.4 percent is subject to either the one-half or one-third partnerships. According to farmers, the one-third arrangement involves household-penned sheep in which the owner receives two-thirds of the herd's production and the other third goes to the partner who also has a share of all of the milk and wool. The one-half partnership or "ras al- mal", which has become a common practice due to the scarcity of animal feed, which requires the division of the herd into two equal shares between the partners, who are often a pastoralist and a farmer.

In spite of livestock tenure, animal sales account for a substantial share of the total household incomes, whether these households practice direct ownership or partnerships. Within the sample of 50 households who are involved in marketing
livestock and its derivative products, a mean of 50.72 percent of the total revenue is generated by animal husbandry. Eighty two percent of the sample received nearly half of their yearly income from this activity, or a mean income of 10,227.96 dirhams per household during the 1993-94 agricultural calendar. Despite the magnitude of the role of animal production in the economic viability of farming, its contribution does not mirror the entire nature of the economics of farming on the Ziz Valley. Migration remittances, wage labor and tree farming, particularly dates and olives, pump in some cash into the household. However, according to farmers, to state that livestock is one of the most important aspects of farming, and some young farmers, despite their fathers’ wisdom of insisting on growing cereals are poised on the expansion of alfalfa fields, and therefore the intensification of animal raising. Livestock sales put quick money in the farmers pocket or tin box. These monies allow him to purchase necessary subsistence items such as tea, sugar, coffee, clothing and medicine, to send his children to school, and to make down payments on land and purchases of modern irrigation pumps.

Animal feed is based on straw, green alfalfa, and alfalfa hay. For this reason alfalfa’s acreage rivals that of cereals as discussed in Chapter IV. All members of households participate in the labor requirements of raising animals. However, the tasks of fodder cutting, assistance during lambing, taking care of the herd and its products, and fattening of rams for the market fall squarely on the shoulders of women. Children often water livestock while men are in charge of the marketing of livestock. During the active cycle of growing alfalfa, livestock is fed green alfalfa and straw in association
with seasonal products and other concentrated feed and tree branches. In the winter months when alfalfa becomes dormant, all farmers resort to purchasing concentrated feed from the market such as bran, beet pulp, and straw and barley, particularly those who own improved races of cattle (17.6 percent of the surveyed farmers). This perhaps suggests that household production of fodder and feed falls short of covering the feed requirements of animal husbandry. The analysis of farmer's patterns of interaction with markets reveals that the twelve households who raise improved cattle spend around 77.7 percent of their dairy revenue on veterinary services and animal feed.

Tree Farming

Besides date palms and olive trees, other fruit or nut trees are widely grown in the Ziz Valley. Farmers cultivate pomegranates, figs, vines, plums, almonds, peaches, apples, apricots, pears, and quinces, and the production is oriented toward the satisfaction of household needs as well as market requirements. Fruit trees are not completely separate, but they rather are associated with underlying cereal, forage, and legume crops.

Table 5.9 shows the wide variety of trees the Ziz farmers grow and underscores the economic contributions of trees to the Ziz households. Because of cold climate, farmers in the Upper Ziz Valley—from Kerrandou northward—do not cultivate date palms. Instead, they grow olives, which are not native to the Kerrandou area. They
Table 5.9 Distribution of Trees by Household, 1994-1995

<table>
<thead>
<tr>
<th>Type</th>
<th>N</th>
<th>Mean Trees per Ha</th>
<th>Mean Trees per Household</th>
<th>Mean Yield (kg)</th>
<th>Mean Income (dhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palm dates</td>
<td>34</td>
<td>49.60</td>
<td>100.75</td>
<td>21.88</td>
<td>4899.00</td>
</tr>
<tr>
<td>Olives</td>
<td>61</td>
<td>54.46</td>
<td>119.00</td>
<td>71.20</td>
<td>5162.00</td>
</tr>
<tr>
<td>Apples</td>
<td>20</td>
<td>71.43</td>
<td>321.45</td>
<td>12.20</td>
<td>5395.00</td>
</tr>
<tr>
<td>Pomegranates</td>
<td>24</td>
<td>5.75</td>
<td>21.60</td>
<td>18.90</td>
<td>2303.60</td>
</tr>
<tr>
<td>Quinces</td>
<td>29</td>
<td>6.30</td>
<td>15.14</td>
<td>33.30</td>
<td>921.13</td>
</tr>
<tr>
<td>Figs</td>
<td>24</td>
<td>3.20</td>
<td>9.25</td>
<td>34.60</td>
<td>627.70</td>
</tr>
<tr>
<td>Vines</td>
<td>25</td>
<td>1.8</td>
<td>4.25</td>
<td>46.40</td>
<td>688.00</td>
</tr>
<tr>
<td>Apricots</td>
<td>17</td>
<td>2.5</td>
<td>14.20</td>
<td>30.17</td>
<td>269.70</td>
</tr>
<tr>
<td>Pears</td>
<td>3</td>
<td>1.85</td>
<td>4.33</td>
<td>15.50</td>
<td>145.00</td>
</tr>
<tr>
<td>Peaches</td>
<td>13</td>
<td>1.90</td>
<td>9.92</td>
<td>29.25</td>
<td>384.60</td>
</tr>
<tr>
<td>Plums</td>
<td>14</td>
<td>0.70</td>
<td>3.29</td>
<td>34.30</td>
<td>267.15</td>
</tr>
<tr>
<td>Almonds</td>
<td>5</td>
<td>2.43</td>
<td>64.80</td>
<td>26.90</td>
<td>995.00</td>
</tr>
<tr>
<td>Poplars</td>
<td>20</td>
<td>3.95</td>
<td>26.45</td>
<td>15.30</td>
<td>409.75</td>
</tr>
<tr>
<td>Reeds</td>
<td>8</td>
<td>35.70</td>
<td>594.40</td>
<td>20.75</td>
<td>434.40</td>
</tr>
</tbody>
</table>

were brought from Gourama, 58 kilometers northeast of Kerrandou, introduced by the French in the 1930s. The French explorer de Foucauld (1888:229, 236), while traveling through the region in 1884, describes the Kerrandou area as treeless. Besides olives, these farmers also have recently cultivated apples for the market. Olives are also grown in the Middle and Lower Ziz Valley, but in these areas the principal tree is the date palm, despite the fact that its density is in decline due to date palm disease.

Because of the palm disease, the historical dominance of dates is slowly being replaced by the cultivation of olives. In contrast to an average of 100.75 palm trees per household, the sample reveals a higher average of olive trees per household, 119.00. Within the sample, dates and olives represent 24 percent and fruit trees 13 percent of the total revenue generated by the marketing of agricultural products. Despite the recent decline of the date palm, it is well adapted to the arid environment and so farmers along the middle and lower stretches of the valley stated that no other tree can completely replace its economic and ecological role in the viability of farming. Date palms still represent almost 65 percent of the total trees grown in the entire region. In spite of the higher percentage of olive trees per household, olives still have low yields caused by extreme interannual variation in production exacerbated by traditional cultivation methods and recurrent droughts. Other fruit trees such as pomegranates and quinces are grown for subsistence and occasional marketing in times of surplus.

The date palm (*Phoenix dactylifera L.*) has constituted the bread of the desert dwellers or *pain Saharien*. The palm tree enjoys a mystic cult in the Sahara Desert. It
is impossible to conceive of life in the valley without the date palm. “Whoever kills a sheep commits no greater sin than if he killed a bee, whoever destroys maliciously a date palm commits a sin equal to the killing of 70 prophets,” a local saying goes. There are many sayings and songs among farmers which underscore the high esteem and honor in which the date palm is held. The date is not only a source of delicious fruit, but it is a source of food and nutrition—one kilogram of dates equals 1,300 to 3,000 calories (Toutain 1977:203).

The pits of dates and parts of the palm branches are used to feed livestock. Because wood is very scarce in the area the trunk is split into beams, covered with fronds, and used for the roofs of houses. The trunks and fronds are also used as fuel. Palm fibers and the leaves of the fronds are woven into mats, baskets, and ropes, which are as solid as those made of reed or wool. Palm fibers are also woven into hats and leaves are made into straw figurines by children. In their attempts to arrest the process of desertification, farmers insert palm fronds upright in the sand to make fences to keep the shifting sands out of the palm groves.

The lips of new born-babies are rubbed with a paste of fresh dates, and this practice is believed to keep them healthy and strong. It is said that the Prophet Mohammed recommended the consumption of dates for health’s sake, and tradition has it that every Muslim ought to break his Ramadan fast with at least three dates and a gulp of cultured milk, if possible. Despite the fact that almost all the inhabitants are Muslim, some urban dwellers make palm wine or what they call ma Hya or water of life. The
wine is an intoxicating drink, and believed to have been the speciality of the Jews before they departed from the area.

It is said that the “date palm tree has its crown in fire and its roots in water.” In fact, date palms are adapted to spells of drought and to temperatures below freezing. The ideal environment for date palm growth and fruition is one in which the temperatures exceed eighteen degrees Celsius and the total mean daily temperatures from May to October, ranges from 3,700° to 5,000° C (Pereau Leroy 1958:15-19; Toutain 1977:204). In late March and during April, the date palm blossoms, and you can hear farmers in the palm grove singing while working, sitting high in the crowns of the palm trees, inserting mâle pollen (Dokar) into the female inflorescence. The palm tree has female and male inflorescence on separate trees, and to save time and space, trees are planted out in the proportion of ten female to one male tree. Slivers of the male inflorescence are cut, and planted into the female inflorescence, then tightened by a leaf thread. While engaged in this task, they loudly sing the praises of God and ask his blessings on their efforts. “Bless these Dokar or inflorescence. Let these pollen slivers ripen into dates, and when harvest comes may they grow as large as oranges and as sweet as honey.”

When harvest time comes in September and October, farmers climb up into the crowns again and cut the bunches of dates. Below them women, men, and children stand ready to catch the dates in plastic sheets and put them into baskets. These baskets and the bunches are transported on the back of donkeys or mules to the threshing floors.
where yellow dates are spread out, where with the help of the sun they will eventually ripen. Once dates are ripe, women select the best ones to be stored and some of them are kneaded into blocks of date paste and packed into plastic bags, locally called *tighni taqfurt*. On average, the paste keeps for more than five years, and farmers capitalize on this paste because “it is their weapon against cash and food shortages in hard periods.” Because of the date paste’s long shelf life it is also sought by pastoralists, who exchange blocks of salt for dates.

Date palms are not grown from date pits. Offshoots or cuttings are carefully selected, planted and then sheltered by a cover of fronds to protect them from the burning sun. Six years later the young cuttings begin to produce their fruit. A keen eye watches the dates grow and various methods of tending them dominate the conversations of farmers. Farmers distinguish seven female date palms and five male date palm varieties. The female varieties include *al-majhul*, *bufgus*, *buslikhan*, *karna*, *busardun*, *buskri*, and *khalt*; and the male date palms consist of *inifit*, *tarawin*, *ras lHmar*, *bu`mran*, and *aqdum*. An analysis of households growing dates reveals that 5.20 percent and 7.00 percent of the sample possess the best quality *majhul* and *bufgus* dates, respectively. Seventy five percent own *khalt* or a mixed variety, 0.80 percent *buskri*, 4.50 percent *karna*, 1.5 percent *busardun*, and 6.00 percent *buslikhan*. Within the same sample 36.70 percent of the entire agricultural revenue is provided by date sales, particularly *majhul* and *bufgus* varieties. As for the place of date sales, 57.50 percent is sold in the village, 22.90 percent in the weekly markets, and 19.60 percent to outside
speculators. Twenty one percent of dates are sold in trees and 78.00 percent is marketed after the harvest.

In the middle of the well-tended palm groves of the Aouffous district, I came across dozens of half-withered or completely desiccated palm trees. "The bayud has over the decades decimated hundreds and hundreds of palm dates", explained Abderrahman with an enigmatic smile crossing his face. "How come the tree of paradise and the Sahara is not immune to this disease?," I asked Abderrahman. "This is a disease that I remember from childhood, some even think that it has been in the palm grove before the arrival of the French to Southeast Morocco [in 1917]", he stated, with his eyes directed to the open blue skies, as if he were asking God silently to send a remedy to the bayud. The same disease goes by the Arabic name nmila or little ant in the Dar'a Valley.

Al-bayud or "Fusarium oxysporum var. Albedinis (Killian and Maire) Malençon, is the most dangerous disease of date palms in Morocco and Southwestern Algeria. Al-bayud was first observed in the Dar'a Valley before 1890. Since then it has spread slowly, and by the 1990s the only date-growing area free of al-bayud is the Marrakech palm groves, north of the High Atlas Mountain range. Al-bayud spread more rapidly towards the east than the west, and by 1898 was in Figuig on the Moroccan-Algerian borders. By 1949 al-bayud made its home in many palm groves in Southwestern Algeria (Bisson 1991; de la Perrière et Benkhalifa 1991; Jambardan 1948; Pereau Leroy 1958).
Pereau Leroy (1958:40), a French date palm geneticist, reported that by 1950 *al-bayud* had destroyed 10,000,000 palms in Morocco, including the best commercial palm varieties, such as *majhul* and *bufgus*. The remaining 5,000,000 palms were mainly seedlings and varieties of local interest. Regions that boasted a high density of 300 to 400 palms per hectare, and where intercropping was virtually unknown, such as the Aouffous district, were reduced to five to ten palms per hectare. These damaging losses are exacerbated by the fact that in many oases with an irregular surface water supply, the loss of palms meant the absence of the staple crop and a medium of exchange for which there were no equal substitutes. The ravages of *al-bayud* have even forced emigration of the population from severely contaminated regions.

Symptoms of *al-bayud* appear first on one or more of the matured leaves in the middle of the palm’s crown. Typically, the affected palm fronds slowly become white within a few days to several weeks, hence the name *al-bayud*, which means the color white in Arabic. The old leaves wither away as no new leaves form, leading to the death of the palm. The average time from the observation of symptoms to death ranges between six months to two years. However, trees may die in one month or struggle to survive for over ten years. According to Pereau Leroy (1958:44-45), the ideal temperature range for the growth of the *Fusarium* is 21° C to 27.5° C, but it thrives very well in temperatures as low as 18° and as high as 32° C. Thus, irrigated soils in regions such as the Ziz Valley, provide conducive temperatures for the growth of the fungus from May to October.
The causal agent of *al-bayud* is soil-born and may be spread locally by irrigation, wind, and contaminated palm wood. The spread of *al-bayud* to other date growing areas is ascribed by Pereau Leroy to the movement of the fungus in goods made of palm fibers, such as ropes, baskets, and he found that the pathogen persisted for several weeks in infected dry pieces of palm wood. Its spatial distribution followed the old caravan trade routes that criss-crossed the Moroccan and Algerian oases. When such trade goods and other articles are discarded in a moist area favorable for the reproduction of the fungus, it can resume its development in the soil and infect nearby palms. *al-bayud* takes epidemic proportions only when there exists a combination of the pathogen, a non-résistant variety, and abundant irrigation (Pereau Leroy 1958:56-62).

Other diseases or problems of importance according to the Ziz farmers are locusts, the *jnun* or devils, *Ikhamaj*, and fruit rot and *farina*. Locusts devour the green leaves of the fronds, and are said to reduce dramatically if not destroy the fruit produce of the date palm. The *jnun* disease causes the bud of the palms to grow sideways instead of vertical. This growth pattern forms nests of date palms, and they are believed to be hunted by the devil. In the *Ikhamaj* disease the inflorescence is attacked by a spread of fungus before it comes out of its spathe. Pre-harvest rot or spoilage may be caused by a large number of fungi and its incidence is triggered by rainstorms during the early and final stages of ripening. The *farina* parasite, *Parlatoria blanchardi* Targ., devours the green matter of the fronds, disturbing the photosynthesis properties and respiration of the date palm. It also injects a toxic liquid into the fronds which triggers the drying of
the date palm. As a result, it reduces the amount of date production and renders the fruit small and infested with insects.

Contaminated trees never recover, although the rapid growth of infections may be retarded by reduced volumes of irrigation water. This, however, is impossible when date palms are interplanted with subsistence crops. Reduction of the irrigation volume might also render the tree less productive, and the crop is lost either by disease or drought. Up until 1995, the use of certain resistant varieties was the most practical means of controlling *al-bayud*. Research programs to combat *al-bayud* have focused since the 1950s on breeding and selection of superior, resistant varieties for local use and export, and have been recently intensified, particularly after the more severe droughts of 1979-1984.

In 1987, for example, the Regional Agricultural Authority or ORMVAT, in cooperation with farmers, planned to plant 147,500,00 resistant varieties with fruit of high quality suitable for domestic consumption and export orientation. In the spring of 1992, however, the ORMVAT distributed 14,000 resistant varieties of high quality date palms. The fine varieties of *majhul* and *bufgus*, which were the backbone of Moroccan date exports to Europe in the nineteenth century, are highly sensitive to *al-bayud* and have been drastically reduced in density and in numbers. Since the 1970s, resistant female varieties have been crossed with local resistant males and pollen of resistant male varieties from Indio, California (ORMVAT 1987).

The Aouffous District, in the middle of the Ziz Valley, is the native home of the
*majhul* date variety grown in Arizona and California. Before 1920 this variety is said to have constituted about 25 percent of the palms grown in the district. Today it is believed to be less than 0.5 percent. In this district that had once a solid and high density of dates, the palm grove has been reduced by more than 50 percent. Except in a few high density patches, date palms no longer dominate the landscape, but occur as sparse bundles in fields of cereals or among olives trees which have to a large extent replaced them. The palm grove is giving way to the olive grove (ORMVAT 1981 and 1987).

According to the 1992 ORMVAT’s Annual Report of Activities, the estimated number of date palms in the entire Errachidia province is 1,200,000 trees. Of this number only 788,940,00 were productive. The average yield per tree was twenty kgs, and the total production was 15,778,80 tons. The same report states that the palm groves were losing date palms at the alarming rate of 3 percent a year, or 36,000 trees a year. If the statistic of 1,200,000 is correct and assuming a replantation rate of 14,000 trees a year, by the year 2026, approximately 24 percent of the present date palms will have disappeared from the entire valley (ORMVAT 1992:28).

The question, then, is what strategies farmers have used to protect their date palms from the decimation of *al-bayud*. According to Qaddur, a 67-year old Haratine, many trees had died from *al-bayud* in his life time, and neither farmers nor the government officials could come up with a cure for the palm disease. “Date palms are like us, they grow, they produce, and they die, something that man cannot solve”, he
stated in a resigned voice. Despite the religious attitudes and interpretations that usually start with the written will of God and end with it, he and his fellow farmers have been experimenting with various local remedies to stop the decay of the palm grove.

