

HESBAN 1

Sedentarization and Nomadization

Øystein Sakala LaBianca



HESBAN

Series Editors

Lawrence T. Geraty
Øystein Sakala LaBianca

ANDREWS UNIVERSITY PRESS



BERRIEN SPRINGS, MICHIGAN

in cooperation with the

INSTITUTE OF ARCHAEOLOGY
ANDREWS UNIVERSITY

SEDENTARIZATION AND NOMADIZATION:

FOOD SYSTEM CYCLES AT
HESBAN AND VICINITY
IN TRANSJORDAN

by

Øystein Sakala LaBianca
(Andrews University)

Managing Editor
Lori A. Haynes

Assistant Editors
Lorita E. Hubbard
Leona G. Running

Technical Assistants
James K. Brower
Oscar Canale
Larry W. Coyle
Tung Isaiah Duong
Sandra L. Penley
Eric Shults
Toni Stemple

HESBAN 1

Published with the financial assistance of the
National Endowment for the Humanities
and Andrews University.

A joint publication
of the
Institute of Archaeology
and
Andrews University Press
Berrien Springs, MI 49104

© 1990
All rights reserved. Published July 1990.
Printed in the United States of America.

96 95 94 93 92 91 90 7 6 5 4 3 2 1

ISBN 0-943872-00-6
Library of Congress catalog card number 89-082543

Chapter Eight

Intensification and Abatement: Summary and Reflections

Introduction

In concluding this study the following questions will be considered: What were the transitions, in terms of changing configurations of food system conditions, which occurred over the past three and half millennia at Hesban and vicinity? What were the mechanisms of intensification and abatement accounting for these transitions? In what ways did food system configurations differ in each millennium and how were they the same? What are the strengths and limitations of food system analysis? What are some implications of this undertaking for research and planning concerned with the future of Jordan and its people?

Over the past three and a half millennia, the project area food system reached variously constituted high-intensity food system configurations at least four times (see fig. 8.1): during the 7th and 6th centuries B.C. (Iron II Period), during the 3rd through 6th centuries A.D. (Late Roman and Byzantine periods), during the 12th and 13th centuries A.D. (Ayyubid-Mamluk periods), and since ca. A.D. 1950 (Modern Period). A closer look at the processes of intensification and abatement which led up to and followed each of these peaks will serve to illustrate how sedentarization and nomadization occurred from one millennium to the next within the project area.

Overview of Food System Transitions

Iron Age Millennium

At the beginning of the Iron Age millennium (ca. 1200 B.C.), a low-to-medium intensity food system configuration prevailed. Apart from a few permanent cereal-farming settlements such as

those which existed at Jalul, El 'Umeiri, and Iktanu, the prevailing form of landuse consisted of pastoralism involving transhumants who specialized in raising large flocks of cattle and sheep on the fertile pastures of Hesban and vicinity. Gradually over the ensuing centuries, farmsteads were established in the vicinity of certain of the larger permanent settlements, first in the northern hills and along the plateau ridge, then later on also in the western descent. With these farmsteads came increased production of grapes and olives and other tree fruits. This process of sedentarization and population growth reached its high point during the 7th and 6th centuries B.C. This is evidenced by the large number of farmsteads dated to these centuries throughout the project area, by the impressive undertakings related to water collection and storage at places like Hesban, and by the evidence of bureaucratization (in the form of Iron II cylinder seals and scarabs from Tell Hesban) of certain activities related to the maintenance of the socio-political infrastructure during this period.

Among the large number of cooperating factors which played a role in fueling the power drive during the Iron Age millennium, four have been identified archaeologically that deserve further research. First was the emergence within the project area of a new pattern of rural-based craft specialization and economic exchange similar to that which was emerging elsewhere throughout the ancient Near East during this millennium. At Tell Hesban, for example, a flourishing textile industry thrived throughout this millennium. This pattern contrasts with the situation which existed throughout the ancient Near East during the previous millennium, when craft specialization was primarily an urban as opposed to a rural-based phenomenon.

