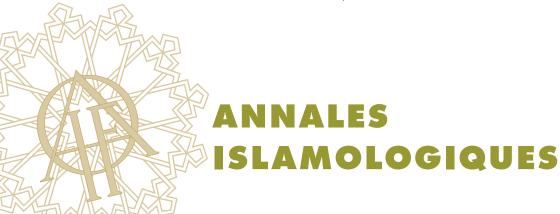
MINISTÈRE DE L'ÉDUCATION NATIONALE, DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE



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AnIsl 46 (2013), p. 95-114

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The Agricultural Dimension of Imperial-Peasant Relations in Mamluk Jordan

ONFLICTS between rural society and the Mamluk state centered on access to the state's most important resource: the land. The Mamluks' tax base was its land; any interruption of agricultural production, and particularly that of grains, inevitably affected state revenues and, ultimately, their military and political stability. Thus, ownership of and access to land and control of cropping strategies, tax revenues, and agricultural markets were important factors in the way the state asserted its control over peasants. It would be a mistake to assume, however, that peasants were always passive participants or necessarily victims in the Mamluks' exploitation of its rural resources. Attempts at cooption and coercion on the part of the state were balanced by successful efforts at cooperation and resistance by local villagers and tribesmen. Relations between imperial and rural actors were complex and contributed alternatively to both the expansion and retraction of the agricultural sector in the Mamluk period. The changing fortunes of Jordan in the late fourteenth and fifteenth centuries C.E., a period considered an important political and economic turning point by Mamluk historians, can be related on many levels to the political tugs of war between the state and local peasants. In examining the multifaceted encounters between the Mamluk state and the peoples of its Transjordanian territories, important patterns in conflicts over land become apparent, suggesting, in turn, ways in which the economic, political, social, and demographic changes of the late Mamluk period played out on the local level.

1. There was no "Jordan", of course, in this period. For the sake of convenience, the terms "Jordan" and "Transjordan" will be used interchangeably in this text in reference to the region east of the Jordan River to the *bādiyyah*, and south from the Yarmouk River to the Gulf of Aqaba. Contemporary Arab historians refer to this region as "Sharq al-Urdunn". The peoples of this region are herein referred to as "Jordanians".

This paper is concerned with two related phenomena. The first is the centrality of land in Mamluk policies in the Transjordan and the regime's relations with local peoples. Written and archaeological sources suggest that rather than being passive participants in the Mamluks' agricultural regime, Jordanian peasants did, at times, assert control over their own natural resources and markets. Vicissitudes in rural administration; al-Nāṣir Muḥammad's cadastral survey; the large-scale endowment of Jordanian farmland as waqf in the late fourteenth century; and the shift to local markets and locally-controlled planting strategies by the fifteenth illustrate ways in which land was key to the changing power relations within the Mamluk elite and with local society. The second theme of this paper addresses the "decline" of the Mamluk state from the perspective of developments in the local agricultural regime, changing relations between producers and the state, and migrations of populations in Jordan, which were driven, in part, by regional political conflict and economic necessity. Viewed within the larger context of landscape development and climate change, it is argued that the "decline" of the fifteenth century is better understood as one of "rural transformation", as the relationships among the state, peasants, and the land itself were redefined.

In *Annaliste* terminology, the changes in the agricultural economy and land tenure (conjoncture) that sprung, in part, from political events (événements) of the turn of the fifteenth century must be interpreted in the context of more permanent reference points, such as very gradual and long-term developments in climate, landscape, and culture (la longue durée).³ These imbedded structures, each operating according to its own rhythm and momentum, together account for shifts in settlement and other important changes that transformed the late medieval Levant. For this paper, then, it is the rural sphere that becomes the locus of contestation and collaboration and provides a backdrop for the assessing the trajectories of the final century of Mamluk rule.

The Rise and Fall of Mamluk Jordan

At the eastern border of the Mamluk empire and constituting two of its provinces (Mamlakat Karak and the southernmost district of Mamlakat Dimašq), today's Jordan was of great strategic and economic importance to the Mamluk state. In the mid-thirteenth century Ayyubid princes still retained castles there, and the <code>hağǧ</code> (Muslim pilgrimage) route from Damascus to Mecca ran through its interior. The peoples of the region brought sultans to power: Kerak Castle, the "nursery" of and place of exile for Mamluk sultans, gave refuge to both al-Nāṣir Muḥammad and Barqūq during their political exiles, and its local tribes actively supported their return to the throne. By the fifteenth century, Kerak had become a hotbed of political discontent,

^{2.} A topic of active debate in Mamluk studies today, "Mamluk decline" has generated a large body of scholarship. For a recent, provincial perspective on this debate, and one which further develops arguments in this paper, see Walker, Jordan in the Late Middle Ages.