According to Qaddur, once farmers spot the gradual whitening of the fronds of the palm they would burn the tree to get rid of the infection. Afterwards, if the symptoms persist they would poor boiled water mixed with salt and ashes into the heart of the date palm's crown. This chemical mix is said to act as poison and is capable of killing the growth of the fungus before it reaches the heart of the palm. He believes, however, that some trees, when treated with these remedies, would come back to life and others die.

Upon the death of date palms, farmers log and split them into wood pieces to be used for fuel. Upon splitting a dead palm, he observed that the tree trunk was full of al-bayud or little white chunks of fat insects (shHmat larD). To avoid al-bayud farmers, for instance, plant new offshoots of date palms by digging a deeper and rounded hole, spread ashes and salt at its bottom and then they put a flat stone on it. This method is believed to deter the growth of al-bayud, and therefore it blocks its movement and climb through the trunk and to the heart of the palm. Qaddur has used the latter practice with his majhul cuttings, and so far his operations have been successful, he said with a proud face that comes with someone who has beaten his enemy or bête noire.

Qaddur emphasized that the density of the village’s palm grove has been reduced, and this is due to the mediocre agricultural practices of shallow tilling that have helped
al-bayud make its nests all over the palm grove. Not long ago, he remembers, some areas in the palm grove were referred to as Saf n'khal or the line of palm dates, and one could not see anything but palm trees or bundles of them next to each other. If you chose not to walk from one parcel to the other in the palm grove, you could climb a palm tree, and jump from one to the next until you reach your destination.

If these ethnographic statements mean anything, they are a testament to the gradual degradation of the date palm groves. These statements celebrate a sad memory of dense date fields that attempts of forgetting the line of dates and majhul trees are always inserted before and after all conversations on date culture and its history in the valley. It is a depressing and sad milieu because, as poetically expressed by Captain André Roy (1946:3): “L'homme regarde impuissant le bayoude ou le douda attaquer le palmier. L'arbre se désèche et meurt, c'est beaucoup de la vie de l'homme qui s'en va.”

While the middle and lower parts of the valley are slowly caving in to the wrath of al-bayud, farmers in the Upper Ziz Valley are facing the threat of a bad weed they call tugha n'tzgart or the thorny bush grass. This weed is yellow and has “invaded” the fields over the last ten years. It is a weed that attacks crops and forms a web-like structure in which all growing crops are suffocated, and slowly die. Farmers believe that the weed was brought to the area by migrant birds, since every spring swarms of foreign birds visit the area. These birds build their nests on thorny trees and bushes outside the fields.
A delegation of agricultural scientists and government officials investigated the problem and consulted with farmers in 1990. The scientific delegation recommended that farmers burn the nests of the migrant birds and the grass wherever it might be found. Some farmers stated that this grass could be the final parasite to drive them out of farming if no effective herbicide comes to save their parcels and trees. However, the magnitude of the problem resides in the fact that livestock had been fed on this grass, and the same grass might have found its way back to the soil in the form of manure. It is another challenge that farmers are not prepared to combat on their own, and farmers expressed their fear that this bad weed will eventually drive them away from their homes and fields, just as ‘al-bayud disease has done to some of their neighbors to the south.

In summary, farming in the Ziz Valley epitomizes the integrated oasis agriculture model which includes crop farming, livestock, and tending of trees. The average household property is highly fragmented and its size revolves around 1.21 ha. This farm size provides subsistence and cash income. The family household is the central corporate social unit. It manages resources, mobilizes labor, and organizes patterns of subsistence consumption and produce marketing. Households have ownership of means of production and others have tenure rights in land. Despite that they constitute independent units of production and distribution, they are part of the village with common property institutions, such as the management of the irrigation system. The Ziz Valley households are unequal and their inequality does not block them from social and economic mobility. Their parcels, under the shade of date palms and olives, are devoted
to alfalfa, cereals, legumes, and vegetable production. Farm labor is based on household labor, wage labor, and various forms of sharecropping arrangements. Agricultural technology, such as the usage of tractors and improved varieties of seeds, is used with caution in response to labor shortages and environmental changes. Fields are rotated, and with supplementary fruit produce and livestock raising, offer a rational and economic use of the land.

Nevertheless, farming on the edge of the Sahara Desert involves a constant and evolving process of give-and-take with the environment of the oasis ecosystem. The land use system seems to be undergoing remarkable transformations, and there appears to be a pronounced shift from subsistence cereals towards the expansion of forage acreage and, hence, the intensification of livestock raising. The Ziz Valley is a land of constraints, contradictions, and human-crafted opportunities. Constraints are aridity, pestilence, bad weed invasions, and al-bayud. Contradictions are reenforced by the cyclical droughts and floods—property and its productivity are either damaged by floods or taxed by drought. Opportunities are not gifts of nature, but conceived in various adaptation strategies such as irrigated agriculture, trade and exchange, and emigration. The issues of how different ethnic groups of the valley have been affected by this host of factors, and how they have responded to them are the subjects of the following chapter.
CHAPTER VI

ETHNIC STRATIFICATION AND AGRICULTURAL INTENSIFICATION IN THE ZIZ VALLEY

Introduction

As increasing population pressure on fragile environments and the burden of massive foreign floods of cheap food and severe droughts resulted in declining food production, national development policies have come under attack for their disregard of traditional, intensive agriculture and the marginalization of the resource poor farmers. Dominant among the factors blocking the potential of North Africa to feed itself has been the indifference of planners to the problems and productive capabilities of smallholders operating within traditional farming systems of technology.

Because large-scale agricultural schemes have left a notorious record of social inequalities and environmental problems, and the smallholder provided a large share of the food exports, attention since the 1970s has been focused on the potential productivity of smallholdings. Given the high urban rate of unemployment associated with weak industrial bases, economic opportunities and social services in rural areas are viewed by planners as a way to reduce rates of urban migration and inequity. The accent in this shift is on biological packages of fertilizer and improved high yielding crop varieties, different from the technological package based on industrial farming and large-scale irrigation schemes. The rationale behind this new emphasis is that the technological fix usually benefits the large-scale farmer, while the biological package is accessible to a
The Ziz farmers are small-scale farmers, and practice intensive or permanent agriculture. Intensive agriculture is a continuous process of boosting the productivity of land currently under cultivation by adopting a bundle of "fine comb" techniques such as irrigation and water-control, diversification of production, erosion control through deep tilling, ridging and terracing, and systematic application of manure to restore and increase soil fertility. In contrast to expansion and/or extension of the land base under cultivation, intensive agriculture, defined in terms of yield per unit of land over time, stresses output as the dependent variable, and it examines the impact of the total factors of production (labor, capital, and technology) as the independent variables (Boserup 1965; Geertz 1963; Netting 1993). All Ziz farmers rely on intensive farming based on crop cultivation, tree-crops, and livestock raising. I shall argue below that the relationship between ethnic stratification and land intensification provides an important aspect of the theoretical framework within which the logic of intensification and extensification has been approached. I shall also argue that land intensification is not only the result of population pressure within a circumscribed environment, but also the outcome of ethnic social mobility and access to land. Two major schools of thought permeate the literature on intensive agriculture: the Boserup model and the ecosystem approach.
Boserup and Agricultural Change

Boserup suggests that agricultural change is related to population pressure and that changes in the man/land ratio should be reflected by a transition in land use strategies. Boserup's argument is based on the idea of diminishing returns to labor investment. Without the inducement of resource scarcity, people do not intensify due to the increase in work and the mediocre, and falling, returns on labor. Using a set of examples of traditional agricultural systems, she advances the relationship between population density and agricultural intensification. Accordingly, the intensification index is based on the cropping frequency of land use systems along a temporal spectrum, from forest fallow through bush and short fallow to annual and multicropping (1965:28-34).

Because it is a dynamic classification, she states that agricultural change could move toward intensification with population pressure and toward the direction of extensification of land use if population density declines. Intensive farming systems under conditions of land scarcity emerge as the outcome of a higher ratio of people to land. Cross-country case studies confirm some aspects of the postulated relationship between population density and land use, despite varying crops, soils, tools, and rainfall. In Sub-Saharan Africa, for instance, Pingali, Bigot, and Binswanger (1987) compared fifty-two cases from nine countries and their findings indicate a historic change along a spectrum:

Agricultural intensification is caused by a decrease in the cultivable area per
capita when the population density increases because of the growth or concentration of population in particular regions. The causes of concentration are both historic—tribal war, slave trade, and so on—and contemporary—land use policies, lower costs of transport and so on. Concentration of population also occurs in areas endowed with high altitude, fertile soil, and other favorable conditions.

Though the causes of increases in population density are varied, the consequences—reduction in cultivable land per capita and the intensification of the agricultural system—are fairly similar in most locations. In addition to reducing the length of fallow on land already in use, whether cultivated or fallow, growing population density also leads to the colonization of lands—such as swamp lands—formerly unused for agricultural purposes (Pingali et al. 1987:43).

Small-scale farmers are not so frozen in their intensive systems that they will keep them when the ratio of human density to land changes. Evidence for this sort of change is available from the Americas, Africa and other parts of Southeast Asia.

Colonization schemes of the plentiful lands of the Americas, in particular South America, by slash and burn techniques and ranching show how farmers gave up their intensive farming 'tool kit' they had practiced on their small fields before in Europe (Boserup 1965). Agricultural settlement schemes in such areas as the Amazon Basin and Southeast Asia are as often responses to state subsidies and volatile inflation rates as they are to higher population densities (Moran 1981). In Paso, a community in Costa Rica, Barlett (1977) states that movements in the direction of intensive and extensive land use systems toward large or small farms are mediated by access to land, capital needed for the purchase of inputs, and the development of markets. She explicitly points out that access to land and capital differentiates between the landless, middle sized farmers, and rich farmers, and accounts for farmers' economic choices to keep on
swiddening, to invest in tobacco terracing, or to disintensify land by switching to cattle ranching. The production of land held in large farms declined, and risks of erosion and deforestation increased. However, the strategies of small-scale intensive strategies increased productivity per unit of land, while minimizing the risks of environmental degradation.

 Likewise, arguments about the relationship between farm size and the debate surrounding the evidence for the inverse relation between farm size and productivity stress the superior performance of intensive agriculture based on a set of factors concerning technical and economic efficiency, the structure of asset ownership, social differentiation, dual market structures and imperfections, and agrarian transition (Giovanni 1985; Berry and Cline 1979; Strange 1988). Roa (1966) suggests that small farmers are motivated to take care and better manage their own plots of land than large farmers. For Egypt, Radwan (1986) reaches the conclusion that "in rural Egypt, as is often the case elsewhere in Third World agriculture, resources are used more intensively on small family farms. Therefore, the scope exists, in the sphere of farm production, to raise total output and reduce income inequality through further land redistribution" (1986:79).

 It is not surprising that the Indian and Egyptian literature echoes the same evidence, since both countries have higher population density subsisting, for the most part, on a limited stock of fertile land. Evidence from both places contribute the superior productivity of family farming to the technical components of higher land use
and cropping intensities, and cropping patterns of higher value yields on small-size holdings. These in turn imply the more intensive use of land and other qualitative differences in factor inputs on small scale farming operations.

Additionally, empirical evidence has shown that returns to scale in Third World agriculture have generally been constant or decreasing (Berry and Cline 1979; Ellis 1988). The implementation of mechanization programs on a comprehensive basis is inefficient in labor-abundant and capital scarce countries. Besides, resource utilization between large and small holders also brings into light the former's extensive and underproductive land use and the latter's intensive land use in the form of both commercial and food production.

Mechanization and biological packages in populated areas would only lead to massive under—and unemployment of labor, underutilization of land, and a high degree of social differentiation between the owners and the workers. This is the gap that intensive agriculture must fill, owing to its redistributive risk-sharing mechanisms. Leveling mechanisms, though warped in historical and ecological forces, in the limited good environment of smallholders, combine a continuum of shared tenancy, private property, acknowledgment of certain residual use-rights of community members on private lands, and borrowing from the commons: gleaning, picking fruit, pasture, and gathering firewood.

Similarly, because of new colonial imposed security in the plains the Kofyar of West Africa migrated from their hilltop intensively cultivated plots to lower elevation
frontier lands where they practiced swidden agriculture despite the fact that they had knowledge of intercropping, leveling, and manuring. In addition to the use of modern inputs, the 'old' intensive techniques re-emerged on frontier lands once they were filled up and population increased (Netting 1968; 1993). Although Boserup's model of land use types and population correlations has provided plenty of useful arguments about cultural adaptation and innovation, it still has to deal with the question of whether the marginal productivity of labor and periodicity in agriculture indicate progress or involution in the processes of agricultural change (Park 1992; Richards 1985).

The Ecosystem Approach

This approach views intensive agriculture as a type of farming systems and investigates the ecological relationships involved in the logic of it. The ecosystem approach is based on the notion of modeling the interrelationships between atmospheric variables, plants, soils, and human and animal labor. Key variables include measurements of energy inputs to trace energy flows within the system, and to measure output in terms of biomass, or the total harvested production. Earlier work on modeling farming systems relied too much on biological variables. Recently, however, attempts have been made to integrate historical and social variables into the ecosystem models (Geertz 1963; Moran 1990; Rappaport 1968).

While agreeing that land use change is somehow related to population pressure, Geertz contends that these transformations are involutionary, and do not constitute transitions to a different system of farming. Geertz demonstrates how the Dutch policies
of economic exploitation in Java conspired to bring about and to perpetuate the relationship between population pressure on scarce land and intensive land use based on higher labor inputs with declining marginal productivity. These external forces, played on the circumscribed and small-sized sawah fields production and led he insists to the emergence of a model of agricultural involution. Because of population density, averaging 480/km², the Javanese peasantry supported high population densities through the use of intercropping of wet rice on irrigated sawah fields, and maintained stable yields by the mobilization of labor intensive techniques of irrigation and land management.

For some neo-Marxist scholars, however, intensive farming reflects the desperate struggle of the marginalized peasantry to scratch a subsistence and to transfer the surplus to exploiting classes from drudgery-producing patches of land (Patnaik 1979:406). Because of the nature of the Green Revolution and the social structure into which it was introduced skewed the distribution of the benefits in favor of those with access to greater resource endowments and flexible economic muscle power, it resulted in highly mechanized concentration of land by the very few in the midst of huge armies of landless labor.

In support of the inconclusiveness of these debates, I argue that differential factor prices facing different farm sizes are not the only determinants of factor input intensity. More essential is the amalgamation of property rights and tenurial circumstances that condition the resource entitlement and market participation by various size holdings.
Particular property entitlement influences the bargaining power of the farmer in the market for labor, land, credit, and entrepreneurship (i.e. management skills). Historical factors writ large in the environment, combined with current degrees of exposure to the market and the qualities of those market forces, convincingly shape production strategies, which in turn have a bearing on future resource endowments.

The significance of the above arguments is that if cross-cultural studies of intensive agriculture have broadened the testing and application of the relationship between population pressure and intensification of agricultural production, then it is clear the extent to which small-scale farmers in the Ziz Valley intensify land use must be tied to specific ethnic and economic conjunctures. The Ziz Valley provides a multiethnic setting whose inhabitants practice intensive irrigated agriculture. I want to show below how different ethnic groups intensify land use and how ethnicity and recent changes in land accumulation by the Haratine affect the direction of agricultural change in the valley.

**Agricultural Intensification in the Ziz Valley**

The preceding chapters of the Ziz agrarian society, its political ecology, its land tenure system, its labor organization, and its knowledge and technology, have been heavy on the description of its behavior but light on comprehensive empirical evidence. Such a method lends itself to an empirical analysis of the relationship between ethnicity and agricultural intensification that is the driving hypothesis of this dissertation.

Although the prevailing body of literature on agricultural change privileges variables
such as population dynamics and a host of socio-economic indicators to explain this change under certain conditions, it does not examine the impact of ethnicity and social mobility on the movements of farming systems in the direction of hyper-intensification and extensification of agriculture. I am framing a theory that explains agricultural change in an ethnically stratified environment, and therefore I am broadening the implications of the relationship between population pressure and intensification for social and economic development in rural Morocco.

As the review of literature shows, small-scale farmers are not just food producers with fragmented and small farms. They achieve higher returns per unit of land and time than those produced by extensive systems of land use, such as cattle ranching, monocropping on large industrial farms, or swidden farming (Berry and Cline 1979; Boserup 1965; Netting 1968).

As the previous chapters demonstrated, the peoples of the Ziz Valley compose an ethnically-stratified society (of rank). The Murabitin and Shurfa Arabs are alleged descendants of the Prophet Mohamed or of revered saints. These families are entitled to certain privileges and immunities. Berber status derives from their historical military dominance and persistent political power. The Haratine are allocated inferior status and are typically responsible for menial labor. Since they did not own land in the past, they worked as sharecroppers for Arabs and Berbers.

Historically for the Berbers, land tenure was the founding pillar of law and tradition. Land and tree tenure was virtually the decisive vehicle through which the
Berber social organization expressed itself. Exclusion of outsiders was the chief operational element of the Berber's construct of property, and the perpetuation of the patrimony of the community was guarded by the keepers of customary law. No one other than Berbers and the holy Arab lineages could acquire land in Berber land, in particular the Haratine.

Once the French "pacified" Southern Morocco and established themselves in the 1920s and the 1930s, the Haratine slowly rejected the old ties of traditional society and welcomed the opportunity to migrate. Because almost all the Haratine were landless, a large number of them migrated in search of seasonal and annual work, first in French Algeria and the interior of Morocco, and later in Europe. The integration of the Haratine into the colonial system have had radical implications on the transformation of traditional relations between them and the land owning Berbers and Arabs. The most important of these, the social mobility of the Haratine, is a regional, oasis phenomenon. The second is the conversion of migration remittances by the Haratine to acquire land and to intensify land production. The third, ethnic tensions, arise in reaction to the Haratine's accumulation of land, also a widespread phenomenon in the southern oases of Morocco. All these changes have come together to weave a different social and economic organization of the means of production in the valley radically different from that of the past as discussed in Chapter III.

Although the assessment of agricultural change can be perceived from many angles and measured in many ways, I employ the intensification index and production of
crops per unit of land to examine local patterns of intensifications within the surveyed sample on an inter-and intra-ethnic basis, and to generate data for comparisons with other areas when possible.

Land use in the valley is based on the combination of the three-story farming system, a classic feature of the arid Moroccan oasis ecosystem. The third and second floors form the palm date, olives and fruit trees cover. Because of intensive irrigation these two floors create a micro-climate below conducive to the practice of perennial crops which form the first floor’s vegetation cover. The cropping intensity or frequency for the agricultural year 1993-1994 is presented in Table 6.1.