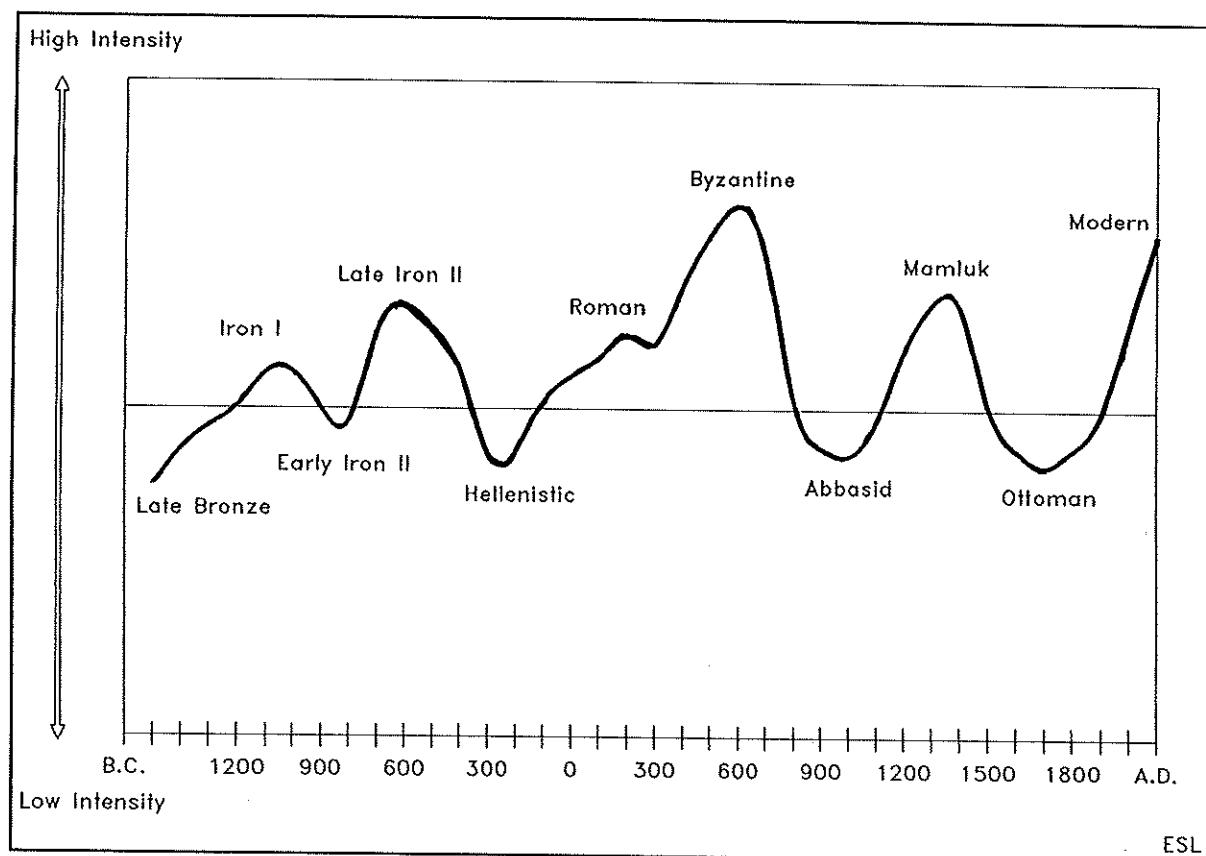


Fig. 8.1 Temporal variability in intensity of project area food system: a first approximation

A second factor that played a crucial role in harnessing the rural population to producing food surpluses was the formation of local state governments (in Israel, Ammon, Moab, and Edom) with kings and armies on both sides of the Jordan during this millennium. While throughout most of the Iron Age millennium, the project area remained politically unstable as a result of successive wars between these various local kings or between them and warlords from Egypt or Mesopotamia, Transjordan appears to have enjoyed its longest and most peaceful period politically following the rise of King Mesha to the throne of the Moabite Kingdom. Over the next two centuries, the bureaucracy and socioeconomic infrastructure needed to further intensify the rural economy was improved to the point where a high-intensity food system configuration could be maintained. The modest delocalization of the diet at Tell Hesban during the Iron II Period no doubt reflects the region-wide trade in foodstuffs which occurred during these latter centuries of the Iron Age millennium.

A third factor was the increase in long-distance trade along the King's Highway and other international trade routes in use in Transjordan during the Iron Age millennium. Not only was such trade promoted by local kings, such as King Solomon of the Israelite Kingdom, as in earlier centuries, the Transjordan trade corridor continued to be useful to merchants from both Egypt and Mesopotamia as well. That traffic along the King's Highway reached a high point of some kind during the Iron II Period is likely, given the relatively secure conditions which prevailed during those centuries (cf. Eph'al 1982).

A fourth factor which played a role in facilitating the establishment of farmsteads and villages on natural hills and slopes away from readily available sources of water, such as springs and streams, was the spread within the project area sometime early on in the Iron Age millennium of plastering techniques whereby cisterns could be effectively sealed for use in year-round water storage. Not only did such techniques facilitate the establishment of permanent settlement at Hesban,

but numerous other sites which were similarly distant from springs or streams were also settled for the first time during the Iron Age, particularly in the eastern plain, northern hills and along the plateau ridge in places where readily available sources of spring or stream water did not exist. That similarly effective plastering techniques were not widely used during the Early Bronze Period, when the project area was undergoing an earlier power drive, is evident from the survey finds which locate most of the sites from this period near readily available sources of water, especially in the slopes along the western descent.

The high-intensity peak which was reached during the 7th and 6th centuries B.C. was followed by a period of abatement during most of the Hellenistic Period, involving a return to a low-to-medium-intensity configuration which lasted until the 1st century B.C. While a few cereal villages may have remained in existence throughout most of this period, especially in the northern hills region in the hinterland of the city of Philadelphia (Amman), transhumant pastoralism appears to have prevailed throughout most of the rest of the project area. Among the factors which very likely contributed to this abatement was the collapse of the state apparatus which had promoted and nourished the power drive during the immediately preceding centuries. Along with this collapse came decreased security for people and their belongings, leading to less regular traffic along the international trade routes which ran through or adjacent to the project area. Under diminished public security and lost opportunities for trade and exchange, the local population which remained was forced to turn back upon their own resources. This included a return to subsistence-oriented production of cereals and small flocks of sheep and goats in such readily defendable locations as those which exist in the northern hills and along the plateau ridge.