^{3.} For a study on settlement cycles in this regard in based on ceramic distributions, see Johns, "The Longue Durée".

where ambitious governors and amirs struggled for power within their own ranks and against the sultan himself.⁴ Such patterns of tribal support and amiral rebellion were not limited to Kerak, but characterized much of Jordan in the fourteenth and fifteenth centuries, making the region critically important to the stability of the state. The Mamluks' fluid administration of the region, with shifting administrative borders and district capitals, was one way that Cairo co-opted local tribes, manipulated their alliances, and attempted to quell amiral rebellions.⁵ Jordan, moreover, served the state in another strategic way by providing Cairo with the horses on which its cavalry so heavily depended.

In terms of its economic importance, Jordan's rich farmland was exploited to its maximum potential by the Mamluk state in support of the $iqt\bar{a}'\bar{a}t$ that were the financial and social underpinnings of its military. In addition, the region produced for the Mamluks' export market, namely the sugar industry, which was one of the most profitable agricultural sectors of the Mamluk economy. The foundation, however, of the Mamluks' agricultural regime was grains; with its broad, rain-fed, grain-producing plains, Jordan was a key supplier of wheat to the region, in times of want, and an important component of the state's tax base in terms of this commodity. Jordan, thus, played an important role in sustaining the Mamluk state and alternatively benefited from and suffered under vacillating imperial rural administrative and agricultural policies, favoring one district over another, as political exigencies demanded. The long-term result for Jordan was a distinctive regionalism in settlement growth and decline and rural prosperity and impoverishment that characterizes the socio-economic conditions of the country today.⁶

During the fifteenth century, however, Jordan experienced a demographic and economic transformation: after a couple of centuries of intense settlement, investment in agriculture, and overall prosperity, many villages were abandoned, banditry was widespread, and agricultural production was significantly reduced. Historians and archaeologists alike generally attribute such demographic and economic trends to a variety of factors that, in the late fourteenth and fifteenth centuries, combined to bring about the collapse of state authority in the Transjordan. Such factors are those most often lamented in contemporary written sources, such as natural disasters (earthquakes, droughts), pestilence (the bubonic plague of the 1340s and subsequent pandemics), and political upheavals (Timur's invasion of 1400 and numerous, localized amiral rebellions). In the absence of a strong, central authority, according to this scenario, villages in the lowlands and on the plateaus were vulnerable to attack by predatory Bedouin tribes. Thus, the general abatement in permanent settlement by the fifteenth century highlighted by archaeological survey reports and suggested by early Ottoman tax registers is attributed to a weakening of state authority, which forced villagers to relocate to the more secure highlands. These demographic shifts, in the eyes of many scholars, contributed to the general social and

- 4. Hujjah, al-Tārīḥ al-Siyāsī.
- 5. Walker, "Mamluk Investment" and "The Tribal Dimension".
- 6. Ibid., "Mamluk Investment".
- 7. On the political factors, see Hujjah, al-Tārīḥ al-Siyāsī.

economic decline and further political marginalization of the region that lasted until the Ottoman reforms (*Tanzīmāt*) of the late nineteenth century. It is only from the 1870s, then, that Jordanian villages were resettled, the result of the registration of land for tax purposes and state investment in infrastructure.

While not all regions of today's Jordan suffered equally by the decline of village life from the late Mamluk period on, peasant poverty is both attested in written sources of the period and illustrated archaeologically. Although a full examination of the archaeological evidence for rural decline is beyond the scope of this paper, a few preliminary observations can be made. The first relates to the phenomenon of settlement shifts. Archaeological surveys are consistent in presenting a picture of abandonment of the open plateaus for more easily defended ridges or highlands and of general dispersal of settlement. The larger towns and military/administrative centers (such as the citadel of Hisban, a district capital) were largely abandoned by the state by the end of Mamluk period, although their associated villages continued to be occupied, albeit on a much less intense level. Censuses conducted by the Ottoman government document the existence of many abandoned villages in the early sixteenth century, before the Sublime Porte attempted resettlement and revival of the local agricultural sector (see below).