The index of intensification or cropping index, a proportion of the area under cultivation in relation to the total land cultivated plus fallow is 80.40 percent for the entire farming sample. The same index varies between ethnic groups and appears to be higher among the Haratine. This fact, despite varying soils and similarity of tools, though similar to that of the Berbers and much higher than of the Arabs, is perhaps due to the Haratine’s tendency to get more out of owned and sharecropped parcels. In addition, given the small size of these parcels, farmers are obliged to work their land intensively and to make up for land shortage through the practice of higher cropping frequency and a diverse tenancy gamut.

Because of different soils and mixed cropping strategies, farmer’s preferences for labor intensive or extensive farming and availability of reliable household labor, the
Table 6.1 Area in Hectares and Intensification Index by Ethnic Group

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>N</th>
<th>Total Area and Fallow</th>
<th>Cultivated Area</th>
<th>Intensif. Index (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabs</td>
<td>14</td>
<td>26.75</td>
<td>18.90</td>
<td>70.60</td>
</tr>
<tr>
<td>Berbers</td>
<td>23</td>
<td>57.75</td>
<td>46.13</td>
<td>79.60</td>
</tr>
<tr>
<td>Haratine</td>
<td>24</td>
<td>46.60</td>
<td>37.58</td>
<td>80.64</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>128.13</td>
<td>102.99</td>
<td>80.40</td>
</tr>
</tbody>
</table>

relation between population densities and the intensity of land use can be measured in more ways than just net productivity per unit of area and time. Boserup (1981) shows the existence of this relationship in a comparative study of cropping intensity across 56 modern countries. Cropping frequency above 80 percent, she states, indicates the cultivation of one crop or several crops per year on the same amount of land. Boserup contends that regardless of technological level, these associations prevail in countries with population densities above 64/km² (Boserup 1981:13-20). The Ziz Valley, therefore, appears to conform to these cross-cultural findings seen in correlations between population densities (range, 240-400/km²) and land use—smallholders get more out of the same amount of land (Netting 1993:263-265).

Ethnic Cropping Systems

Mixed and rotation cropping is widely practiced by the Ziz farmers, and its frequency varies from one ethnic group to another. Mixed cropping refers to the planting of different crops in the same plot during the same season, while rotation practices denote the succession of harvested crops by the planting of other crops during the same agricultural calendar. Rotational and mixed cropping differ from sole cropping or the planting of one crop per parcel per season, and monoculture based on the planting of one crop year after year (Richards 1985:63-64).

In terms of crop rotations, the analysis of the surveyed sample indicates the dominance of three main cropping systems which are influenced by social and economic factors and vary across ethnic lines: the biennial, the forage, the vegetable, and the
extensive system of tending trees. Because of crop rotations and the fact that farmers insist that one field may have two crops and trees, I use primary and secondary crops for analytical reasons, although all crops are equal in the eye of the farmer.\textsuperscript{13} As Figure 6.1 shows, of the 767 surveyed parcels, 34.5 percent of the biennial system is planted with cereals, in particular wheat, maize, and a negligible percentage of barley. This system is based on the planting of fall cereals in rotation with a leguminous crop, such as fava beans, in most cases. It is very rare for farmers to rotate Fall cereals with another cereal. In fact, only three farmers displayed a barley/wheat rotation. As a rule of farming, fava beans rotation usually precedes cereal cultivation. For farmers, parcels which had been grown in fava beans are believed to boost the fertility of soil and the same fields do not require as much work as in soil preparation. Given the importance of household consumption of cereal production, however, a small percentage of parcels is devoted to wheat on wheat successions. This rotation pattern, although it is practiced by seven households, has a weak proportion since it demands a large pool of household labor.

Alfalfa or the forage system occupies the second place in the overall farming system of the surveyed households. It represents around 28.2 percent of the sown area. Alfalfa usually succeeds cereals. Indeed, farmers agree that alfalfa trades places with cereal culture every five years. It is widely believed that soil preparation of wheat

\textsuperscript{13} Primary crops refer to what the farmer considers as the most important crop of his field despite that the field may have more than one crop and trees. Trees and other crops are labelled secondary.
provides conducive soil conditions for the planting of alfalfa. In almost all cases, farmers spread green manure and apply chemical fertilizer and light tilling of soil before they sow alfalfa.

The third system is devoted to the cultivation of vegetables or gardening. This cultivation occupies almost 7 percent of the entire sample of parcels. Gardening activities are usually located in near proximity to the household's residence, but in case it is far from the house, a member of the household is assigned to keep an eye on the land to deter the stealing hands of fellow villagers. Gardening seems to be highly intensive, and farmers plant vegetables on other kinds of vegetables all year long and in accordance to the dictates of seasonality. Gardening patterns of crop succession are usually replaced by cereals. The average number of years between two cereals is variable, but most farmers agree on the range between four to six years. The fourth system refers to the tending of palm dates, olive trees, and various fruit trees. Within the sample, the secondary crops are dominated by olive and palm date trees. They each represent 46.5 percent and 36.1 percent of the cultivated crops, respectively. Other fruit trees such as pomegranates (3.3 percent) and apples (0.3 percent) are on the rise, in particular the recent introduction of apple farming in the Upper Ziz Valley (see Figure 6.2).

In terms of ethnic influence on land use strategies, the surveyed sample reveals varied patterns of land use variation between groups and this variation becomes even pronounced when parcel data is collapsed into land size classes. The analysis of the
Figure 6.1 Primary Crops
All Households, 1993-1994

- pomegranates (0.10%)
- garden (5.60%)
- apples (0.30%)
- fallow (22.00%)
- olives (1.00%)
- beans (8.30%)
- barley (0.40%)
- maize (3.30%)
- alfalfa (28.20%)
- wheat (30.80%)

Figure 6.2 Secondary Crops
All Households, 1993-1994

- pomegranates (3.80%)
- garden (0.70%)
- olives (46.45%)
- maize (11.49%)
- alfalfa (0.70%)
- beans (0.10%)
- wheat (0.70%)
- dates (36.06%)

sown area exhibits different cropping strategies between and among the three ethnic groups. For the Arabs, as shown in Figure 6.3 below, primary crops are as follows: 30.40 percent under wheat, alfalfa and fallow occupy 27.5 percent each, and the rest is under vegetables, legumes and other fruit trees. While the primary cultivation is driven by labor intensive crops the secondary crops are mainly dominated by olives and dates, representing 51.4 percent and 27.5 percent each, respectively (see Figure 6.4).

For the Berbers, the farming strategies of the primary crops indicate a slightly different pattern of intensification and crop rotations. As Figure 6.5 reveals, wheat and alfalfa comprise 22.7 percent and 31.10 percent each, while fallow stands at 21.7 percent of the sown area. Although the primary crops are driven by household consumption and livestock requirements, the secondary crops overemphasize the importance of olives and date palm trees. Olive trees and date palms represent 50.2 percent and 36.8 percent of the total cultivated area of the secondary crops, while the rest of it is devoted to “thin” agriculture of gardening and fruit trees tending (see Figures 6.5 and 6.6).

For the Haratine, farming choices show a higher tendency towards wheat, but not towards alfalfa, and the fallow percentage of the cultivated parcels is slightly lower than that of the Berbers and much lower than that of the Arabs. As represented in Figure 6.7 below, the cultivated area with primary crops fall into the following order: 37.4 percent in wheat, 26.1 percent under alfalfa, 20.1 percent in fallow, while the rest of the area is cultivated with vegetables, legumes, and various fruit trees. Whereas the
Figure 6.3 Primary Crops
Arab Farmers, 1993-1994

- garden (4.23%)
- apples (0.10%)
- fallow (27.67%)
- olives (0.70%)
- beans (7.75%)
- barley (0.70%)
- maize (0.70%)
- alfalfa (27.67%)
- wheat (30.48%)

Figure 6.4 Secondary Crops  
Arab Farmers, 1993-1994

Figure 6.5 Primary Crops
Berber Farmers, 1993-1994

pomegranates (7.53%)
apples (0.40%)
fallow (21.51%)
olives (1.09%)
beans (8.62%)
wheat (22.50%)
maize (6.84%)
alfalfa (31.52%)

Figure 6.6 Secondary Crops
Berber Farmers, 1993-1994

- pomegranates (4.00%)
- wheat (0.40%)
- maize (6.49%)
- alfalfa (1.10%)
- garden (1.10%)
- dates (36.76%)
- olives (50.15%)

Source:
primary crops are based on subsistence and fodder needs. The secondary crops are also geared towards the tending of olives, dates, and pomegranates, each representing 41.9 percent, 39.1 percent, and 3.4 percent, respectively (see Figure 6.8).

At the group level, the above figures underscore the various strategies or differences in degrees of emphasis in terms of choices farmers make about making a viable living on the edge of the Sahara Desert. In terms of the number of crops or mixed cropping combinations practiced, the number of crop species that a farmer might plant in a single agricultural year ranges between 25 and 35. Almost all parcels are dominated by a few main food and cash crops and trees of economic value: cereals, alfalfa, legumes, vegetables, olives, dates, apples, and pomegranates. Although crop successions are theoretically unlimited, they are subject to patterns of land tenure and labor arrangements and availability within and between households, as discussed in Chapter IV. The analysis of crop successions or rotations reveals the dominance of five cropping combinations in the surveyed parcels: wheat-maize-fava beans representing 17.60 percent, wheat-maize-wheat with 33.40 percent; fava beans-fallow-wheat with 7.0 percent, alfalfa-wheat-maize with 38.40 percent, and wheat-vegetables-alfalfa with 4.60 percent.

Although the above figures and description shed some lights on the qualitative aspects of the different strategies adopted by the three ethnic groups when it comes to cropping choices imposed on the land use system, these same figures, however, veil a great deal of variation at the intra-and inter-ethnic levels. These cropping choices
Figure 6.7 Primary Crops
Haratine Farmers, 1993-1994

pomegranates (0.30%)
garden (4.60%)
fallow (20.12%)
olives (1.10%)
beans (8.31%)
alfalfa (26.13%)
wheat (37.44%)
barley (0.60%)
maize (1.40%)

Figure 6.8 Secondary Crops
Haratine Farmers, 1993-1994

speak to variation in farming strategies and adaptation to patterns of land ownership and socio-economic variables. These variables are not only crucial for the comparative analysis of farming practices across and within the steps of each group's socio-economic ladder, but also might suggest the intricate and complex associations between social stratification and the direction of agricultural intensification or disintensification.

**Ethnic Farming Strategies**

When land size classes are nested within farming strategies and analyzed along inter- and intra-ethnic levels, a different, yet similar pattern among similar land size classes, emerges. The land size class classification is based on the socio-economic labels farmers use to refer to each other. These labels are employed here to fit with the land sizes upon consultation with farmers. As a result, the poor farmers own or manage an amount of land less than 0.05 ha, the middle farmers have and manage a stock of land greater than 0.05 ha and less than 0.5 ha, and the rich own and manage more than 0.5 ha. The average parcel size of the entire sample is 0.17 ha (see Tables 6.2, 6.3, and 6.4).

As reported in Table 6.2 below, Arab farmers occupying different land size classes exhibit different farming practices. The poor Arab farmers emphasize the cropping of alfalfa with 28.60 percent of their sown area and followed by cereals, in particular wheat, with a 23.20 percent. A small percentage of land is devoted to fava beans and vegetables with 1.80 percent and 7.10 percent, respectively. The percentage of fallow is higher than those of the middle and rich farmers of the ethnic group, 37.50
percent, 23.60 percent, and 7.10 percent, respectively. In terms of fruit trees, dates, olives, and pomegranates represent 41.80 percent, 35.50 percent, and 7.10 percent, respectively. Similar to the middle class, they do not grow apples.

While the poor farmers tend to rely on a mixed strategy of farming in favor of trees and cereals and alfalfa, the middle and rich classes show higher concentration of land under cereals and forage, in particular the rich who focus most of their land use upon the growth of wheat, alfalfa, and fruit trees. Though the middle farmers are similar in many ways to the rich ones, their strategies of land or soil occupation seem to be somewhat evenly distributed between primary and secondary crops. Unlike the high fallow percentage of the middle farmers, the rich have a very low percentage of fallow, 7.10 percent versus the 23.60 percent rate of the middle stratum. As for fruit trees, one also sees a somewhat balanced distribution of olive and date trees, which stands in contrast to that of the rich who focus mainly on olives and the planting of the recent novelty of apples (see Table 6.2).

Table 6.3 indicates how Berber farmers go about their farming. Although the poor Berbers do not grow barley, they are similar to the poor Arabs in terms of crops distribution across their parcels. Like the poor Arabs with their overemphasis on forage, legumes, fallow, and vegetables, they slightly prefer the secondary crops of olives, dates, and pomegranates.

While the middle and rich Berbers have almost similar percentages of land
Table 6.2 Arab Land Size Classes in Hectares and Farming Strategies in Percentages for Primary and Secondary Crops

<table>
<thead>
<tr>
<th>Crops</th>
<th>Poor</th>
<th>Middle</th>
<th>Rich</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>.0009—.05</td>
<td>.05—.50</td>
<td>&gt;.50</td>
</tr>
<tr>
<td>Wheat</td>
<td>23.20</td>
<td>34.70</td>
<td>35.70</td>
</tr>
<tr>
<td>Barley</td>
<td>1.80</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Maize</td>
<td>00</td>
<td>1.40</td>
<td>00</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>28.60</td>
<td>25.00</td>
<td>35.70</td>
</tr>
<tr>
<td>Fava beans</td>
<td>1.80</td>
<td>12.50</td>
<td>7.10</td>
</tr>
<tr>
<td>Fallow</td>
<td>37.5</td>
<td>23.6</td>
<td>7.1</td>
</tr>
<tr>
<td>Garden</td>
<td>7.10</td>
<td>2.80</td>
<td>00</td>
</tr>
<tr>
<td>Dates</td>
<td>41.80</td>
<td>20.80</td>
<td>7.10</td>
</tr>
<tr>
<td>Olives</td>
<td>35.50</td>
<td>62.50</td>
<td>57.10</td>
</tr>
<tr>
<td>Pomegranates</td>
<td>7.10</td>
<td>2.80</td>
<td>57.10</td>
</tr>
<tr>
<td>Apples</td>
<td>00</td>
<td>00</td>
<td>7.10</td>
</tr>
</tbody>
</table>

dedicated to the cultivation of alfalfa, the rich have a higher proportion of their land tied into wheat and a lower percentage of fallow, legumes, and vegetables production. Despite their similar biases toward tree cultivation, the middle have 30.10 percent in dates, 57.70 percent in olives, and 4.10 percent in pomegranates, while the rich have 22.20 percent in dates, 70.40 percent in olives, and 3.70 percent in apples (see Table 6.3).

Like their poor Arab and Berber farmer fellows, poor Haratine farmers tend to echo similar management practices of land use. Although they have a lower fallow and somewhat similar gardening rate in comparison to the other two groups on their land size class, they have a much higher proportion of their land in wheat, with a percentage of 34.20 versus those of the Arabs and Berbers which stand at 23.20 percent and 18.10 percent, respectively.

The same pattern is true for the middle as well as the rich who put a greater portion of their sown area under wheat, with a 55.00 percent versus 35.70 percent and 48.10 percent for the Arabs and Berbers. The poor Haratine also exhibit a nice distribution of a variety of crops within their land size class, and the only crops they do not cultivate are barley and apples.

While they have a lower alfalfa percentage, 25.70 percent, than that of the poor Arabs and Berbers, their legume proportion of 5.90 percent is a bit higher than that of the Arabs and lower than that of the Berbers, but it is almost half that of their middle farmer brothers and about one quarter that of their rich farmer brothers. They show a balanced distribution of tree crops, 50.80 percent of it in dates, 27.30 in olives, and
Table 6.3 Berber Land Size Classes in Hectares and Farming Strategies in Percentages for Primary and Secondary Crops

<table>
<thead>
<tr>
<th>Crops</th>
<th>Poor</th>
<th>Middle</th>
<th>Rich</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.0009-.05</td>
<td>.05-.50</td>
<td>&gt;.50</td>
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<tr>
<td>Wheat</td>
<td>18.10</td>
<td>22.00</td>
<td>48.10</td>
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<tr>
<td>Barley</td>
<td>00</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Maize</td>
<td>7.90</td>
<td>6.50</td>
<td>3.7</td>
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<tr>
<td>Alfalfa</td>
<td>29.90</td>
<td>32.50</td>
<td>29.60</td>
</tr>
<tr>
<td>Fava beans</td>
<td>6.30</td>
<td>12.20</td>
<td>3.70</td>
</tr>
<tr>
<td>Fallow</td>
<td>29.10</td>
<td>17.10</td>
<td>7.40</td>
</tr>
<tr>
<td>Garden</td>
<td>7.10</td>
<td>8.90</td>
<td>3.70</td>
</tr>
<tr>
<td>Dates</td>
<td>46.50</td>
<td>30.10</td>
<td>22.20</td>
</tr>
<tr>
<td>Olives</td>
<td>38.60</td>
<td>57.70</td>
<td>70.4</td>
</tr>
<tr>
<td>Pomegranates</td>
<td>4.70</td>
<td>4.10</td>
<td>00</td>
</tr>
<tr>
<td>Apples</td>
<td>00</td>
<td>00</td>
<td>3.70</td>
</tr>
</tbody>
</table>

3.20 percent in pomegranates. These figures stand in comparison with 25.40 percent and 20.40 percent in dates, 58.70 percent and 60.00 percent in olives, and 3.60 percent and 5.00 percent in pomegranates for the middle and rich strata, respectively. Despite the fact that no Haratine farmers cultivate apples, the rich Haratine like the Arabs, they do not have any land under vegetable production. Furthermore, unlike all the others they have zero percentage of fallow (see Table 6.4).

Despite the similar cropping complexes that farmers in the Ziz Valley cultivate, the above tables attest to the varied and entangled land management practices mobilized within and between the three ethnic groups. What is interesting is the fact that the poor stratum within the three ethnic groups tend to favor a balanced and diverse basket of crops, while the middle and the rich strata, in general, prefer fruit trees, forage, and cereals. The first two are in particular preferred by the Arabs and Berbers since they constitute a strong means of cash in the local and regional markets: sales of dates, olives, apples, and livestock or its fodder compose the corner stone of the farmer’s cash, as discussed in Chapter IV. This particular shift in terms of cultivation strategies can not only be interpreted in terms of the number of mouths to be fed, or the age structure of Berber and Arab households, but it is also rooted in the recent antipathy towards the rise of the Haratine from the status of sharecroppers to one in which they are “fathers of things” or landowners. These issues are discussed in the next chapter— the impact of the social mobility of the Haratine on the Ziz Valley communities.