Greco-Roman Millennium

Between the 5th and the 2nd centuries B.C. such low-to-medium intensity configurations remained the status quo throughout the project area. During these centuries, Tell Hesban, for example, is described by its excavators as undergoing an "occupational hiatus," although its caves, ruins, and cisterns were no doubt being used seasonally for

sheltering and watering by certain of the shepherd households still making a living within the project area. By the end of the 2nd century B.C., a foothold was established by the Greeks within the project area. Not only can these Hellenized soldier-farmers be recognized by the discovery of Greek pottery in the fortified settlement they established at Hesban, their eating habits give them away as well. This resettlement signals the beginning of another power drive—a drive which has not been equaled in its peak intensity by any before it or after it, including the most recent one.

Over the centuries which followed the initial establishment of Hellenized cereal farmers at Hesban, several intertwined paths of development took place within the project area. On the one hand, there was the path pursued by Hellenized and Romanized elite which gradually led to the establishment of urban-oriented, moisture-maximizing agriculture on a grand scale. On the other hand there were the paths chosen by the rural masses, some of which led to close and intimate cooperation within the Greco-Roman production regime, others which led to pastoral-oriented production regimes emphasizing autonomy and self-sufficiency as a counter measure to increasing disinheritance and alienation experienced at the hands of the urban elite.

As in the earlier Iron Age, the process of sedentarization began with cereal farming centered in fortified villages and farmsteads on the plateau. Resettled were most of the farmsteads and villages which had originally been settled in the previous millennium, plus several new ones. As subsistence farming of cereals gave way to increasingly urban-oriented fruit, vine, and vegetable production, settlements increased in size and number along the plateau ridge and especially along the well-watered slopes and valleys of the western descent. In these areas aqueducts and terraces were constructed on a scale never before seen in this region, especially during Byzantine times. Not only were mules and donkeys raised in large numbers in order to supply draft power along these terraced slopes and hill-sides, swine and poultry were also produced on a large scale, especially during this same period, to compensate for the diminished availability of meats from pasture animals. In order also to increase the water supply on the plateau, massive reservoirs were built on a grand scale in wadis running nearby or at the foot of densely settled hilltop

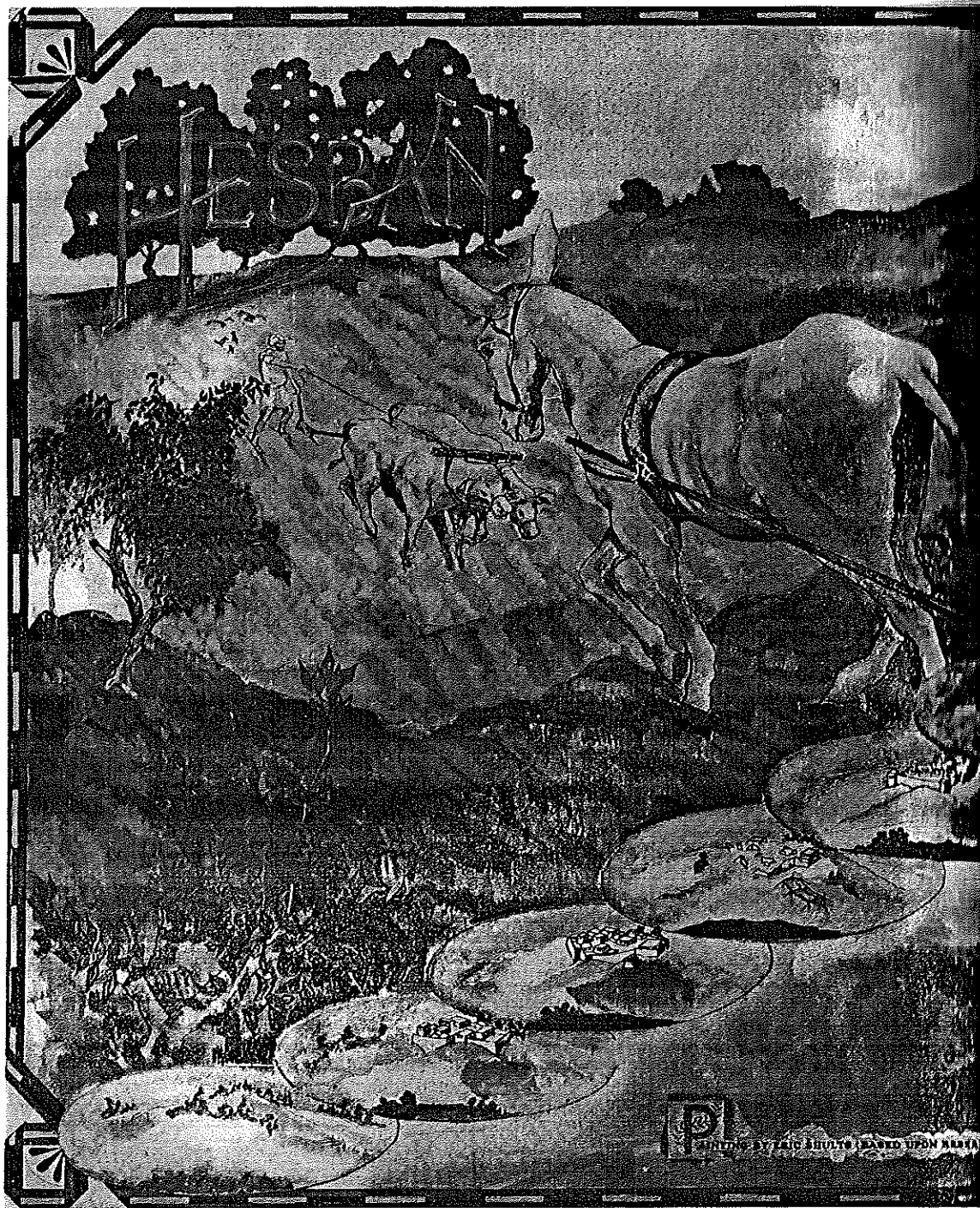


Plate 8.1 Cycles of intensification and abatement at Hesban. Portrayed in this painting are changes over time in types of settlements over which existed at Tell Hesban. The 13 ascending circles represent successive historical periods over the past 3,500 years. The agricultural scenes represent predominant methods of food production on the fields surrounding this tell and include producing cereals in the plains and wadi bottoms, growing vine and tree crops on terraces and slopes, raising flocks of sheep and goats, and being camel pastoralists.

Three major cycles of settlement and landuse have occurred at Tell Hesban and vicinity. At the beginning of each cycle, predominant methods of landuse were cultivation of cereals and raising of sheep and goats. At the peak of each cycle, when settlement was most intense, vine and tree crops played an important role as well. In the periods between each cycle, when settlement was least intense, pastoralists utilized Tell Hesban and vicinity on a seasonal basis.