Furthermore, what is striking is that one expects some kind of association
Table 6.4  Haratine Land Size Classes in Hectares and Farming Strategies in Percentages for Primary and Secondary Crops

<table>
<thead>
<tr>
<th>Crops</th>
<th>Poor</th>
<th>Middle</th>
<th>Rich</th>
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<tbody>
<tr>
<td></td>
<td>.0009-.05</td>
<td>.05-.50</td>
<td>&gt;.50</td>
</tr>
<tr>
<td>Wheat</td>
<td>34.20</td>
<td>39.90</td>
<td>55.00</td>
</tr>
<tr>
<td>Barley</td>
<td>00</td>
<td>1.40</td>
<td>00</td>
</tr>
<tr>
<td>Maize</td>
<td>1.10</td>
<td>2.20</td>
<td>00</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>25.70</td>
<td>26.10</td>
<td>25.00</td>
</tr>
<tr>
<td>Fava beans</td>
<td>5.90</td>
<td>10.10</td>
<td>20.00</td>
</tr>
<tr>
<td>Fallow</td>
<td>25.10</td>
<td>16.70</td>
<td>00</td>
</tr>
<tr>
<td>Garden</td>
<td>6.40</td>
<td>2.90</td>
<td>00</td>
</tr>
<tr>
<td>Dates</td>
<td>50.80</td>
<td>25.40</td>
<td>20.40</td>
</tr>
<tr>
<td>Olives</td>
<td>27.30</td>
<td>58.70</td>
<td>60.00</td>
</tr>
<tr>
<td>Pomegranates</td>
<td>3.20</td>
<td>3.60</td>
<td>5.00</td>
</tr>
<tr>
<td>Apples</td>
<td>00</td>
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</table>

between the number of mouths to feed and the number of average hectares worked, but within the sample higher consumer/producer ratios are not translated into subsistence crop intensification. While Arabs appear to have the highest consumer/producer ratio and consumer/producer ratio per average cultivated hectare, 2.68 and 1.66 each, their farming strategies overemphasizes forage and fruit tree productions while cereals are assigned a third place. Next come the Haratine who intensify cereal production the most, followed by fruit trees. Fodder production appears to reflect the impact of a somewhat high consumer/producer ratio and consumer/ratio per average worked hectare on the subsistence patterns of their farming, 1.82 and 1.10, respectively. Finally, similar to Arabs in terms of patterns of farming intensity, Berbers have the lowest consumer/producer ratio as well as the lowest consumer/producer ratio per average hectare worked, with 1.58 and 0.95. As is shown in Table 6.3, these ratios reflect the Berber biases toward extensive strategies of arboriculture and forage production.

These ratios, when conceptualized in farmer’s accounts and choices of farming practices, reflect the real and complex situation of inter-ethnic variation when it comes to farming decision-making. There is an ongoing saying repeated over and over by Arabs and Berbers “ghaltu fug Dahru, “its produce is on its back.” This means that trees, unlike cereals and vegetables, require the least amount of labor. When pressed as to why they refrain from intensifying land in terms of wheat and vegetable gardening, they respond that their trees and alfalfa converted into livestock cash can provide them with wheat and vegetables. These cash crops, although labor extensive, are justified on
the basis that Haratine labor is not reliable, and when hired “they take all their time and
all they do is work very short hours and ask for more money than they worked,” many
Arab and Berber farmers complained again and again. To avoid all these “heart aches”
and various forms of sabotage (their term), one is either to rely on tree produce and
alfalfa, and “a few cereals for pride’s sake and some straw to supplement the feed of
animals,” an old experienced Arab farmer said. It is clear, however, that these
strategies, in particular the forage and tree system, are woven into the Arab and Berber
strategies to evict the role of the Haratine from their system of production.

For the Haratine, despite the tendencies of Arab and Berber farmers who occupy
the middle and rich levels, perhaps the predominance of sharecropping arrangements
coupled with a demanding consumer/producer per cultivated hectare might suggest the
association between social stratification and much of the subsistence orientation that cuts
through almost all Haratine socio-economic levels. Different from the middle and rich
Arabs and Berbers, the rich Haratine, and to some extent their middle farmer brothers,
stress cereal production, tree crops, and alfalfa, and this order seems to underplay the
role of gardening. The major difference, however, between the rich stratum among the
three ethnic groups is the recent innovation of apple cultivation among the Arabs and the
Berbers. For the latter groups, because of access to land and institutional support by
the Regional Office for Agricultural Development and the Agricultural Credit Bank,
apple growing represents a profit-bearing product in the local and regional markets, and
has moved to dominate their perception of future plans for agriculture in the area,
especially in the upper parts of the Ziz River.

The account of Youssef, a Berber farmer in his early forties, captures the situation of the poor farmer along the valley and, to some extent, that of the middle and the rich. For our farmer, agriculture could survive only if it is part and parcel with livestock, without it oasis farming is sure to be in trouble. Another key ingredient to successful farming is the marketing of what the farmer's hands produce. Marketing, besides its financial aspects, is what leads to innovation and introduction of new crops and vegetables. Selling and "looking around" in the market, he insists, should give the farmer a notion of how to answer the market puzzles, or to fill what is needed by the shoppers. "It is risky, and risk is what makes it interesting", he said with a shy and controlled laugh. The other major obstacle that faces the farmers of the Amelkis village, according to Youssef, is the lack of the means of regular transportation and a paved road. This is a critical problem during the marketing period of vegetables. Since the village is off the major highway, Youssef like his neighbor farmers, before the sunrise they have to climb the surrounding mountain and walk to the paved road with a donkey packed with produce and hitchhike a ride to the market place. While walking and holding the tomato boxes on the back of the donkey, they pray to God that the donkey will not stumble and spoil all their sweat and their families provision for that week.

Furthermore, Youssef contends that intensive agriculture in the valley, regardless whether one is poor, "passable", or rich, faces three major issues: narrowness of the valley, resulting in the limited amount of land that could be exploited; shade and low
exposure to solar radiation caused by the trees of economic value; and theft due to the skewed distribution of land among the people of the valley. He suggests that the answer to the narrowness of the valley is that the government ought to deliver permits to villagers to farm the desert plateau above the valley, and “the government should show its generosity by providing a rich package of credit and technology.” The desert is the last refuge for preserving the palm grove that has been ravaged by the *al-bayud* disease. “New shoots of high quality dates ought to be planted in a “saint” or healthy soil in the desert plateau for us and for the coming generations. The valley bottoms are too crowded and the palm grove is dying, and their cure is in the desert,” so he said.

**Does Ethnicity Matter in the Production Process?**

In this complex setting, I have made the attempt to test the hypothesis that the Haratine—given their intimate ecological knowledge as the former sharecropping group of the valley and recent acquisition of land—are making the land more productive than the Arabs and Berbers, the declining dominant land-owning groups. In other words, the formulation of my hypothesis assumes that the Haratine’s knowledge of land constitutes a unique cultural capital when empowered by access to land and a certain degree of bargaining over labor arrangements lead to higher productivity of their land. Because all farmers in the surveyed sample grow wheat, and their reporting on its production inputs and outputs is reliable, I use the wheat crop as my unit of analysis to test the above hypothesis.

To correct for parcel size, soil quality, and inputs variation among the farmers, I
use the method of the weighted number of average production per average hectare for each household. This method allows me then to account for the independent variables of family and hired labor, fertilizer, manure, the consumer/producer ratio and the system of production, and their association with the dependent yield of wheat per average weighted hectare across the ethnic lines of the sample. Then, I compared the average production of the weighted average hectare for each group. I used the difference of means test to explore whether there is a statistical difference between the mean yields of wheat production between ethnic groups (Bernard 1988:369; Howell 1997:197-202).

The results show that the average wheat yield per average hectare is 10.80 quintals for the Arabs, 19.53 quintals for the Berbers, and 15.17 quintals for the Haratine. The three standard deviations are 6.47, 41.00, and 20.79, respectively. It appears from the sample that the Berbers are getting more wheat per average hectare than the Arabs and the Haratine. A robust $t$ test, comparing and pooling the heterogeneous variances of the three groups, was statistically significant ($t(54)=4.86$, $p<.05$). $T$ tests of the Berbers and the Haratine and the Berbers and the Arabs were also statistically significant, ($t(46)=1.57$, $p<.05$) and ($t(34)=2.98$, $p<.05$), respectively. The $t$ test comparing the Haratine and the Arabs was statistically insignificant ($t(28)=1.53$, $p<.05$).

These results demonstrate that Berbers get more wheat per average hectare than the Arabs or the Haratine. The significant $t$-test scores mean that we cannot accept the hypothesis that the Haratine get the most wheat returns per average hectare. This is not
to say that the Haratine and the Arabs are not as hard working as the Berbers because they did not perform as well on wheat production per average hectare. Because input data (amount of seeds, hired and family labor, and amount of green manure and fertilizer) per average hectare reveal small differences in terms of farming the land, it seems that ethnicity or social stratification is a relevant variable in how the Ziz farmers conduct their agricultural practices.

The analysis of the wheat inputs per average hectare in the surveyed sample reveals that in each hectare under wheat production, an average of 71.75 kgs of seeds were sown, 40.60 days of wage labor and 65.75 days of family labor were mobilized, 1,880.70 kgs of manure and 447.50 kgs of fertilizer were applied, and about 6,000 m³ of water were supplied in five to six irrigations at no charge. A farmer’s average cost for all these inputs totaled 6,484.30 dirhams, or U.S. $776.56 in 1995 at 8.35 dirhams per dollar. In that same agricultural year, yields for wheat averaged 1,630.85 kgs per hectare representing a market value of 6,756.15 didrham, including the value of produced straw. Thus, a crop of wheat potentially provided an average net return of between 6,756.12 and 10,410.28 dirhams per hectare, or a ratio of efficiency of 1.08 dirhams for every dirham invested per average hectare (see Figure 6.9).

Measured in terms of agricultural costs and returns per average hectare, the surveyed sample show that the Arab’s crop yield represents an efficiency ratio of 0.99:1, that of the Haratine’s represent a relatively higher return of 1.15:1, and that of the Khomas or sharecropper a higher return of 1.65, while that of the Berber’s exhibits the
highest efficiency ratio of 1.85:1 (see Figure 6.10).

Perhaps these findings that confirm the higher performance of the Berbers over the Haratine and the Arabs per unit of land may well be due to land quality, land location and distance, and the system of making land productive. What is not entirely clear from these findings, but ethnographically valid, is that most of the land the Haratine have acquired and still manage under the one-half and rent systems is usually on average more shaded and more distant from the farmer's house. Second, the other major handicap that could explain the low productivity of the Haratine vis-a-vis the Berbers may reside in the fact that the Haratine fields may have to compete for labor and attention in terms of weeding and timely irrigation with the Berber fields that the same Haratine tenants sharecrop. In fact, 29.70 percent of the Berber wheat parcels and 39.40 percent of Arab wheat fields are sharecropped by the Haratine, and only 8.40 percent of the Haratine wheat land is sharecropped to other Haratine.

Accordingly, the analysis of the system of production of wheat reveals an unexpected and interesting finding that may have something to do with the impact of direct and indirect management on the productivity of the average hectare. Arab owned
Figure 6.9 Wheat Inputs by Groups
Per Average Hectare

or self-managed parcels give a yield of 9.25 quintals per hectare while those sharecropped to the Haratine by Arabs have a much higher yield, reaching almost 11.36 quintals. For parcels directly managed by Berber owners the yield is 22.82 quintals versus the yield of sharecropped ones by Haratine whose yield stands at 13.95 quintals per hectare. The most striking fact, however, is that Haratine-owned fields show a very low production of 11.19 quintals in radical contrast to intra-Haratine sharecropped with an output of 41.73 quintals. Is one to conclude that the Haratine sharecropper works harder on the field of his kinsmen? While Haratine-owned and -managed fields may compete with labor and time allocated to other activities, Haratine fields sharecropped by Haratine appear to have the highest yield per average hectare. This fact may be due to the collective labor exchange between sharecroppers or the practice of *twiza*. The institution of *twiza* provides mutual aid and assistance for sharecroppers unable to complete certain agricultural tasks within a reasonable amount of time. In this manner, a sharecropper is assured of labor to work his land and harvest its produce, to make up for labor shortage within his household. Labor is exchanged on a field by field basis. The *twiza* labor is contributed for the duration it takes to complete a certain agricultural task, no matter how small or large the fields may be. The answer is not definite, and for a comprehensive understanding of these issues and the debate on sabotage alluded to earlier mandates further and more extensive research.

Furthermore, because farmers in the valley devise diverse farming strategies in accordance to land and labor availability, the figures above might also conceal to a
Figure 6.10 Wheat Input and Output
Efficiency Ratio per Average Hectare

large extent the biases of farming choices in terms of what to prefer or to sacrifice on a seasonal basis. The analysis of livestock days and tree tenure reflects this diversity. The figures show that Arabs invested the highest number of days in livestock feeding and management, while the Berbers and the Haratine spent 473.14 and 434.52 days, respectively. As for tree tenure, the Berbers appear to have the highest numbers of trees as well as the highest tree production per average hectare, 29.61 tons and 18.05 tons, respectively. While Haratine have the lowest number of trees and production per average hectare, the Arab tree tenure occupies a middle range between the Berbers and the Haratine, with 132.25 and 2.25 tons and 178 and 3.50 tons, respectively.

While Arabs seem to have low returns of wheat per average hectare, their tree management and production probably compensate for their low productive fields of cereals. However, there does not appear to be a similar pattern between the Haratine's medium productivity and tree crops. I assume that since the Haratine have the lowest livestock and tree management days of all groups that they might re-direct their labor to more intensive crops such as cereals. The only viable, but uncertain reason, for the Haratine's pattern of average lower productivity on their own land may be that many of the able-bodied men of the Haratine population practices seasonal migration between the valley and construction sites in the major urban cities of Morocco, including the town of Errachidia, the capital city of the Ziz Valley. However, Haratine owned fields and sharecropped by other Haratine show the highest yield per average hectare. This may be due to the practice of *twiza* between sharecroppers. It is perhaps because most of the
Haratine are involved in short period work migration that their fields may not get the same attention and management that other fields get.

In summary, while the literature on intensification discussed above is useful and explains some aspects of the relationship between intensification and population pressure—one leading to the Boserupian model of the impact of population on land use shift and intensification and the Geertzian model framework producing agricultural involution—these models, however, can not be examined strictly as structural or ecological causes and must be grounded in the interplay between ethnicity and the development of property rights. The Ziz farmers conform to the emerging worldwide pattern seen in the relationship between area cultivated and productivity: smallholders get more out of the same amount than large scale-farmers. In fact, when comparing the local yield of wheat with the national average, the productivity of the small and fragmented fields is higher than the regional norms—the average production of the most productive farmers of the surveyed sample show 19.55 quintals versus the national average of 17.60 quintals (ORMVAT 1991). This case also demonstrates that in intensive irrigated agriculture the complex edifice of ethnicity is directly related to land productivity, and that intimate knowledge of the land practices, access to land, and the level of external inputs are not the only critical, independent variables.

Despite the complexity of sorting out the issues surrounding the ethnic nature of making land more productive, what all this may mean is that the intensification debate must collapse and lower its macro-theoretical constructs to include the dynamic
agricultural space on which varied ethnic farming strategies are expressed, especially in ethnically stratified societies. These findings are suggestive of the role of ethnicity in the processes of agricultural intensification in the Ziz Valley. Furthermore, contrary to current theories which examine social and economic change in terms of agricultural modes and crop complexes, my findings demonstrate that the same regimes differ markedly in production and intensity between ethnic groups, and therefore provide empirical evidence that ethnicity is a key, albeit heretofore ignored, variable in land use change and population dynamics—at least in the southern oases of Morocco.

Does "Agriculture Eat Itself"?

The next question, besides the relationship between ethnicity and farming intensification, is to have an understanding for whether the Ziz farmers' productivity translates into self-sufficient farming undertakings. The economics of farming in the valley constitutes the farmer's daily struggles. Almost all farmers conceded that upon the calculations of agricultural costs and returns, they agreed that engaging in agriculture is a losing operation. They argued that monies were lost on "worthless labor" hands that did not produce enough to compensate for their wage. Farmers are very surprised and feel often cheated, when they see in the market place their produce fetching five times the price they got for it at the farm gate: but since they can not control the produce's price outside the farm, agriculture becomes a non-profit undertaking.

For other farmers, for example, upon the completion of a cost and benefit
analysis of wheat they found out that they had been spending more than what they obtained in terms of wheat production. They insist that they continue cultivating wheat for not wanting to crowd the market place and push cereal prices higher, and therefore establishing a precedent for dependency on the market and its middle men. They also emphasized the fact that it is shameful to buy wheat from the market, in particular when there is plenty of water land for its cultivation. The market’s wheat and produce in general, lack the divine power of God, and “no matter how much you buy it becomes little.” The effect of rabi, or the process in which a large quantity of produce shrinks in volume associated with the market, seems to motivate farmers to try to be self-sufficient. Although divine power or baraka cannot be quantified, farmers are in search of what they call al-qana’a or satisfaction. This satisfaction is achieved when so little production can feed so many people. This sort of satisfaction can be only found in their fields, and it is kept from interacting with contaminated or Haram forms of inputs such as interest bearing credit. This logic make farmers content with managing their very low profit margings.

While others give varied religious interpretations of the economics of farming, Hmida bases the underproductivity of his parcels on the fact that today’s youth [able-bodied men] is not interested in farming, and wage labor is not the solution to labor’s commitment to hard work that his brother and he used to practice. “We worked almost naked (meaning with a piece of cloth covering the private parts). Now, workers come with pants and shirts as if they were government officials to swing the pick.” He
laughs, chuckles, and says in a nostalgic tone: "today, you scold workers or your raise your voice on them and they will not show up for work the next day. We are at the mercy of hired labor and its short hours. Back in the old days, we worked the fields to a depth of our waists, real work unlike the tractor. These days, the tractor hardens some places and you need to hire more labor to level it. In the past, we did not have anything except our labor power. Agriculture here does not provide good returns, and what keeps it going and hides its deficit is the major economic contributions of trees of value and livestock."