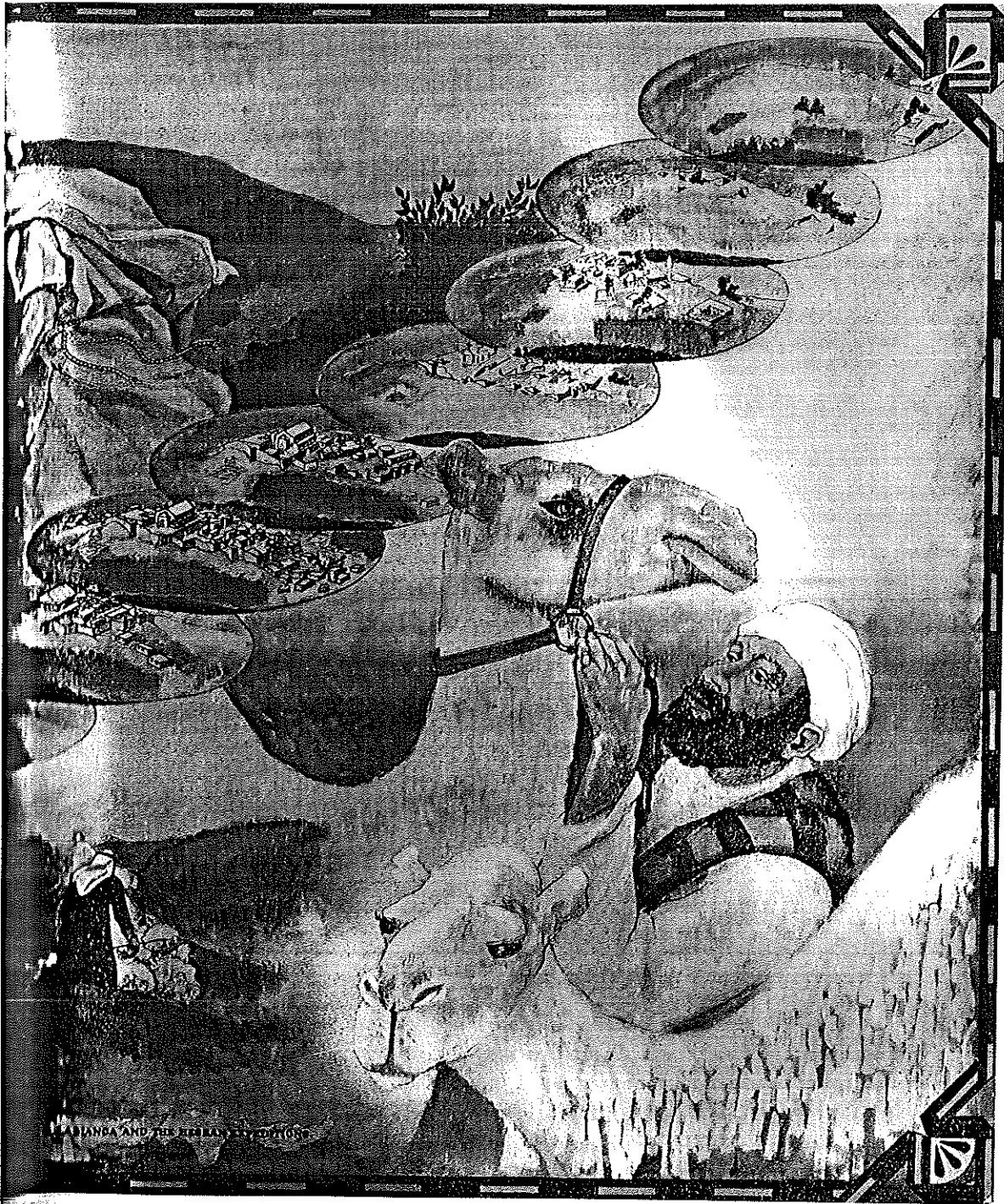


Plate 8.1 Cycles of intensification and abatement at Hesban (*continued*). The first cycle began about 1200 B.C. and ended about 500 B.C. This cycle corresponds to the Iron Age and is represented by the 2nd (Iron I) and 3rd circles (Iron II) on this painting, starting from the bottom left corner. The second cycle began about 200 B.C. and ended about A.D. 750. It corresponds to Roman-Byzantine-Umayyad times and is represented by the 5th through 9th circles (Late Hellenistic, Early Roman, Late Roman, Byzantine, Umayyad). The third cycle began about A.D. 1200 and ended about A.D. 1450. This corresponds to Ayyubid-Mamluk times and is represented by the 10th circle.

The 1st (Late Bronze), 4th (Late Persian-Early Hellenistic), 10th (Abbasid and Fatimid) and 12th (Ottoman) circles represent times when there was little or no permanent occupation of Tell Hesban. The 13th circle represents the present-day resettlement of the tell by members of the Ajarmeh tribe.

villages and towns, as in the case of Madaba and Hesban. Along with major highways, such as the *via nova Traiana*, subsidiary roads were also built, some of these serving individual estates and farmsteads as well as local villages and towns.

As these changes were taking place certain members of the rural population appear to have followed a different course involving a quest for self-sufficiency and independence from the Greco-Roman power drive. Thus, while Hesban (now called Esbus) and certain of the other villages along the plateau ridge entered upon a phase of growing urbanization and delocalization of the food supply during Late Roman times, certain of the farmers in the hinterlands to the east appear to have gradually abandoned their lands either to settle in the towns or to return to transhumance. By Byzantine times, therefore, as a consequence of the ubiquitous spread of permanent settlement and moisture-maximizing agriculture, those segments of the population having returned to pastoral pursuits as their primary occupation were pushed further into the desert, judging from the fact that their contribution to the local economy gradually fades during the period.

Five transforming influences must be reckoned with in accounting for the power drive which occurred during the Greco-Roman millennium. Each of these represent, in various ways, a steady advance of new opportunities for the people of Transjordan in general and of the project area in particular. To begin with, the Hellenization of Palestine revitalized international trade routes and certain strategically located caravan cities along the Transjordanian highland, including Philadelphia (Amman). Second, the sedentarization of the Nabataean Arabs to the south resulted in remarkable advances in moisture-maximizing agricultural techniques, which laid the technological foundation for the advance of such agriculture also within the project area. Third, the Romanization of Palestine resulted not only in improved public security in rural areas through the establishment of Roman military forts along the eastern frontier of the country, but also in heightened bureaucratization and delocalization of the food system, increased craft specialization, urbanization and trade. Fourth, the Christianization of Palestine during Byzantine times further strengthened the infrastructure put in place by the Romans. Additionally, European wealth began to be pumped into the local economy

by pious believers and pilgrims in the form of donations toward the construction of churches, monasteries, and memorials in places like Nebo, Madaba, and Hesban. Fifth, all of the above led to continual population growth which, in turn, steadily heightened the pressure on local farmers for intensified food production.

Among the many cooperating factors which eventually led to the collapse of the Greco-Roman power drive, at least two may be attributed to the shortsighted policies of the Hellenized and Romanized elite. First is the gradual disinheritance and alienation of certain members of the rural population, which began during the Early Roman Period and continued until the end of the Byzantine Period. This situation would account for the continuous process of nomadization which occurred side-by-side with the sedentarization promoted by the Greco-Roman elite in the region. As a consequence of this, a large reservoir of nomadized peoples was built up in the Arabian desert. It was the energies and disaffections of these peoples which Muhammad, under the banner of Islam, was able to harness in mobilizing the Arab conquest of Palestine and the rest of the Middle East during the 6th and 7th centuries A.D.

Second is the gradual worsening of the lot of the rural farming population of Palestine during the 2nd and 3rd centuries A.D. (cf. Sperber 1974). As a result of increasing taxation and bureaucratization of production, formerly free peasant proprietors were forced to become servile tenant farmers. As the demand for food surpluses by the increasingly urbanized populace escalated, shortages became more frequent both in the countryside and among the subservient classes in the towns. This, we may conjecture, led to increasing prevalence of malnutrition and weakened resistance to disease among a large segment of the populace. At the same time, the spread of infectious disease agents was facilitated by the delocalized food supply which heightened the chances of disease agents from distant places reaching the population in places like Hesban. It was, very likely, this synergism of social and biological factors that set the stage for the sudden demographic collapse which appears to have occurred during the 6th and 7th centuries in Transjordan.

A third factor which deserves to be mentioned is the impact of repeated earthquakes and droughts on the stability of the Greco-Roman pro-

duction regime. While such natural hazards had existed in Transjordan during previous millennia, the extent to which the Greco-Roman regime depended upon large reservoirs and aqueducts for its water supply would have made it more vulnerable to temporary setbacks resulting from earthquakes or successive years of drought. While such setbacks could be overcome as long as a sufficient supply of laborers was on hand to make repairs or haul water, when this supply was diminished due to weakening of the state's coercive powers and other causes, the work of repairing these massive structures would have fallen short of what was needed. This, in turn, heightened the problem of providing sufficient water for future generations, thus further intensifying the accumulation of hazards with which the populace had to cope.

Finally, the gradual loss of income from pilgrims and believers in other parts of the world, which took place following the Islamic conquest of the Holy Land, along with the shift from Damascus to Baghdad of the political center of Islam under the Abbasids in A.D. 750, added further to the problems of the sedentary population of Transjordan. These circumstances, with those mentioned above, worked together to bring back a low-intensity food system configuration within the project area by the end of the 7th century A.D. Basic to this configuration was, no doubt, the camel which by this time had become a favored animal by the nomadized Arabs of the Arabian desert. As in Late Ottoman times, however, configurations involving various combinations of sheep, goats, camels, and limited cereal cultivation by tribal peasants and transhumants was very likely the prevailing pattern. Very little in the way of direct evidence of what the food system was like between the 7th and the 11th centuries A.D. is on hand from the project area, however. What is known is that neither at Tell Hesban nor in the surrounding project area is there any architectural evidence that has been firmly dated to these centuries, either in the form of ruins of settled towns, villages, or farmsteads. This situation reflects that of central Transjordan as a whole during the Abbasid, Fatimid, and Seljuq-Zengid centuries (Sauer 1980).

Islamic Centuries

Between the beginning of the 12th and the end of the 14th centuries A.D. another power drive

completed its cycle within the project area. While in intensity the Ayyubid-Mamluk power drive was much less powerful than the previous Greco-Roman one, it reached a medium-to-high configuration in terms of food system conditions. Hesban itself appears to have been a regional market center of some importance, judging from the intensity of rebuilding and the extent to which the tell as a whole was settled. At its high point the town consisted of a cluster of *qusur*, each with its own courtyard. One of these buildings included a bath complex requiring about six attendants for its operation (de Vries 1986). While these *qusur* were probably the residences of the elite, the majority of the town's inhabitants very likely lived in less expensive buildings and caves.

As most of the settlements during the Ayyubid-Mamluk period were along the plateau ridge and in the northern hills, it seems that a mixed agropastoral production regime emphasizing sheep, goat, and cereals prevailed during this period. Particularly abundant in our finds, in fact, are sheep and goats, although poultry appears also to have been raised in large numbers. The degree to which the diet was delocalized (fish from the Gulf of Aqaba are abundant in the finds from this period) and the presence of a rich variety of coins and other market-related items from the tell give further evidence of its regional importance.

Three factors must be considered to account for the intensification peak which was reached during the Ayyubid-Mamluk period. The first of these was the new opportunity for trade and commerce which followed in the wake of the revival of the eastern caravan route during the preceding Late Fatimid Period. A second factor was the occupation of portions of Syria, Palestine, and Transjordan by the Franks, which provided a common threat against which the indigenous tribesmen had to unify. Thus the stage was set for the emergence of a great hero, namely Saladin, under whose leadership greater Syria was liberated from occupation by the Franks. A third factor was the earlier gains of the Arab agricultural revolution which could be capitalized upon by the population in this area now that markets were again expanding.

To account for the abatement which followed this peak, three factors are of particular importance. The first was the weakening of the Mamluk Sultanate's central administration, which led to loss of resolve in the task of protecting trade and the

agricultural hinterlands of the Eastern Mediterranean. The second was the invasion of Palestine by the Mongols, which resulted in devastation of Damascus and other important administrative and commercial centers throughout Syria. The third was the plague, which in the 14th century decimated a large percentage of the population of Palestine and Syria.

As a consequence of these events, a low-intensity food system configuration gradually established itself again within the project area. This system was presided over by the Ottoman Turks, who occupied Palestine from the beginning of the 16th to the beginning of the 20th century A.D. It involved movement of people and animals between pastures in lowland areas such as the Ghor and the eastern desert and various campsites and cave villages located in the highlands surrounding Tell Hesban. To the various transhumant tribesmen who vied for control of the project area, the reservoirs, cisterns, caves, and ruined buildings left by the Greco-Roman and Ayyubid-Mamluk cultures represented resources which had their own meaning and use within their economies and lifestyles. Such installations provided temporary places for sheltering their families and watering their herds, and in many instances ruins on top of mounds and hills were utilized to construct rude burial grounds and storage depots.

Modern Period

The most rapidly advancing power drive to take place within the project area is the present one which began about 150 years ago. Although in terms of density of villages and farmsteads and in terms of the spread of moisture-maximizing agriculture the Modern Period has not yet surpassed what existed during Byzantine times, it is only a matter of a few decades before it will, assuming that population growth and agricultural development continues at its present pace. Already a high-intensity configuration has been reached in terms of food system conditions, including the sedentarization of most of the local inhabitants and extensive undertakings in such areas as water management, road construction, market-oriented production of crop and animal products, and delocalization of the diet, especially in the larger villages and towns. Outstanding among the factors which account for this intensification are the role

of the state in introducing the infrastructure necessary in order to support a high-intensity configuration, the new opportunities for trade and exchange which have come with the rise of world capitalism, and the massive influx to Transjordan of skilled agricultural labor which resulted from the wars with Israel.