Based on the weekly records of expenditure kept by five households during the agricultural year 1994-1995, I examine the proportion of household subsistence requirement covered by agricultural production and outside earning streams. Before presenting the findings of the production and consumption records of the farmers, and because Hmida appeared to be consistent in reporting the sources of his spending and sales habits, his records could be generalized to the whole sample. Hmida has 4.50 hectares of which 1.75 is under cultivation. He also has 112 olive trees, 320 date palms, and various fruit trees. He manages a fairly large household of sixteen members whose consumer/producer ratio is 2.85. He also manages a small store in the village, and he has a brother who works abroad and regularly sends money home. The main external items purchased include the whole range of normal household needs of groceries, clothing, school fees, and medical supplies, while the items his parcels provide cereals, vegetables, dairy products, fruits, olive oil and dates, and other residual
A detailed analysis of Hmida's records of cash flows to satisfy the subsistence demands of his household reveal that the percentage covered by the sales and consumption of agricultural production hovers around 87.70 percent. In general, this shows that most of the agricultural production remains traditional and very much oriented toward subsistence production. The agricultural revenue streams cover only 87.70 percent of the needs of the household, while the remaining 13 percent is covered by the revenue generated by the small shop and the migration receipts sent by Hmida's brother from France.

The analysis of the other four households indicates also that farming is mostly geared towards the satisfaction of household needs, but these needs hardly cover the total requirements of the household. These findings reveal that the role of agricultural revenue in the self-sufficiency of households is linked to the size of land under cultivation, the number of trees, and livestock ownership. The analysis of the five household records reveal that the percentage of agricultural revenue is very low in the poor land class size category, satisfying only around 65 percent of the subsistence demands of households, while the middle category tends to get around 74 percent of its total revenue from farming. The percentage, however, for the rich category seems to swing between 97 percent and 157 percent.

To sum up, as one of the rich farmers succinctly put it, “if one knows how to squeeze ‘milk’ from agriculture to respond to household subsistence requirements and to
subsidize commercial livestock, and one uses agricultural land as collateral for credit from the bank, farmers can lead a comfortable way of life under the shade of olives and date trees. " Not surprisingly, different farmers face different constraints, but the issues of underinvesting in agriculture as in intensive use of land is common to almost all farmers of the region. The choices of investing agricultural income generating activities into livestock and its profit surpluses into subsidizing rural and urban housing promises to rob subsistence agriculture of its entitlements to renewed investment. Eventually, these choices will lead to the impoverishment of the rural landscape and the total compromise of its semi-self-sufficiency to feed its working hands and consuming mouths.
CHAPTER VII

THE POLITICS OF ETHNICITY AND COMMUNITY IN THE ZIZ VALLEY

Introduction

The means of production in changing smallholder societies are anchored in a nexus of ethnic, historical, and ecological relations of production. These means of production, particularly land, labor, and capital are in themselves forms of capital and become commodities through their circulation in the shape of exchange and use values (Marx 1977). In this chapter, I intend to explore the utility of Bourdieu’s social topography in understanding the relationship between forms of capital and status change in the Ziz Valley of Southern Morocco. Specifically, I argue that the conversion of migration remittances from abroad and home into the purchase of irrigated land and trees of value has allowed the Haratine to appropriate what is essentially a Berber/Arab cultural capital of al-aS1 or a sense of rootedness and belonging (being anchored in land:al-aS1). I also show how land accumulation by the Haratine is a constant capital as well as a highly variable cultural capital that is reshaping the social relations of the valley’s communities.

In so doing, the Haratine strategies of investing in land have been successful in challenging the “ontological complexity” between structure and habitus. In fact, I contend that Bourdieu’s theoretical tool (habitus), when tested in a multi-ethnic playground, tends to lose its cutting edge and novelty. Habitus, in the Ziz Valley, is
changing hands and its "structured structures" are being restructured in the daily
competition over the appropriation of distinctive cultural and capital goods and services.
These daily struggles also involve nonviolent modes of resistance by the traditional
nobility of the Berbers and Arabs to contain its decline as well as to arrest the upward
mobility of the Haratine: resistance from above at its best indigenous form.

The chapter starts with a theoretical discussion of Marx's and Bourdieu's
formulas of capital formations followed by a historical and ethnographic narrative
situating the process of domination and change running through the past and present of
the valley's communities.

Some Theory: Les Bons Esprits of Bourdieu, Marx, and Weber

At the crossroads of Bourdieu's intellectual journey over the last four decades
lies the crucial question in Western social theory since Marx: the debate between
historical materialism and cultural idealism. Bourdieu proposes a sociology of symbolic
power in which he develops the themes of relations between culture, power, and
stratification (Anheir et al. 1991; Sabour 1991). He argues that the struggle for social
recognition is a critical aspect of social life. In the same struggle he states that
institutions, processes, and cultural resources structure groups into self-perpetuating
hierarchies of domination. He claims that all cultural symbols and practices embody
interests and function to enhance social distinction. Individuals and groups constantly
struggle and negotiate strategies to achieve a gamut of interests within fields of conflict,
and in so doing these agents reproduce the social stratification order. Culture, then, is
not "empty politics" of negotiating interests but rather is a full blown expression of it (Bourdieu 1989).

Similar to Marx, Bourdieu stresses the importance of conflict and class-based social struggle in modern societies. He is, however, critical of class reductionist analyzes of religious and cultural life. He is materialist in the sense that his analysis of human consciousness is anchored in the taken for granted practices of everyday social life. Bourdieu rejects the notion that social reality can be categorized into spheres such as the cultural, the social, and the economic.

In his ethnography of the Kabyle of Algeria, Bourdieu (1972) does not deal with the practice of economism in which social actors calculate how to maximize their yields in an open forum of decision-making, but with agents enculturated to certain dispositions, with certain schemes of thinking and acting that are regarded as the only right way to do things because they are the natural way to act. As an entire system of schemes of perception, appreciation, and action, these dispositions constitute what Bourdieu calls habitus. It is habitus that lends order to customary social behavior by operating as "the generative basis of structured, objectively unified practices" (Bourdieu 1972).

In short, habitus, the product of history, produces and perpetuates individual and collective practices, and hence history, in accordance with the schemes engendered by history. Such dispositions give birth to strategies that do not only manipulate the established order but also preserve it by constituting the field of what is possible within the limits of their manipulative exercises, daily exercises guaranteeing the
misrecognition of possibilities (1977:82). Bourdieu insists on the need to analyze the social construction of those contexts. Such contexts are conditioned by “the system of social relations of production, circulation, and consumption in which these relations are set up and in which the social functions that they objectively fulfill at any given moment are defined” (1977:231). Power is enacted not only by the mobilization of material violence, but also by symbolic violence leading to the imposition of the very principles of the construction of reality or common sense. Such a sense of reality, given expression in the production of mythico-ritual homologies, produces a closed ideological world shutting out the possibilities of change and contestation. The dominated social groups have no means of rebelling against the imposed definition of reality. Hegemony, in this context, is a matter of “good faith”. Misrecognition or false consciousness is not simply imposed on the subordinate groups, but is a condition of the actions of the dominators. Strategies of cultivating cultural capital and coercion are recognized assets embodied in the idiom of honor that ensures that one has labor when needed and allows transactions in the market without resort to money. In such contexts, the moral obligations crafted and maintained such behavior are a mode of symbolic violence, unrecognized violence, which cements the allegiance of subordinates to one (Bourdieu 1989).

Although he talks of “conflict of interests,” he does not develop this concept into a basis for externally generated conflict. In his view, change emanates from awareness of other modes of experience, and diffusionist elements of change sprout from such
contexts as multi-ethnic urban environments and various forms of media. Societies outside these contexts, he argues, continue acting and preaching what they have been practicing. They continue to reproduce themselves with their own determinant social formations eternally. Doxa mandates a closed and static social system, in Bourdieu’s logic of practice.

For Marx, class struggle is the engine of practice and therefore of consciousness. In so far as man produces himself and society through labor, the real location of ideology lies in the process of production, that is, in the historical forms taken by the division of labor and the division of society into classes. Marx outlines his theory of culture, ideology, and consciousness around the contours of inversion and reflection. For Marx, consciousness is not determined by practice, but rather it is mediated by a level of appearances that are constitutive of reality itself. In the capitalist mode of production, the sphere of “surface relations” is rooted in commodity exchanges. Its institutional agent resides in the market which “transforms the social relations of individuals into the social connection of material things, personal power into material power (Marx 1977).

As commodity, land, labor, and capital become the object of man’s own objectifications. Marx (1977:421-492) discusses three fundamental forms of the circulation of commodities and capital. The first form is the conversion of commodities into money and the change of this same money into commodities (C—M—C, or selling in order to buy). The Second form is M—C—M, the transformation of money into
commodities, and the conversion of commodities into money, and the change of commodities into money or capital. The movement C—M—C begins with a commodity and ends with another “which falls out of circulation and into consumption. Consumption, the satisfaction of wants, in one word, use value, is its end and aim” (1977:448). In this circuit M—C—M starts with money and ends with it, and its goal is exchange value. This circuit money chases money resulting in a surplus value. In this movement “value becomes value in process, money in process, and, as such, capital” (1977:448).

In his analysis of capital formation, Marx distinguishes between constant capital and variable capital as overriding the traditional distinction between fixed and circulating capital (Dobb 1973:155). Circulation of commodities obscures the structure of the production process and its “innermost secret”, the extraction of surplus value by erecting between ideology and production a real world of appearance, market forces. The distortion of consciousness then, does not rise from the fields of discourse and ideation, but rather it is rooted in the form of capitalist production; ideology is manipulated within the mode of production itself. Fetishism, for Marx, this form of consciousness which provides historical social relations “the fantastic from of a relation between things,” is exactly what perpetuates the permanence of the inversion. Commodity fetishism is equipped to make the historical seem universal, and the social appear natural. Thus, ideology is part of the superstructure of culture, and perpetuates inversion in the capitalist mode of production.
Marx's conceptualization of culture, then, melts into a theory of ideology linking false consciousness to the social contradictions of the capitalist mode of production. Ideology reflects and conceals economic domination in class society. This limited conception of ideology does not provide Marx with the appropriate tools to construct a theory of culture and consciousness. In many aspects, Marx's theoretical efforts set the grounds for Bourdieu to construct his sociology of culture. His problematic is to unravel how culture not only expresses but also constitutes and reproduces structures of domination in society by misrepresenting the economic and political power that form at their basis. To do so, he weaves the Marxian and Weberian theoretical analyzes of culture into an instrument of domination (Bourdieu 1977 and 1989; Wacquant 1993).

Bourdieu fortifies Marx's concepts of reflection and mystification by fertilizing them with his notions of habitus and constitution. He then turns to elaborate Weber's theory of symbolic goods that could transcend both class reductionism and idealism. Bourdieu elaborates Weber's notion of ideal goods and interests. He applies the idea of interest to the sphere of non-material goods by arguing that all practices are "interested" whether directed towards material or symbolic goods and services. Bourdieu views resources as capital when they operate as "social relations of power" by becoming arenas of struggle as valued resources. Bourdieu's notion of religious capital is closer to Weber's idea of "religious qualifications." It represents "accumulated symbolic labor," and is related to the "constitution of a religious field" where a particular group of religious specialists operates and maintains the management of the religious goods and...
services (Schwartz 1996). His concept of cultural capital includes a variety of resources such as local and scientific knowledge, taste and dress, language, and so on; his point is that culture can be a power resource (Bourdieu 1972 and 1993).

Similar to the Weberian constructs of charisma and legitimacy, Bourdieu contends that the exercise of power requires legitimation (Weber 1978:226-250). Symbolic practices and exercises, he contends, veil the interested properties of practices and therefore contribute to their rendition as disinterested acts. Symbolic capital is "denied capital", it conceals the underlying "interested" relations to which it belongs, bestowing them the garb of legitimation (Bourdieu 1977).

Bourdieu hence provides a theoretical framework for the non-reductionist properties of cultural productions as forms of power by extending the logic of economism to the non-materialist spheres where he identifies honor, prestige, status, and knowledge as forms of capital. In Bourdieu's social world, individuals and groups pursue investment strategies in cultural goods just as they do with economic goods. Inspired by Weber's constructs of distinction of status, convention and law, Bourdieu argues that status groups are classes that manage to hide themselves behind the veil of culture--they are misrecognized classes (Weber 1978:48-61).

Throughout his project, Bourdieu does not, however, spell out the interplay of habitus with outside or dormant inputs and its progression towards transition and change. It is precisely this transition which is at the center of the Haratine's social field. The strategies of the Haratine's investments in land and trees do not just embody
economic goals but also strive to capture stocks of cultural capital that have been denied to them for so long. While Marx identifies a progressive movement or circulation of capital and commodities, Bourdieu’s unchanging habitus and misrecognition lead social groups to convert material capital into symbolic capital which is, in turn, changed into material capital, and the circuit of this circulation reproduces itself over and over. The strategies pursued by the Haratine to unpack habitus and its dormant misrecognition properties aim, however, at capturing cultural and symbolic capitals through the medium of land acquisitions.

"Monsieur le Capital and Madame la Terre" have resulted in the transformation of remittances into commodities, and the change of commodities into status change. The Haratine’s movement of capital takes the form of M—C—C prime, where C prime equals C plus change in C— the initial sum of money invested in land, plus a cultural increment or advance. This cultural or prestige credit I call the cultural surplus value. The value originally invested in land, a constant capital, not only satisfies human wants and remains out of circulation, but also adds a cultural capital in the form of power. It is these strategies of investing in land, I argue, that translate capital, or “naked cash” into political power prompting status change among the Haratine and unfriendly reactions by the Arabs and the Berbers.

The Past and the Present of the Haratine

Historically, for the Ait Atta Berbers, land tenure was the founding pillar of law and tradition, azerf. Land and tree tenure was virtually the decisive vehicle through
which the Ait Atta's social organization expressed itself. Exclusion of outsiders was the chief operational element of the Ait Atta's construct of property, and the perpetuation of tamazirt or the patrimony of the community was jealously guarded by the keepers of customary law and tradition. No one other than a member of the Ait Atta and the holy Arab lineages could acquire land in the Ait Atta land, particularly not the Haratine. Property was the primary cementing block of the "conservative closed corporate community," and was embedded in complex contexts of violence, ecology, power, and cultural concepts to keep outsiders and the conquered from accessing it (De Monts de Savasse 1951; Gellner 1969; Hammoudi 1974; Dunn 1977; Hart 1981 and 1984; Mezzine 1987).

The concept of shafa \(a\) or preemption, for instance, was and is still mobilized to block land transfers from Berber lineages or ighsan to non-Ait Atta groups. Land tenure or tamazirt for the Ait Atta is referred to as al-\(a\)Sl or origin and ancestry; in other words, origin, social structure, and identity were and are still writ large in property.

In the valley's chain of ethnic stratification, the Arabs and the Berbers classify the racial and social status of the Haratine along at least five attributes: 1) a skin color attribute, \(a\)Hardan, implying black and not worthy of respect; 2) a landless attribute, people of no al-\(a\)Sl, denoting lack of ancestry and shamelessness; 3) an obtuseness attribute, ighyal, meaning short of intelligence "like donkeys" and infantile; 4) a patronage attribute, ait-tmurt or "our people" indicating the Haratine client status; and 5) a labor attribute, akhmmas, sharecropper, naming any Hartani (plu. Haratine)
working on the lands of the people of *al-aSl* in exchange for one fifth of the harvest. In *siba* or dissidence times, they were also deemed to be “like women” and not permitted to wear white turbans, the symbol of Ait Atta and holy Arab manhood. They were prohibited from participation in the *ajmu`n-ighram* or village council of the Ait Atta, denied arms, and sometimes used as shooting targets for any Ait Atta member who wished to test his new gun (Jacques-Meunié 1958; Hart 1981).

Once the French “pacified” the bad lands of the Saharan frontier and established themselves, the Haratine slowly rejected the old ties of traditional society and welcomed the opportunity to migrate. Because the Haratine were landless and were not allowed to have the means to acquire private land, a large number of them migrated in search of seasonal and annual work, first in French Algeria and the interior of Morocco, and later in Europe. The integration of the Haratine into the colonial system has had radical implications on the transformation of traditional relations between sharecroppers and landowners.

The transition of the Haratine from the pre-colonial society is not the result of the internal mechanism of the local social system but the result of the policies of the colonial and post-colonial state that facilitated the means of communications and movement. This transition from pre-history or no history at all to history making was made easier by the slow replacement of old tribal systems of governance by the French colonial administration.

These reforms helped most of the Haratine to escape the old patron-client ties of
sharecropping, and ignited their desire to migrate outside the walled corporate communities of the oasis in search of seasonal and annual wage labor opportunities. These reforms led to two major events in the valley: the first is that the entire region was integrated into national and international market labors and the second is the fact that the pull of wage labor made emigration a highly attractive option to the Haratine when compared with the exploitative labor inputs of sharecropping in the valley. An earlier study on the impact of the Hassan Addakhil Dam on the valley's ecology by Toutain (1982:80) indicates that seasonal migration increased by 330 percent, long-term migration by 115 percent, and the number of able-bodied men joining the army reached 330 percent between 1970 and 1977. Additionally, the analysis of the surveyed sample indicates that 58.80 percent of the able-bodied male members of households practiced seasonal migration between village and city while 41.20 percent practices an annual pattern of migration, in particular to France.

In fact, it seems that the Haratine's drive to amass land and the determination "to oust the old masters or syadna" could only be understood in connection with remittances from Europe. Though a few Berbers and Arabs have migrated, they have adopted Western consumption patterns, thereby taxing their participation in land investments. What is interesting, however, is the fact that the Haratine are using their new wealth to short-circuit the traditional barriers of access to resources and appropriate what is inherently a Berber cultural concept, al-aSl, to construct an empowered identity and produce a Hartani idiom of kinship. These factors, I argue, motivate their investment
drive and strategies.

It appears that the Haratine’s cultural appropriation of the Berber concept of *al-aSl* provides them with a multiplicity of cultural and power bases to challenge the traditional cultural hegemony of the Berbers and the Arabs. Migration outside the oppressive conditions of the walled corporate communities of the oasis has been critical for the Haratine’s transition from the pre-colonial period of “the people without history” to the people with history. When asked why they invest their remittances in land the Haratine respond that “*Tubat al-walidin* or the ancestral adobe brick keeps them coming back.” Access to land “breeds” empowerment, identity, roots and origin, *al-aSl*. Without land one has no rights to speak of, and one is “like a walking donkey” and “your value or *qimtak* is not even zero in the eyes of the community or *qSar*” (see Figure 7.1).