Configuration Differences and Similarities

Having presented an overview of the food system transitions which occurred over the past three and a half millennia within the project area, and some of the factors contributing to the completion of the Iron Age and the Greco-Roman cycles, we shall next briefly consider some ways in which the food system configurations prevailing during these different millennia were alike and differed from each other in how they were constituted. Rather than attempting to state all of the various ways in which differences and similarities occur, the aim here is to highlight certain outstanding examples in order to orient to the type of insights which may come from such an undertaking.

One dimension along which temporal differences may be noted is that of water provisioning. Here is seen an instance of a cumulative development of sorts in terms of increasing capacities for supplying water. Thus, during the Iron Age a major improvement over the preceding millennia was the spread of plastering techniques which enabled people to settle year-round in locations which had no nearby source of running water. While cisterns continued to be built and used by the Romans, their power drive required even larger capacities for water provisioning which led to the widespread construction of reservoirs on the plateau and aqueducts in the western descent area. During the Modern Period, cisterns continue to be used in rural areas, but not reservoirs. What has been improved in the present era is people's capacity to exploit sources of water lying deep below the surface. Thus, by means of mechanical pumps, water is today being transported from underground aquifers or from springs to villages and fields on the plateau.

Another dimension along which temporal differences may be noted is that of the habitation of the farming population during high-intensity configurations. During the Iron Age, for example, fortified farmsteads inhabited by only one or a few

households appear to have been the prevailing pattern whereas, during the Late Roman and Byzantine periods, the farming population appears to have been concentrated in large estates, villages, and towns. Today villages serve as the principal place of residence for the farming population.

That temporal differences existed along a number of other dimensions between same-intensity configurations can safely be assumed. As research progresses it will no doubt be possible, for instance, to identify a number of ways in which transhumance differed during each of these millennia. For example, that the camel played a more important role among pastoralists during the Islamic centuries than it did for pastoralists during the preceding ones (during which the donkey and mule very likely were relied on more for hauling purposes) has already been suggested.

Whereas temporal differences such as these will come more clearly into view as the particulars of each millennium and of each different configuration occurring within them are brought to light, continuity from one millennium to the next exists primarily at the general level of the three models presented in Chapter Four, namely between the conditions which characterize low-, medium-, and high-intensity configurations, respectively. Thus, high seasonal variation in location and intensity of the human population is a situation which recurs in various ways within the low-intensity configurations of all three millennia. In the case of medium-intensity configurations, an emphasis on field crops of different kinds and settlement in variously fortified residences appears to have recurred as well from one millennium to the next. At the level of high-intensity configurations, delocalization of the diet in various ways can also be counted on across the successive millennia. To these many others could be added. An example would be the link between tribalism and low-intensity configurations and that between centralized governments and high-intensity ones, and so on.

When an attempt is made to compare the rate at which the processes of sedentarization and nomadization occurred across these successive millennia, the impression is gained that the former process tended to occur at a slower rate than the latter. Thus, on the one hand, for the Iron Age power drive to reach its peak it took at least four centuries, and for the Greco-Roman one at least three centuries were needed. The abatement proc-

ess, on the other hand, took less than two centuries in both instances. An exception to this pattern is the modern power drive which has occurred at the unprecedented speed of less than a century.

The reason why this difference should exist in the case of the preindustrial rates is actually quite simple. It has to do with the fact that to build the infrastructure needed to support high-intensity configurations required both planning, material resources of various kinds, and large amounts of labor, whereas to reverse such a power drive all that in theory would be required would be a severe natural event such as a prolonged drought, an earthquake, or a plague. A massive military assault aimed directly at disabling the infrastructure upon which a particular high-intensity configuration rested would have a similar effect.

This point leads back to a proposal stated in Chapter Two regarding the difference between the processes of sedentarization and nomadization as general sociocultural phenomena in the Middle East. It was suggested there that whereas the process of sedentarization tends to be directly promoted by the policies and actions of a state apparatus of some sort, the process of nomadization is best understood as a form of resistance, a sort of natural response by the rural population to the shortsighted and often exploitative undertakings of those at the center of sedentary power. Rather than being a process that is deliberately instituted by pastoralists, it represents instead a form of escape, a return to greater independence, and a distancing on the part of some members of the rural population from the cultural and economic domination of sedentary elites.

This ability to choose alternative actions, to remain resilient in the face of hazards and changing social conditions, has traditionally been valued by the rural populace of the Middle East. It is precisely because of such orientations that metaphors based on the unilineal principle of kinship have tended to play an important role in structuring social relations among cultivators and shepherds alike. Not only have such metaphors facilitated the process of organizing people at various levels, whether it be the household, the village, the camping unit, or the tribe, they have also served to enable the changing organizational needs which tended to arise as individual households moved back and forth along the mobility continuum between nomadic and sedentary. It is

not surprising at all, therefore, that whereas various forms of state organization have come and gone throughout different times and regions of the Middle East, tribal organization in various forms has remained a constant since recorded history, even to the present day.