Figure 7.1 shows the evolution of land tenure figures among the ethnic groups of the Amelkis village over the period of eleven years. It reveals the fact that the Haratine have been accumulating land while the other groups have been slowly selling it. When compared with the other groups, the Haratine had 41.60 ha in 1995 against 35.00 ha in 1984 whereas the Arabs had 35.00 ha in 1984 and 27.70 ha in 1995 and the
Figure 7.1 Land Tenure, 1984-1995
The Village of Zaouiat Amelkis

Berbers had 52.20 ha and 51.80 ha, respectively. The incidence of land sales appears to have a higher frequency among the Arabs, and it is relatively low among the Berbers. Outsiders have also increased their land purchases, from 12.25 ha in 1984 to 16.50 ha in 1995. The analysis of the village’s record of land tenure or *kunnash taqwim al-mulk* indicates that around 65 percent of the outsiders are Haratine from neighboring villages along the valley. While the Berbers, and more particularly the Arabs, seem to be willing to sell land, the Haratine figures underscore the fact they are the buyers of land. The *habous* land, however, shows a slight increase in its accumulation of land and this is perhaps due to the prevailing feeling that such donations might benefit the village, if given to the poor.

Another cultural factor is the satisfaction the Haratine obtain from notoriety and gaining status. Having access to land is associated with having and establishing origin or *al-aSl*. In pre-colonial Morocco, particularly in most of the Saharan valleys, political representation in the ethnic council or *taqbilt* rested on the landed lineages. Since the Haratine were landless and sharecroppers their political participation in the ethnic council could only be possible through land ownership. The Haratine are not born with rights; rights and full and equal membership in the community are acquired by having access to land and representation.

As a result of these investment strategies, the Haratine have moved from the stage of absolute sharecropping to a stage where they negotiated the terms of sharecropping. These terms evolved from the one-fifth share to the one-half system to a
full-fledged choice of land rental and purchase, or, migration. Toutain (1982), for instance, noted that the number of sharecroppers has decreased by 36 percent between 1970 and 1977 while ORMVAT (1987) reported the increase of non-agricultural work by 20 percent between 1965 and 1980. Within the surveyed sample of the 61 households, the analysis revealed the absence of the one-fifth system, the rise of the system of land rental among the Haratine with a percentage of 15.66 percent, and only 4.60 percent of the total parcels are under the one-half system of production of which 4.28 percent is under Haratine control.

These changes have also transformed the ethno-political structure of the villages. Although they have challenged the traditional order and have become wealthy, they have never left the village. In fact, they keep coming back to buy land and assert their presence among the traditional declining Arab and Berber elites. The local ethnic or lineage-based council had to accommodate the rise of Haratine economic power. The continuous flow of remittances in combination with an increased portfolio of land have gained them political representation in the ethnic council, a council that was closed to the Haratine in pre-colonial times. Over the last two decades, they have been influential in local political decision-making. These changes, however, have not gone unnoticed by the traditional power holders, the Arabs and the Berbers. They are dreading the social mobility of the Haratine and regret the fact of not migrating to Europe while the door of migration was open to all people in the late 1950s and early 1960s.

The remittances have certainly facilitated the Haratine’s quest of unpacking the
chains of habitus and hence attaining equality and social mobility within the stratified communities of the southern oases of Morocco. In essence, these economic and political changes have prompted the mobilization of latent ethnic consciousness and the creation of tradition among the Haratine. The appeal to a Haratine ethnic consciousness and status change creates a space for mutual aid. Because most of the Haratine are still poor and because most of them have not equally benefitted from the same remittances revenue streams, the most fortune ones have established a burial fund in the Amelkis village.

The fund is a recent institution and came to existence in about 1983. Because some members of the Haratine ethnic group cannot offset the expenses associated with the religious ceremony and guests, the fund underwrites most of these fees. The fees usually cover the purchase of food, the expenses of the religious ceremony and the material for the digging the grave. Most Haratine, in particular those who are really poor, do not have enough room. Even furniture and cooking utensils are borrowed from the fund to feed the guests at no charge. Every Haratine household is required to contribute to the fund in cash or in kind, and the fund has a manager who sees to it that every Haratine has given his or her share. The collection of contributions be they cash or in kind takes place at different times of harvest because “at this time no one can hide from his obligations to the fund.”

When asked about the fund institution, its manager said that “despite that some of us [Haratine] have done well, most of us are still struggling and remain as the poor of God. And we can only get out of debt from others [Arabs and Berbers] only through the
fund.” The unvoiced and central issue is the fact that the Haratine now cannot die in debt and leave unpaid bills for their children who, in turn, will be held to certain expectations and social obligations by Arabs and Berbers. “What we are all doing here is hunting for ways of establishing our independence of the old ties of the past,” a young Haratine adult said with pride.

Because of these changes, status and ethnic identity as a Haratine has developed as an idiom for cementing kinship relationships and leadership, responsible for the regulation of conflict and tensions in the community. The Haratine status, then, is rooted in the processes of social and political mobilization involving a collective act to enhance access to resources and thereby to ameliorate the standing of their community within the system of social stratification. This mobilization is performed through the ethnic solidarity of marriage alliances among the well-to-do and poor families, shared expenses for communal ceremonies such as weddings and funerals, and certain fictive lineage conventions as in referring to any Haratine as “ben `ami or my cousin” versus the others—“us” and “them” discourse is becoming an everyday convention.

What becomes clear is that the process of creating identities is historically and regionally specific. This historical construction of identity and status among the Haratine is only possible when worked within cultural terms. In addition to the creation of their own sense of tradition that the process involves, the Haratinization process of the means of production has succeeded in the sense that it “moves” particular aspects in their shared historical experiences; a shared history of subordination that touched them
all. The Haratine, in this sense, are creating and re-arranging older elements to “elucidate the empowered production of identities” (Comaroff 1992). The takhmust or sharecropping institution is no longer a matter of good faith between the owners and the landless but it is subject to intensive negotiations and terms of work. Tree sharecropping, for instance, has evolved from the one-sixth share to one-tenth. “In the old days before Francis (the French) and this thing they call democracy, they [Haratine] followed the way things were; they listened and did not question the nature of things. But these days, they even have the face to look you in the eye and dictate what they can or cannot do. This is the end of the world as we know it when the Haratine get to have the word and make rules, Allah in `al had zman: May God curse these times,” said an old Arab of holy lineage in a nostalgic way.

Although the Haratine have been successful in acquiring land and creating their own collectivism, they still run into difficulty at a number of levels. These socio-economic and political changes sweeping the valley are, however, silently resisted by the declining traditional nobility, a nobility forced to “eat its fields” and al-aSl, one by one, to meet its subsistence and “ceremonial” fund and to face up to the new demands of the community’s cultural economy of jealousy. The struggle of the declining elites with the improvement of the Haratine’s social, political, and economic status involves various hidden and voiced forms of social struggle over the ever-changing shape of the community.
The Ziz Valley's Senses of Community

Recently, a number of various critiques of representation in anthropology have questioned the traditional pillar of anthropological research based on the concept of community. A plethora of ethnographic writing has revealed that the little, neat, and conflict shy community, well elaborated in the works of such anthropologists as Robert Redfield (1955), represent the author's dictates in creating his or her story rather than an empirical presentation of events and people as they really are in "the real world" (Anderson 1983; Crehan 1997; Gupta and Ferguson 1997; Potter et al. 1967; Shanin 1971; Watts 1992). By contrast, the communities of the Ziz Valley are undergoing major changes, and these changes have come to give shape to fragmented and unbounded senses of belonging in the valley's communities.

In fact, with the infusion of remittances leading to the rise of the Haratine's socio-economic status and the slow decline of the old nobility of the Arabs and the Berbers, the old spatially bound and coherent villages are cut by competing discourses and ideologies on how the community was and is: each ethnic group sees itself as a collection of people that has to defend its interests in the face of the perceived threat from the others, and each ethnic group is well versed in how its sense of community was and is, and how all these changes are either a menace to the common good or a healthy step for the betterment of the lot of the other people.

These competing voices, although framed and conjugated in the third plural for the sake of not wanting to alienate and isolate the others, are highly sensitive in their
accounts of the past and the present events of the village. Because no group wishes to be overtly isolated and because all members of the community meet five times a day in the village’s mosque, and also because the agricultural bases of the village still require communal labor for the upkeep of the irrigation system, the level of tension is kept under a more or less manageable system, at least, in the public discourse arena. However, the private or hidden transcripts of talk about the negative and positive changes that the members of the community have witnessed are different. They exude with mixed opinions and feelings about the old glorious days of the Arabs and the Berbers and the better and much improved times of the Haratine. In my view, I define the term community: 1) as a set of complex social relations among a collection of people residing in a more or less defined geographical area; 2) as a unit of economic production and consumption of goods and services by the residents and non-residents for their own subsistence needs and the market requirements; and 3) as an integrated part of the larger society. So, how do the ethnically aware people of the Ziz Valley talk and conceptualize their sense of community in these trying times?

Within the incessant intrusion of government services into the area and its central objective of eliminating, if not liquidating, the old tribal system of social organization, the administrative reforms began with the French and intensified after Independence have a left a mark on the locals. Of all these reforms the locals are quick to pinpoint the flawed nature of the elections that came with the new establishment of rural communes or counties that brought a large share of the villages’ duties and responsibilities under
the eye of the government and its agencies. This was done by electing local representatives from villages, and these elected officials formed the governing body of the Rural Commune under the leadership of the District’s Parliament Representative. The old tribal council that governed the village found itself representing the government, and its local authority was limited to the communal arrangements of irrigation and the olive oil press. The intrusion of governmental policies is so striking to the point that decisions of when to harvest dates and olives, for instance, once the internal business of the council, are now substituted by gubernatorial memos fixing the date of harvest in the entire province. Although the mosque was under the umbrella of local governance, the government’s agency of religious affairs has taken that responsibility. The old mechanisms of conflict resolution has found its way into the provincial courts. The new policies of integrating every inch of Moroccan soil into the national sphere has succeeded in eroding the local forms of governance. As a result, it appears that political parties, in particular and the color of their voting cards, matter more than the local politics of ethnic management of religious life and the means of production. Since the late 1970s, the rural election campaigns have actually divided the valley’s populace along political parties and ideologies, and even exacerbated ethnic tensions at the village level—we are the people of this or that and we vote for so and so because he is one of us. In fact, given the Haratine’s remittances, involvement in politics, and higher household size, Arabs and Berbers see the election process based on the one man one vote as flawed and insist that the old system of the people of land or origin ought to be
the leaders and not the losers for some Haratine because of their “rabbit like” breeding behavior. All these factors have conspired to take the best out of all the ethnic groups when they reconstruct their past and imagine their communal futures in the valley.

Let’s consider Yidir’s Berber narrative. Yidir is 72 years old, a Vietnam veteran and a retired irrigation guard, and still gets a pension from the Ministry of Agriculture and Agrarian Reform. He joined the French Army in 1951 and got shipped to Saigon in May 1952—he went from Sefrou across the Algerian-Moroccan borders to Oran, then on board the SS-Athos to Saigon, Indo-China. He stayed in Vietnam for two years and witnessed the early Vietnamese revolt against the French, and returned to Morocco in 1954. He thinks that “all the Vietnamese need is wheat and dates; they have everything and it is always summer over there,” he said with the pride of a legionnaire. He is also credited with being the first person to bring coffee and to introduce the bicycle to the village.

When asked about all the social transformations he has lived through, he is quick to lament the erosion of the old tribal system of governance when the Berbers and the Arabs word carried weight and how this word was backed by force if not implemented. For him, the village has fallen to an unruly state in which the Haratine have come to say their words on its management and this fact has even speeded the total erosion of qanun or law and gave way to huriya or freedom. Most of the people who think they are democratic or free have no idea of what it is.

Yidir illustrates the demise of old good justice and law as well as the old
community where law and order prevailed by examples of the Haratine’s defiance of the village’s mechanisms of keeping order. “In the old days, and even under the French, when a thief is caught he paid his dues in the village and paid his fine either in kind or in jail. These days, offenders have no respect of law and have found ways of getting out of their penalties,” he said with a nostalgic manner and longing for the old French days and Berber mode of governance. He decries the fact that most of the Haratine, because of the intervention of the local representative at the county level and because they voted for him, always get out of their duties to the village, and this is a corrupt way of holding people responsible for their actions. “You cannot trust the Haratine, they have large families and few fields or none at all, and yet they manage to have some livestock. People wonder how they feed their livestock and the answer is that theft is rampant everywhere, and even your sharecropper would steal from you. There is no respect, and no shame anymore, and all I do is expose the ugly changes of time,” he said with a strong and disciplined attitude.

When asked again about his military service, he quickly produced his Liveret Militaire or Military card, although it took him some time to locate it since he is illiterate. Illiterate he is, but street and world smart, he said. He remembers his military service with fondness and appreciates its hard work and strict ethics. He is also fond of Général Charles De Gaulle. “He was a real man, a great man and he embodied discipline and a great sense of achievement unlike the people I am surrounded by here who cheat and who are corrupt.” Yidir is decisive in his judgment about the recent
changes in the village and the larger society, and some villagers attribute much of his vocal attitudes towards the Haratine and the rest of society as in indication of an old man who like to imposes his world view on his household as well as his neighbors. Some think he is bitter and even crazy because the times have not been kind to him and his sons because of his “military interventions” in their lives. Others believe that his point of view must be seen as a generational gap—he lived under the French and the Moroccan system and he saw the rise of the Haratine as an anthesis to the tenets of the old Berber regime of *lahkam* or law and *ima`qul* or reasonable behavior. The Haratine in this sense bring upon the community disorder and irrational attitudes of corruption and shame.

Yidir is not alone in his positions. Other Berbers and Arabs share much of his analysis of the causes behind the erosion of the village’s old communal traditions. Similar attitudes rise to the surface, particularly in times of elections. Eight years ago, the village of Amelkis had only three olive oil presses: the communal press of the tribal council and two private presses owned by a Berber and an Arab. During the elections, the Berber owner of one of the presses was running for election to represent the village at the county level, and his Haratine workers switched sides and voted for the Haratine candidate. Upon the defeat of the Berber candidate in front of the Haratine representative, the Berber fired his workers and told them “that for next year’s olive harvest they should look for work with the man that they elected [the Haratine].” When the Haratine representative heard these statements he built an olive oil press to hire those
that the Berber promised unemployment for next year.

The crucial issue that seems to fluster Berbers and Arabs about the way the elections are run is the fact that voting should not be universal and real voting should be tied to the amount of land each lineage owns. For Berbers and Arabs alike, "the Ziz Valley's villages have become more Haratinized—everywhere you look there are too many of them. The Ziz Valley is becoming another Somalia." The Somalia images are tied to all the images on television that they saw during the Operation Restore Hope undertaken by the American military under the auspices of the United Nations. The images they saw were images of poor black children and families and those images were used by Berber and Arab youth to refer to the Haratine while inserting a joke here and there about when their visas of stay in Morocco are over, and inquire if they had packed up their belongings and when they will be making the trek back home to Black Africa.

From the Arab side, Mulay is 67 years old and considered a holy Arab as well as very well-to-do household head. He owns an olive oil press and has almost 3.5 ha of land. While Yidir who combines a cosmopolitan and a local look on the village and its surrounding environment, Mulay is in many ways fortunate enough for having led a local and regional way of life since his birth. Mulay, given his holy status and the respect he gets for being a descendent of the Prophet's line, wishes to distinguish himself and his oil press from the other three locals ones: the communal press, the Haratine one, and the Berber one. He conceded that there is competition among the three olive oil presses, and true enough, for people who chose not to press their olives at
the communal press, they put them in the other three private ones following more or less an ethnic or lineage motivation.

Mulay states that his press workers are serious and very experienced, and do know how to press oil out of olives. He insisted that I take note of how clean the process, and how the press workers put a plastic sheet when they transport crushed olives to the oil press. He said that unlike the other presses where they usually would pick the fallen bunches of olives mixed with dirt, his press is cleaner and gives much more oil than the other ones for every batch of olives.

As for his reflections on the recent changes that he has observed over his life span, he said that the villages of the valley are becoming black. The number of blacks surpasses that of the Arabs and Berbers combined. Their sheer number has been boosted by French remittances, hard work, and the determination to buy as much land as they can and to enter the realm of politics from a wide door. “As you can see by your own eyes and hear by your own ears, the present president of the Rural Commune in Aouffous is a black man, and elections have become a black affair,” he said in a low voice.

In the old days of the tribal council, the village agreed on representatives from the Arab and the Berber dominant lineages, and “if you got it, you got it.” Now, the number of the blacks has increased and things have changed. Credible people lose because of their number and not because of their standing, honor, and wealth in the community. The Haratine were never full members of the Taqbilt or local council, and
made their entrance to the council only as waiters during the social functions or gatherings of the council. The Berbers and the Arabs made the decisions, and the Haratine carried them out just like everybody else in the village. They entered because of the Berber belief in democratic representation and because some of the Berbers did not want to deprive them of the right of membership in the council, and that is a big mistake according to some.

Things have changed and the blad or village is not the same. Mulay relayed the following story to illustrates his analysis of social transformations in the village. He told me that a French colonial officer was on a duty tour in the village in the late forties, accompanied by the village’s moqaddam or village head. Upon his tour the French officer noticed a collection of well-dressed and shaved people sitting on a bench in front of the village’s gate and inquired about what they did for a living. The village head answered that those people have black sharecroppers and do not work. "Well," said the French official and they continued their inspection tour into the palm grove. While walking through the palm grove, they run into a Haratine man with a load of alfalfa on one shoulder and a pick on the other, shabbily dressed, with pants hardly reaching his knees. The French turned to the Berber village head and said to him "these sharecroppers will take over this valley one of these days, hard work pays off." This story is a popular tale among the Arabs and the Berbers. Mulay adds that the French prediction is happening nowadays.

Furthermore, while the Haratine have been buying land year after year, the
Arabs and the Berbers who could not work or do not have *dra* (muscle power) either borrowed money and put their land as collateral or they started selling it piece by piece to satisfy their subsistence and market requirements. The option of going overseas was not honorable, and one went overseas only if he had nothing or did not own a foot of land to his name. It was shameful to go overseas for work and only the Haratine could do that since they had nothing to lose. However, only a few Arabs and Berbers went to Europe. Because of these internal and external migration opportunities the Haratine have been successful in dismantling the old one-fifth sharecropping regime and replaced it by the one-half system. Given also the old age and nuclear family properties of almost all Arab and Berber households as well as losing their able-bodied adult male to schooling, government services, and the army, Mulay said they did not have a choice but accept the one-half system of land exploitation; and “you are lucky if you get that complete one-half.”

The lack of supervising the work of the Haratine and the ineffective functioning of local mechanisms of guarding the palm grove has led to an explosion of theft in private fields as well as on the communal banks of the river and the major irrigation canals. The inclusion of the Haratine into the local council and their success in influencing the elections have led to the deterioration of the management of the irrigation infrastructure. Their representative on the council, Mulay insists, has made a career of letting his Haratine offenders get off the hook. The execution of justice has left the village since the Haratine have entered the council body of decision-making. Letting
people function outside the expectations of the rule of law and justice has led some Haratine members to defy the normal rules of sanctioning offenders who steal produce or irrigation turns from their fellow villagers.

It is a way for them to rebel against the past, and they do it by showing no respect even to the elders and by obstructing and walking over the community’s traditional rules of maintaining law and order in the palm grove. As a result, people who used to grow vegetables refrain from doing so because the Haratine would not leave them alone—it is a lawless place. In the old days, once one gets a convocation from the mayor or a scolding from the village head it made a person sweat from head to toe, an indicator of how the power of justice execution was robust and effective. “These days, there is too much freedom for people who do not deserve it. Freedom is an understanding and an education, and no way does it compel some members of the blad to turn the laws of the community upside down. Today, the sheep and the wolf are hanging out and grazing together. Rules engraved in a long tradition are meaningless to them, and they want to do what they like regardless of the interest of the others.

Although not all the Haratine have access to migration remittances, they have been educated to view the Arabs and the Berbers as their old masters that should be questioned and resisted,” he said.

While the Berber and Arab accounts of the past and the present are mired in deep nostalgia of the old past order when they ruled the village community with an iron fist, the Haratine narrative, though anchored in the event of the past, tends to paint a bright
present and future played in a complex situation that they are traversing in which they wish to found their own sense of community and belonging on an equal basis with the other ethnic groups.

The Haratine narratives of the past are full of references to the hard life and suffering they underwent under the old masters of the valley and the French colonial policies. Lhaj Haman, a Haratine in his late sixties and a former sharecropper. He made the *Haj* or pilgrimage to Mecca, and that event affected him; in particular in terms of how people should deal with each other. In Mecca, he said with a sense of religious steadfastness, “we were all in the same light dress and we were all equal in front of God.” He is one of those who made the transition from landlessness and basket making to higher status associated with land acquisition and pilgrimage. He was a sharecropper, and now he has a sharecropper, as he likes to say. This transformation has been made easier with the flow of French Francs and all sorts of hard work and crafts. As a young adult in the company of his brother, there was hardly anything they did not do or try, from work in the mines, harvesting wheat in the Rissani area in spring, to harvesting wheat in summer in the Middle Atlas Mountains. They also were the masters of adobe construction through the valley as well as in the Middle Atlas area.

In terms of social relations with the other ethnic groups, he spoke of *dagh* or oppression. The Haratine did all the irrigation and agricultural work, and we were paid one kilogram of wheat or corn to take to our children. When they worked as sharecroppers, they were exploited. For the one-fifth of production they got for their
labor, the sharecropper has to work the fields with his labor power in exchange with other sharecroppers. Before tilling the fields, the sharecropper's wife obtained five or six kilograms of wheat from the owner to clean, grind, and bake a loaf for each worker in the labor party or twiza. The owner provided only a dish of meat and stew. The Haratine were pressured to work and were exploited, and the elders of the masters in concert with the Berber Mayor or qayd and other French collaborators made us work almost naked on an annual basis. “I remember with vividness, just as if it happened yesterday or earlier this morning, during one of the major floods of early fall and late winter, the guard of the irrigation system made us work naked and the only thing we ate was a piece of bread tucked under or around our waists—your hands worked, your back was bent, and your forehead sweated in five meter deep irrigation canals from the rising star to the evening star,” he said shaking his head and repeating over and over that those days were days of pressure and oppression.

Lhaj adds that in the aftermath of the devastating floods of 1965, he and other Haratine had to clear and build the damaged irrigation infrastructure. While fixing the canals, they slept in the palm grove. He said that the Haratine were notified by the village’s council and had to show up for work. If one failed to show up, the fines were very stiff and beyond the means of the Haratine. In those days “justice was absent, and it was all pressure, pressure, and pressure.”

While the French days are somewhat cherished by Arabs and Berbers alike, the Haratine see the French as conspiring with the old nobility to keep them oppressed.
Lhaj said that the Haratine were caught between the French, on one side, and the Arabs and the Berbers, on the other. Even during the *jihad* or holy war against the earlier inroads of the French Protectorate, the Haratine were not allowed to bear arms, and their role in the *jihad* was limited to transporting ammunition and food on donkeys and mules for the Berber and Arab holy warriors. This situation was even worse during the days of dissidence discussed earlier when the Haratine were tied to their masters through clientele relations. At that time also, they could not move freely from the village for the fear that they might be raided by labor hunters. As the saying goes “not every white camel is full of fat,” meaning that white men were not kind to the Haratine in the past, and with this saying Lhaj summed up his recollection of the Haratine and Arab and Berber relations.

In the colonial days, other Haratine lenders reported that there was plenty of scarcity and no justice. Nowadays, there is almost too much of everything to eat and wear, and there is also justice, particularly after Independence. Under the French, the Haratine were compelled to enroll in corvée labor for the construction of public works such as roads and they were also obliged to catch birds and destroy their eggs so that the yield of wheat will be saved from the their beaks. In the event of not obeying these orders, they were subject to jail sentences ranging from one to three months. When the sentences were pronounced, the French District Officer in charge of indigenous affairs would usually shorten the prison time, but the Berber Mayor made his best to leave the sentence as is, and he always won.
In spite of the progress that the Haratine have made in reshaping their new sense of community and equality vis-a-vis the old nobility of the valley’s communities, they still face resistance in some villages which deny them political participation in the management of local resources and prestige. Berber and Arab members compare and contrast villages where power has been shared with the Haratine, and for them it is a lamentable situation. In the village of Azoulay, for instance, I was told by an old Berber woman that her village is much better than the one I was raised in because in hers the Haratine are not allowed to govern. In her village, the council would not allow the entrance of Haratine into the decision-making, even if they owned land. The council would not incorporate non-Berbers. The Haratine cannot say a word about how to run the *blad*. In order to impress the anthropologist and lecture him about the effectiveness of ethnic solidarity that my village seems to have lost a long time ago, she related the following story.

In the 1980s, during the regional parliamentary elections in which there were two candidates, one Arab and the other Haratine, the Berbers supported the Arab candidate while the Haratine voted for the Haratine. Before the vote count, the Berbers started celebrating the not-yet-sure results of the elections. Later, however, they were surprised when the Haratine candidate actually won. As a result, the Haratine took to the village’s streets to vent their joy and started singing a song in which they were telling the Berbers, “go, you flies to sleep, our man and candidate won.” The next morning, the Berber men and women gathered and agreed to boycott Haratine labor. The Haratine
were informed not to work the Berber fields, not to gather grass in the palm grove and on the river banks, and not to fetch dead wood from the fields, and not to pick up olives and dates. Essentially, the Haratine sharecroppers found themselves unemployed overnight, and their labor arrangements were eliminated. Furthermore, when the Haratine were encountered throughout the palm grove, they were questioned as to the reasons that brought them to that part of the palm grove, and they were reminded that the fields and trees that have been feeding them for generations are not the property of the Haratine candidate they supported.

Since almost all the village’s Haratine depended on the Berber fields for subsistence, the Haratine were “squeezed” and sought the good offices of a holy man in the next village to mediate the conflict between them and the Berbers. On his way to the Azoulay village, the holy man fell into an irrigation ditch, and he took this mishap as a bad omen or *ukhzit*, and returned to his village, leaving the Haratine on their own. The Haratine would, in the end, sacrifice a sheep on the elders of the Berbers and ask for forgiveness to iron out the problem. In so doing, the Berbers accepted the sacrifice. “We are not like your village [Amelkis], you have let the Haratine represent you and ride all over,” the old Berber woman said in a forceful way. I tried to convince her that the times are no longer the same, and that democratic representation principles are like what the Koran advises, but she refused the logic of one man one vote, although she agreed with the Hadith saying which states that there is no difference between people except in their deeds in this life and in the Day of Judgement before God. To my
arguments, she held her hand closer to my face and said, “no, go, go. There is nothing like that. You have lost, and we don't allow the Haratine in the elders council. We decide, and they carry out the decisions.”

Under these circumstances the village is no longer the closed corporate community it used to be in the pre-colonial times and during a certain period under the French rule. The nucleated nature of the old village has evolved into a continuous spatial organization, although it still constitutes an administrative framework in which communal functions are performed (see Bisson and Jarir 1986; Hammoudi 1970; Mennenson 1965; Naciri 1986; Pascon 1968). The old meeting place of the people and the council has given way to multiple places of gathering and decision making which seem to follow a religious pattern or agricultural cycles. The meetings of the council are held in the homes of one of the members of the council instead of the old council room found at the gate of the village. Most of the communal functions dealing with the management of the palm grove are announced in the mosque or in central places like the olive oil press or in the threshing fields depending on what crop is in season. These village decisions, as well as the sale or distribution of village land for housing, constitute the core of the village’s business. Defense and the management of the mosque and its land and trees are now in the hands of the specialized agencies of the government.

Despite the erosion of the corporate functions of the village, the decay of its built form, and the expansion of housing outside its old ramparts, the village, for the most part, has kept many aspects of the past: a social organization in which the performance of
agriculture and its irrigation infrastructure mandates a certain level of corporate cooperation. This situation is succinctly captured by the answer I got to a question on the nature of cooperation among the villagers from a farmer who said, “the village is ethnically heterogenous, and all we share is the irrigation canals and the mosque’s space for prayers.”

The qSar is not only a corporate community with its legal, economic, and social frameworks, but also the arena for political rivalry and status differentiation among its groups and members. As the accounts above show and the reference made to the past and present issues facing different ethnic groups and their standing for and resistance to the tenets of social stratification of the past: “we will oust the old patrons, or the Haratine must leave and regain their black brothers in Black Africa.” Statements such as the Haratine are not fit to vote based on their recent accumulation of land and only the old landed groups should be involved in the process, and the Haratine must not carry the community’s word indicate that status and social mobility are not achieved in the framework of the village, at least for the Haratine.

The point I wish to emphasize here is that the village is part of a larger society, and that what happens outside the village shapes the village’s community, and eventually becomes an active and constituent ingredient for social change. The Haratine’s struggle and hard work against the old ties in which they were not allowed to have access to land were matters worked within the structural framework of the village. Only with the advent of the colonial policies that provided peace, order and labor opportunities within
and outside Morocco, could the Haratine begin their resistance to the domination of the Arabs and the Berbers. The Haratine had to leave the village in search of labor opportunities and cash so as to negotiate and strengthen their status and political position within the village’s community.

Equally, if not more, crucial than the fact that the means for activating status change in the village are brought from the outside where matters of ethnicity and roles are permeable is the fact that the making of community is cyclical, and that social mobility within it appears to be a product of regional, if not global, frameworks. The integration of the Haratine into the colonial and post-colonial systems have gained them cash with which they have been able to buy land, a process that has lowered the status of the Berbers and the Arabs and forced some of them to leave the village for good. As the village becomes more Haratinized in terms of its population, political ascendency, and control of resources, the declining Berbers and Arabs are pondering the idea of leaving the village, provoking a decrease in the price of land. This situation, as I was told, provides the ideal scenario in which the qSar will become a Haratine community from its council membership to its irrigation canals.

Despite the ethnic tensions that have arisen in reaction to the Haratine’s social mobility in the valley, the role of Islam in the social life of the community must not be overlooked. The qSar is also a community of believers, or little *ummah*. Every Friday and five times a day the villagers come to pray in the mosque. The Friday sermons and daily prayers led by the village’s *fqiḥ* deal with Islamic ethics ranging from obligations
of prayer and palms to fasting and pilgrimage. During the sermon the *fqih* makes references to events that are taking place in the village and outside of it and how they should be avoided for the betterment of the community, and for the sake of conducting an equal and friction free Islamic way of life. The intensification of religious advise and guidance becomes even more important in the holy month of Ramadan. **Ramadan** is regarded by Muslims as a month of reconciliation, repentance to God, and intense worshiping of God. Because the month of Ramadan is one of the holiest month of the Islamic calendar and a month in which the Koran was revealed to the Prophet Mohamed, the *fqih* reminds the congregation that forgiveness and resolving disputes and old arguments among groups and individuals in Ramadan has no price in terms of rewards tomorrow in front of God. According to the *fqih* as well as all the congregation, “all the community is disputing over is *wsakh dunya*, or the filth of life, and the real disputes should be on the worship of God in preparation for the Day of Judgement.” Hence, tensions are muted, at least, by the Islamic ideologies of respect and the preference of working things out, while these things are still caught in a multiplicity of secular points of view: ethnic and economic.

In the nineteenth century, social theorists, concerned with the explanation of rapid social change and the impact of the industrial revolution on the social structure, concluded that in a society based on contract, increasing importance is given to the rights and autonomy of the individual as against the community. Individualism as a doctrine of faith gains prominence over traditional views of the tribal and religious
aspects of the community. Furthermore, one is more likely to encounter the replacement of traditional elitism and nobility by an open-ended social environment in which social mobility is possible. The exploitation of the low status groups by ethnic and legal mechanisms of exclusion is slowly undone by the market forces and the power of the cash nexus. A society based on economic classes and naked cash quickly eliminates its sacred and traditional infrastructure of values, only to see them re-defined with the framework of secular plurality.

Weber (1978), similar to Tönnies (1957), Durkheim (1960), and Maine (1917), contends that social relations may be either communal or associational. A communal relationship is supported by the subjective attitudes of the individual are affectional and traditional. By contrast, an associational partnership is driven by various acts based on calculated interests. Although, these theories provide nice analytical models for understanding the stages of social change from traditional or non-capitalist formations to a society organized around the rationality of the market and economic class, the transition from ethnically delineated communal relations to open and associational relations gives a more complex account to the social theory of change from *gemeinschaft* to *gesellschaft*. As I pointed out above, the composite nature of the valley’s communities, however, constitute separate and structured ethnicities in which economic interests are woven into politics, religion, and ethnic status.

In the Ziz Valley’s reality, as discussed earlier in Chapter IV, the spatial isolation and coherence of the village community allowed for the development of distinct
cultural forms for the organization of the community's life. Spatial isolation interfaced with a particular mode of ethnic production and ritual control reenforced the notables' notions of tradition, which provided behavioral frames for the villagers. These frames were based on the Berber codes or village constitutions. These frames specified the obligations and responsibilities of the village's ethnic groups, and provided cultural references for all sorts of village activities as well as avenues for involving participation in the maintenance and operation of village traditions and resources. Members did not carry around the burden of inventing, imagining, or resisting the dominant cultural streams, because no opportunities were available towards that end. Because the agricultural base of the village required collective effort for its cost of operation and maintenance, individual or group endeavors to resist the structures of traditions were always excruciating and time consuming undertakings, particularly in the times of dissidence. Social conflict was almost absent within the village's walls because the community had a hierarchy of values and status that responded to its critical interests of communal integration—only the Arabs and Berbers could own land and also a certain level of shared wealth or poverty was kept in balance so that Berber or Arab solidarity would not give way to dissensions, and thereby threaten the cohesion of the dominant ethnic groups.

Traditions of the village's composite ethnic communities were and still are expressed in its cultural and resource institutions. The absence of specialized agencies for conflict resolution and the non-divisibility of labor were represented and managed
by kinship ties, religious institutions, and sharecropping arrangements. In such a milieu, groups and individuals, although faced with social and economic inequality, constituted the integrative tradition patterns of the community. Having a sense of individuality was seen as an assault on or threat to the collective labor of tradition that the dominant groups jealously guarded. Once again, because the community of the village remains a collective sum at its core and despite the recent infusion of large sums of foreign remittances into the valley, most of the village's institutions are still far from specialization, and actually seem to privilege a stronger orientation towards ethnic solidarity and revival of the role of past tradition of doing things in spite of its subjugation to reformism by others, as the above accounts of the community's voices conceded.

Despite all the difficulties the Haratine are facing on their way to a Haratinized culture of organizing social life at the village level, with the acquisition of land they have sown the seeds within the old tradition that have created a wide range of options to re-negotiate the terms of Berber power and its dagger and to re-cast the religious capital or the seeds of the Koran of the holy Arabs, and thereby express their particular sense of community. This attempt has become real for some Berbers and Arabs who lament the fact that they have seen the Haratine evolve from sharecroppers to having sharecroppers and from debt burdened souls to creditors, and this for some who are resisting the Haratine tide say is "nothing but an indication of the end of the world in the fifteenth century of the Islamic calendar (in which we are now)." According to some farmers,
these changes echo the prophecies passed on from generation to generation. Times have changed a great deal. In the eighth century A.D., the century of writing and all predictions, the people of knowledge predicted that the fifteenth century will be one of major changes and plenty. This same century also is believed not to have any books written about it, since it seals the end of the world and there would not be any one left after to write about it. Revolutionary breakthroughs in all sorts of knowledge will take place, and these changes will coincide with untold and devastating upheavals. In the fifteenth century, "iron will speak and the farther will become closer," values will deteriorate, respect will degenerate, and all that sustained the community will dissolve.

Conclusion

In the Ziz Valley's social world and despite the end of this world or community discourses, ownership of land and trees are claims to power to do certain things and through land transfers new relationships are being established to reconfigure the old traditional power and social bases of behavior. In this context, land is the basis of claims to prestige and recognition, and hence, ownership of property breeds a status value. This ongoing historical change is being enacted in "an enchanted, perverted, topsy-turvy world, in which Monsieur le Capital and Madame la Terre do their ghost walking" (Marx 1977:504), as the Haratine keep on appropriating the Berber/Arab sense of community and origin while the bitterness of the threatened nobility gets greater and greater, day after day.
CONCLUSION

CONCLUSIONS, OBSERVATIONS, AND SOME RECOMMENDATIONS

As the preceding analysis of the Ziz Valley’s political and cultural ecology shows, the Ziz households live and carry out their intensive farming and non-farming activities in a complex set of ecological and socio-historical relationships in which ethnicity has been and still is a critical ingredient in the production, maintenance, and distribution of the means of production, particularly land and labor.

Boserup in her seminal book, *The Conditions of Agricultural Growth* (1965), suggests that agricultural systems are related to population pressure and that changes in the man/land ratio ought to be reflected by transitions in land use strategies. Accordingly, the intensification index is based on the cropping frequency moving along a temporal spectrum of land use strategies ranging from slash and burn to intensive annual and intensive multicropping. While agreeing with most of the premises of Boserup’s hypothesis of the relationship between population pressure and intensification or disintensification of land use, Geertz (1963) contends that intensification in Java does not constitute a change in land use strategies to a higher form of agricultural farming system, but rather exemplifies a system of involutionary production caught in an intricate set of internal and external forces. He shows that the Dutch colonial policies of economic exploitation coupled with population pressure and land scarcity produced what he terms agricultural involution, a system in which intensive use of land is based on higher labor inputs with diminishing returns.
Whereas Boserup and Geertz are occupied with land use strategies and their relationship with population pressure and the larger culture of the world system's political economy, the economic development literature on farming claims that there is an inverse relationship between small-scale and intensive irrigated farming and productivity per unit of land. Simply put, small farmers get more yield per unit of land than large farms (see Netting 1993).