A matter requiring further study is the extent to which the repeated oscillations between low- and high-intensity configurations in Transjordan might be attributed to the cooperative effect of the persistence of tribalism as an indigenous risk-management institution and the relatively greater degree to which this region is prone to droughts than is nearby Cis-Jordan. In other words, given that droughts are likely to occur more frequently and for longer periods along the Transjordanian highland than along the highlands and plains to the west of the Jordan River, to what extent has this situation heightened the persistence of tribalism in Transjordan and, as a consequence of this, resistance to power drives promoted by would-be builders of nation states? Could it be that the transience of high-intensity configurations in Transjordan is a consequence of stronger pull toward low-intensity food system configurations exerted by the collective will of the indigenous population of this region, given the greater challenges to survival presented by Transjordan as a natural habitat?

Of relevance in regards to these questions is the fact that in every historical instance involving a high-intensity food system configuration in Transjordan, including the present, the region has been integrated economically and politically with other, less vulnerable regions as a buffer against the inevitability of drought and the threat of famine. In other words, in order to overcome traditional resistance to power drives, Transjordan's rulers have historically needed to rely on bonds of friendship and economic cooperation with other states as a fundamental prerequisite of sustained development and stability. To the extent, therefore, that such relationships were able to ward off the effects of locally recurring droughts and other natural hazards, high-intensity food system configurations have survived.

Conclusions

Finally, a few remarks are in order regarding the limitations and strengths of the concept and

method of food system analysis by means of which the present investigation of sedentarization and nomadization in Transjordan has been carried out. Following are some ways in which this perspective has facilitated the present undertaking.

First, the delineation of five archaeologically traceable parameters of the food system organized our analysis and discussion throughout this study. Second, the perspective served to focus attention on the recent past within the project area as a means to become acquainted, in a heuristic sense, with the workings of the local food system. Third, our acquaintance with the recent past enabled the formulation of procedures for converting archaeological information from Tell Hesban and vicinity into data about food system conditions throughout the past. Fourth, this acquaintance with the recent past also facilitated the formulation of a hypothesis setting forth three models or configurations regarding how the archaeological data about food system conditions in the past could be expected to be correlated under different states of intensity of the food system. Fifth, this perspective offered a unified framework for examining change over time in the intensity states of food system configurations from one period to the next. Sixth, it provided an orientation to a number of mechanisms whereby temporal changes from one food system intensity state to another could be accounted for. Seventh, insofar as this perspective focused attention on the interaction of environmental and social conditions in people's quest for food, it served to bring to light some possible explanations for the transience of high-intensity food system configurations in Transjordan. And eighth, as a result of all of the above, integration was possible of a wide range of lines of research and information which in the past have tended to progress in isolation one from another.

Several important limitations of the food system approach need also to be stated. To begin with, there is no necessary connection between adherence to a food system framework and some form of uniformitarianism or some species of environmental or historical determinism. As has been emphasized many times throughout the foregoing pages, the use of this perspective has been as an aid to integration and interpretation, in a heuristic sense, of the diverse lines of research generated by multidisciplinary archaeological undertakings such as the Heshbon Expedition.

Another limitation of the food system approach is that it is not equally applicable everywhere. It has worked well in this particular case because the empirical context has been primarily a rural one where the quest for food has been a fundamental and pervasive activity structuring the lives of the local population throughout most periods. Where, for instance, the empirical context involves an industrial setting of some kind, or a place of ritual or worship of one sort or another, other frameworks are likely to be needed, although to the extent that the quest for food, or symbolic behaviors related to this quest accounts for at least a portion of the daily activities of populations in such places, the present perspective may be useful.

A third potential drawback with this approach is that, even where the quest for food constitutes a fundamental and pervasive activity, other activities not directly related to this quest may be overlooked as a result of this focus. While this need not become a problem, it is one that deserves a note of caution.

In addition to these limitations of the food system perspective, shortcomings having to do with the nature of the empirical materials available must again be noted. For example, neither the excavation results nor the survey results were such that reliable estimates of project area population sizes and characteristics could be ascertained for the various historical periods. Such estimates would obviously have been useful in helping to answer questions regarding the causes of food system intensification and abatement. Not even the extant analysis of the human skeletal remains from Hesban and nearby cemeteries was of much help in this regard.

In planning for the future well-being of the people of Transjordan, much can be learned from continued research concerned with the country's food system. We have noted already some of the potential dangers inherent in power drives leading to high-intensity configurations, including the tendency toward environmental degradation and nomadization as a traditional response to policies perceived to be stifling to the traditional emphasis on resilience through diversified household economies. We have also noted the connection between the survival of high-intensity food system configurations and leadership capable of building and maintaining broadly based ties of friendships and economic cooperation.

To what extent these lessons from the past are applicable to planning for the future is an important question. Certainly there are some lessons to be learned from the Nabataean ancestors of the present population whose moisture-maximizing agriculture survived for centuries after their eclipse as monopolizers of the Arabian caravan trade. The widespread use of large reservoirs by Transjordanian peoples during Roman times is another practice worthy of consideration in planning for the water needs of Jordan's population in the future. Much can also still be learned from closer examination of the traditional risk-management strategies of Jordan's rural families whose traditions have enabled them to survive despite wide fluctuations in the region's political and economic integration over the past centuries. In deepening our understanding of concerns such as these there is much room for cooperation between scholars and scientists knowledgeable about Jordan's past and national leaders concerned with the country's present and future.