Within these conceptual frameworks I examined the relationship between ethnicity and agricultural intensification in the Ziz Valley, in particular how Arabs, Berbers, and Haratine intensify and make land more productive. Upon the analysis of the data, I reached three major findings or contributions of the Ziz data to agricultural and social change. First, although the prevailing models of agricultural intensification explain some aspects of land productivity, these changes cannot be examined strictly as structural or ecological causes and must be understood as historically specific developments tied to the ethnic distribution and control of resources. Although the Ziz households conform to Boserup's cropping frequency index and its relationship to population pressure and to the worldwide trend seen in inverse relationships between area cultivated and productivity, my case study shows that productivity per unit of land is related to ethnicity.

The analysis of who makes land more productive revealed that different ethnic groups get different yields per area cultivated. Despite the unexpected finding that Berbers actually get more out of the same amount of land than Haratine and Arabs, and
the fact that the Haratine are not the most productive farmers as hypothesized in my
research design, this case study underscores the urge to reformulate the theory behind
agricultural intensification to incorporate the key variable of ethnicity and its role in
making land productive in the analysis of agricultural change. Thus, contrary to current
theories which examine social and economic change in terms of agricultural productivity
and crop complexes, my findings demonstrate that the same agrarian regimes in the
ethnically heterogeneous Ziz Valley differ markedly in production and intensity between
ethnic groups, and therefore provide household-level evidence that ethnicity is a key,
albeit a heretofore ignored, variable in the processes of economic and social
development.

Second, the academic study of ethnicity has dwelt too much on defining what
ethnicity is, erecting its boundaries, and outlining its multi-stranded emergences as
essential elements in the structuring of social organization between and among groups.
For Barth (1969:10), ethnicity, the boundaries of ethnic groups influenced by ecological
factors, and their collectivities “are categories of ascription and identification by the
actors themselves.” While Barth sees the production of ethnicity as the outcome of
transactions between groups and myriad interactions across ecological zones in
competition for economic niches, Despres (1975) contends that ethnicity is instrumental
in the shape of the ethnic groups corporateness, and this corporateness becomes more
solid and stronger, as much as competition for resources plays a critical role in the
generation of ethnic corporate organization of production. By contrast, McGuire
(1983:156), for instance, found that while the Yaqui Indians of Sonora, confronted by aggressive intrusions of the Mexican government and its refusal to accommodate their land demands, "the Yaquis do not instrumentally manipulate their group membership and identity, but neither do they sentimentally uphold the ideals and traditions of Yaqui culture and history."

In the Ziz Valley, however, with the infusion of remittances from abroad the Haratine have made ethnicity a political and economic instrument through which a Haratine corporate group has emerged to resist the old ethnic mode of production and domination. The combination of foreign cash turned into land acquisition has provided the Haratine with a solid political block in the community, allowed them participation in the politics of the village and the entire valley, and equipped them with an ethnic consciousness capable of refurbishing and innovating the old Berber and Arab stocks of traditions.

Although the above approaches to ethnicity shed light on various aspects on the place of ethnicity in the social organization of the means of production, they do not give it its full credit in playing a critical role in social mobility. Ethnic consciousness, though not in a primordial sense, at least for the Haratine, is "overcommunicated". Their attempts are realized at a time when the Haratine are accumulating the land of the declining traditional elite, and this fact gives the Haratine an opportune moment to overcome longstanding denial of privilege and misrecognition by the other groups. This fact provides the cultural ammunition and fortifies, if not sharpens, group feeling or
solidarity which is initiated by the concerns of those who are threatened with a loss of previously held power and privilege. The Haratine appeal to a common ethnicity created space for mutual aid. Ethnic identity as a Haratine is not just a category but implies a political instrument used to change the social and economic standings of the Haratine within the social stratification system of the oasis environment.

Ethnicity in the Ziz Valley is neither a “thing” nor a theory. It is a complex of creating new sources of power and re-arranging older elements of social organization of resources. What becomes clear is that the processes of generating ethnic identities are historically and regionally specific, or to use Comaroff’s reading of it:

[ethnic] identities are not “things” but relations; that their content is wrought in the particularities of their ongoing historical construction... And why there cannot be a “theory” of ethnicity or materialism per se, only a theory of history and consciousness capable of elucidating empowered production of identities (quoted in Lentz 1995:307).

However compelling the reasons for ethnic instrumentality for calculated interested, it still has to be worked out within cultural and historical terms of reference. For the Haratine, their shared history of landless and sharecropping represents genuine points of commonality and experience that ethnic consciousness backed by migration remittances and land accumulation have filled the cultural stuff reservoir to re-arrange the older terms of social stratification- a process involving a somewhat joined Haratine effort with different interpretations of the community’s traditions from those of the Arabs and the Berbers.

The interpretations of the community brings me to the third and final finding of
this dissertation—the fragmented nature of the villages’ communities and social mobility in the valley. The recent changes associated with the social and ethnic mobility of the Haratine at the expense of the other groups reveal an ethnic pattern involving a multiplicity of social actors and political networks with diverse intentions and interests, as described in Chapter VII.

The traditional ethnographies of North African and Middle Eastern villages describing the remoteness and isolation of subsistence farming communities are things of the past, and one wonders if they ever existed (Alberts 1963; Antoun 1972; Duvignaud 1970; Fakhouri 1987; Gulick 1955; Makal 1954; Stirling 1965). Although for the unseasoned observer the valley’s villages could be pictured and depicted as marginal and remote because they are separated from the highly urban and cosmopolitan Morocco and they occupy the barren “wastes” between the foot steps of the Atlas Mountains and the Sahara. Despite its remote and geographical enclave, the valley has always been and is still part of the larger society—from its medieval integration into the tran-Saharan trade to its insertion into the colonial and national economies. Although many an ethnography of “ethnically homogeneous villages” pay uncritical attention to the processual aspects of social change within the community and prefer to view the dynamics of socio-economic transformations within the social structure of the village’s community, I argue that social and culture change is actually more effective when initiated from the outside (see also English 1966; Miller 1984).

In contrast, ethnic change in the Ziz Valley, and for that matter throughout the
oasis social world of Southern Morocco, could not have risen from within the communities social structures, and the only avenue for the low status groups to change their lot in terms of political participation and access to land was to migrate outside the valley’s villages, return home with large sums of cash, and unlock the chains of ethnic stratification. The outside world, particularly urban centers and Europe, provided ample opportunities for the Haratine in which ethnic affiliation and clientele ties are permeable. As a Haratine migrant worker in France said, “In France, there is no you are a Haratine or Berber or Holy Arab, there is only work, work, and work, and after we are all friends, or, travail, travail, et camarade après.” Migration outside the oppressive conditions of the walled corporate communities of the oasis has been salient for the Haratine’s transition from the pre-colonial period of “the people without history” to the people with history. Armed with remittances, the Haratine have been engaged in appropriating the Berber and Arab cultural concept of al-aSl or land, and this has provided them with a multiplicity of cultural and power bases to restructure the old traditional cultural hegemony of the declining nobility.

Despite the community’s fragmented social relations, irrigation management remains communal, although it is becoming contentious. The landless, who are predominantly Haratine, provided labor for the main canals and the diversion dam, today refuse to work despite the fact that every able-bodied member of the community, irrespective of land ownership, must give a hand in the communal labor pool. Since most of the Haratine no longer believe that the system benefits them, which it does not since
they do not own any land, they resist participation in taking care of the irrigation infrastructure as need be.

In spite of the exploitative situation in which common property management is controlled, the social organization of irrigation in the Ziz Valley supports Netting's hypothesis in which resource tenure types use are held either under private or communal management. He argues that land types that are within the labor capacity of the household tend to be held and controlled under a private system. In contrast, resources that are beyond the labor pool of the household such as village irrigation infrastructure tend to be run and managed under communal arrangements. Village-based irrigation management, then, is a local adaptation strategy to resource maintenance and operation that private households cannot maintain on their own.

All these social changes have produced a place far different from the one that the oldest generation of the valley remembers. In less than four decades as an Arab farmer said, "if our ancestors would rise from their graves and walk among us they would not recognize the place they left. Everything has changed." In a place such as the Ziz Valley, it is absolutely essential to understand the forces impinging upon the behavior of households in terms of their interactions with resource exploitation and intensification. One must not limit his or her analysis to just the outside economic ties or simply to the local social structure and its localized ecology, but one must strive to link the outside factors with the local politics of ethnicity and ecology. Unless one blends the two theoretical approaches, the ethnographic reality and knowledge we translate into
anthropological works will only provide a fragmented and distorted representation. The challenge, then is to move research on how communities form and negotiate their terms of livelihood from the inside and outside dichotomy toward a multi-level analysis of the cultural means of social organization informed by theory, history, and validated by ethnographic and empirical data. Because all research remains an approximation to the real world of the farmer’s praxis, Ziz farmers will forever remain the experts of their farming and social world.

The villages of Kerrandou and Zaouit Amelkis (my native village) in the Ziz Valley, where I conducted my ethnographic project, are roughly a day’s journey from Rabat, Morocco’s capital. Upon establishing rapport with farmers for the performance of my questionnaires all farmers asked, “now then, we give you all the information and numbers about our houses and parcels, but what’s in it for us? What did you bring to us, or, did you come to take from us? Are you going to take our farming and village secrets to the Christians and the Americans? Are you going to help us with some aid in our struggle for existence in the valley?. However, all farmers were content to sit down for hours at a time to share their food, knowledge of farming, and the politics of social change sweeping the valley. Upon the completion of every interaction, farmers sent me home with a religious blessing and, of course, the obligation to write about their “miserable existence,” and because I was a native son of the valley my duty was to inform the government bureaucrats of their needs and ideas.

Because, in their eyes, I am an educated son of the valley, my responsibility for
relaying their messages to the government was even larger, and “I had no choice because it is my duty to the place that brought me to this world.” To extricate myself from the exigence of the ethnographic situation, I promised farmers that the implications of my research findings will underline their highlighted concerns and needs, in particular the central themes of communication between them and the government, credit, and the smoothing of the pastoralist process of adaptation to intensive farming.

Despite the fact that the valley’s farmers appear to be more productive than the national average, several factors limit their options. Patterns of resource control and distribution and water availability, rooted in the valley’s ethnic history, confound plans to expand farming operations or to change strategies. All the arable land in the valley bottom is fully allocated, and efforts by others to utilize what used to be communal land found outside the valley has been met with fierce resistance from village communities. For instance, outsiders who fled the devastating droughts of the 1980s bought and settled land in and around Kerrandou, only to discover later that they have bought contested and communal property from a powerful person of the area. Although these new settlers have turned the barren stretches of land into productive lands, much jealously has been expressed by the locals. The claims and counter-claims between the powerful man and his opponents have left the new settlers in a difficult position. Claims and their resolution take time to came to any verdict in the provincial system of dispute resolution.

Because of litigation problems and despite the fact that the new settlers have legal
titles to their farms, they continue farming with some restriction. These restrictions as provided by the area’s mayor, stipulate that the settlers cannot use modern technology such as tractors to boost the productivity of their land, although their fields are suited for it, and the only tools they can use are limited to the hoe. In the local parlance of resolving disputes “making noise will only exacerbate the difference between the settlers and the surrounding communities, and if the noise of motor pumps level is kept down a final resolution will be reached without resort to extreme measures such as invasion of private property.” As one newcomer said, “the government should attend to this conflict if they are serious about the development of the countryside. And if it is resolved once and for all, we can, with the help of God, make this part of Morocco greener and more productive.”

Similarly, recent droughts in concert with election campaigns have brought large numbers of pastoralists to settle into a sedentary life in the valley’s villages. Although they have been able to acquire land, their adaptation to farming has been very difficult, if not an obstacle towards the appropriate timing and seasonal coordination of farming activities. Their interaction with the agricultural extension service is lamentable, and begs for more understanding and communication to process the difficulties of pastoralist adaptation to farming. When pressed about the reasons for not helping the pastoralists in their transition from pastoralism to agriculture, the extension service professionals confessed that “for the dissemination of farming knowledge they need well-to-do farmers, and not newcomers for their agricultural experiments of wheat trials and other
chemical products."

Although pastoralists provide the opportune moment for the extension service to capture a generation of farmers in the making for the best simulation of their trails, extension agents are content to shoulder responsibility to others while making absurd statements such as "there are too many of them, but their percentage is small."

Pastoralists have the will to work, but face many obstacles in their transition to irrigated agriculture: the timing of planting and harvesting crops, methods of irrigation and application of manuring and fertilization, and above all the problem of working the land and leveling it. As one of the pastoralists confessed with shame, "I have big problems and pains with leveling my fields, even though I have asked other farmers and tried to learn from them about it. And that costs me just as a bus ride costs money."

In addition to these limitations facing the valley's agriculture, communication problems must be dealt with. Critical aspects of the Ziz farmers' subsistence system are structured by homemade organizations that manage agricultural resources from water control to village communal land. One need not delve deeply to appreciate the role of these corporate organizations, because their significance is ingrained in the rural Moroccan social fabric. Instead of seeking to replace the ecologically sound fragmented farming, we should encourage the most effective aspects of these adaptation strategies and, without excluding the interests of the newcomers or the pastoralist arrivistes and equity goals, expand their spheres of influence to enhance their integrative roles.
Almost every bureaucratic and agronomic report of the oasis environment ends its descriptive analysis by recommending that oasis farming has bright productive futures if only farmers would consolidate their fragmented and dispersed parcels or the establishment of _une politique de remembrement des parcelles_ (O.R.M.V.A.T. 1966). Land fragmentation has many benefits and must be understood within its ecological and historical contexts. As discussed earlier, Ziz farmers show a diverse and flexible farming system, a system which combines the cultivation of trees and crops. Development planners still confuse parcel fragmentation with poverty and drudgery: too many people create the right environment for parcel dispersion which, in turn, leads to the misery of the farming masses and agricultural involution.

Fragmentation of land is not an irrational system, but constitutes a sound system devised by farmer’s social organization to spread risk in the fragile environment of the Sahara Desert. It is a product of partible inheritance that provides for every member of the household, and this represents a safety net for heirs of falling into the ranks of the landless. As fragmented as the parcels seem, they also have a tendency to be combined through such social arrangements of borrowing, rentals, and of course the institution of marriage. The dispersion nature of parcels is also tied to the historical roots of the village community. As mentioned at the beginning of this study, upon division of village irrigated land, households were given parcels at different zones of the palm grove to promote an equitable distribution of good soils and growing conditions as well as to ensure the communal participation in the maintenance of the irrigation infrastructure. In
terms of crop scheduling, different crops occupying different parcels and zones spreads out risk, reduces labor bottlenecks, and assure stable production (Bentley 1986; Leach 1968, Netting 1974; Richards 1985).

Despite the increase in the use of commercial fertilizer to boost productivity, other concerns of farming such as locusts, sandstorms, and pestilence still determine the success or failure of crops and trees. A fragmented land use system, as analyzed earlier, allows farmers to practice a diverse farming system which has higher resistance to a broader range of stresses, droughts, pestilence, and blights. In so doing, despite their acceptance of biological and technological innovations, they have reduced the degree of dependence on outside inputs and institutions while maintaining a certain level of sustainable land management.

The alternative approach, a failure since it is not based on ecological or socio-economic data in most cases, involves limiting the scope of traditional institutions and knowledge for resource management. In the valley, as in much of rural Morocco, farmers are too often viewed as backward and not scientific. Comments such as “their fragmented fields should be consolidated for better and greater production” or that they “don’t know what farming is all about” reflect little knowledge of the social and ecological benefits of parcel dispersion in the valley, and show lack of willingness to take time to understand the logic of farming on the edge of the Sahara Desert.

Too many extension agents and policymakers view agricultural development through scientific lenses, disregarding existing local knowledge. This neglect of local
resource management knowledge has produced few benefits. In my view, a thorough
diagnosis of the organizational skills and knowledge of the local institutions is of
paramount importance if the government's agencies are to promote sustainable farming
futures in the face of the limiting environmental and social aspects of the oasis world.

The problem, as I see it, is one of farmer-planner communication. Information
exchange must be horizontal, not vertical (Pascon 1980:46-47). Technicians in rural
Morocco spend too much time dodging responsibility and not enough time seeking to
understand farmer perceptions and assistance needs. For instance, despite the
understanding of the role of credit in the promotion of the agricultural enterprise,
information on credit allocation and collection patterns are short of responding to the
farmer's needs. The Ministry of Agriculture and Agrarian Reform in concert with the
Ministry of Finance manage agricultural credit in Morocco, particularly the Agricultural
Credit Bank. A great deal of credit is also distributed through non-governmental
networks in rural Morocco. A common credit network involves verbal contractual
arrangements between merchants and farmers or between farmers, and sometimes it
takes the form of rahn or mortgage, although this is avoided whenever possible.

Of the surveyed households, 19 percent of farmers took credit from the
Agricultural Credit Bank. While most of this money was used to purchase farming
inputs or invested into some farming ventures such as livestock raising, cash crops and
land acquisition, some of it, contrary to the agreed norms of credit, found its way to
finance household social functions such as feasts and marriages. Although farmers see
value in credit (despite its un-Islamic usurious aspect) for the betterment of their economic situation, they complained that the timing of collection of their dues by the bank is erroneous and incontinent. While farmers are cautious in seeing their land being re-evaluated and declaring their titles as collateral for credit, they all complained that the bank officials come and collect their dues in the month of March. In March, "the land is dead, we are in the middle of planting other crops. The harvest time of crops is still way ahead in summer, but they insist on getting their money back. Please tell them not to come in spring. Because to repay them in March means that we have to liquidate investments we made on the basis of that credit, and we are the ones who will have to restart all over again, from below zero," a concerned farmer said. For these reasons, he continued saying, "even though God knows what's in our hearts and minds, we will not be unthoughtful and declare all our land in exchange for credit."

**Suggestions for Further Research**

The author's approach to the intricate relationships among ethnicity, agricultural intensification, and population density has necessarily been selective. Much remains to be done on topics beyond my theoretical and empirical concerns. One area where I have scarcely scratched the surface is the relationship between parcel location and agricultural production. Another potential area of research is linguistic analysis of ongoing ethnic transformations and the public debate surrounding the recent elections to political office in the valley and beyond.
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