The second issue is the nature of the settlements that do retain settlement through the fifteenth century. Housing of the period tended to be poorer, with contemporary waqfiyyāt describing neglected and ruined structures. Domestic buildings, such as have been excavated, are characterized by makeshift construction (roughly cut blocks, little use of mortar, low quality building materials), and there is evidence of squatter or seasonal occupation of ruins, indicating a return, to some degree, to a transhumant lifestyle. Moreover, recent archaeological investigations of Mamluk-period vernacular architecture suggest that there may have been a shift in villages from structures dedicated to either surplus food storage (perhaps for export markets under the control of the state) or purely domestic use, to all-purpose housing in which self-sufficient family units stored their own food in the home in wall storage niches (locally called *qiwarah*) and, at times, shared space with their flocks. It

The third has to do with general standard of living, measured namely by consumerism and diet. Tablewares are particularly sensitive indicators of household income. Expensive imports of specialized glazed wares, such as bowls and chalices with relief design possibly imitating army-issue bronze basins (the former known as "glazed relief wares"), disappear from most Jordanian settlements by the end of the fourteenth century; blue-and-white tin-opacified wares, imitating Chinese porcelains and likely produced in Syrian workshops, are rare by the fifteenth century. Glazed wares, which are more expensive to produce than non-glazed ones, do not complete disappear from the Jordanian household repertoire, however, but they do represent a much smaller percentage of the larger household assemblage and are less diverse

- 8. Brown, "Late Islamic Ceramic Production", p. 440-441.
- 9. Ghawanmah, "al-Qarya fi Ğanūb al-Šām"; Walker, "A Boom and 'Bust' Economy".
- 10. Walker and LaBianca, "The Islamic Qusur", p. 452.
- 11. McQuitty, "Khirbat Faris"; Walker and LaBianca, "Tall Hisban".

in range of forms than they were in the fourteenth century. Bowls covered in a green glaze become more common and appear to be produced locally from the late fifteenth century. ¹² In short, ceramic evidence suggests that over the course of the fifteenth century many Jordanian villages relied more on cottage production of household goods and more localized markets than previously and that perhaps their diet was not as diverse.

Likewise, contemporary written sources describe episodes of famine with greater frequency in the fifteenth century. Brought on by a variety of factors—drought, locusts, war, hoarding of grains and the resulting price hikes for basic foodstuffs—barley replaced wheat in the diets of the truly impoverished, and during the worst of circumstances many died of hunger.¹³ Some of our most colorful descriptions of rural hardships of the time come from the hand of Ibn Ḥiǧǧī and his student Ibn Qāḍī Shuhba, who were Shafiʿī scholars based in fifteenth-century Damascus. Ibn Ḥiǧǧī (751-816 / 1350-1413), whose extant work has only recently been published and partially analyzed¹⁴, was born in Damascus and achieved prominence as chief Qāḍī and baṭīb and nāẓir of the Umayyad Mosque in the city.¹⁵ However, his family roots, as his nisbah indicates, were in central Jordan, in the town of Hisban.¹⁶ Ibn Ḥiǧǧī frequently visited Jordan and described in living detail the ups and downs of village life and agriculture there during the reigns of Sultans Barqūq and Faraj. Such accounts will be discussed below.

Rural hardship and suffering, however, was often temporary and regionalized and does not characterize the lives of all peasants in this period. Archaeological surveys, in particular, demonstrate the continued settlement and agricultural viability of sub-regions of the Transjordan that were located in the secure highlands, were semi-independent of the Mamluk state, and practiced a diversified agriculture, such as the Irbid region in the north.¹⁷ While there is evidence for a decline in living standards, using the measures described above, such regions were never abandoned and are frequently mentioned in Syrian sources of the fifteenth centuries as places of refuge in times of trouble, centers of education, and important parts of the social and intellectual networks of Damascus and its territories. In the eyes of these contemporaries, the decisions made by local and imperial authorities about usufruct of land, what crops to plant, and how to distribute water, had the greatest impact on the prosperity or abandonment of

- 12. Walker, "Identifying the Late Islamic period ceramically".
- 13. Similar stories are known from contemporary Egypt (Adam Sabra, Poverty and Charity in Medieval Islam, p. 134-168).
- 14. Ibn Ḥiǧǧī, Tariḥ Ibn Ḥiǧǧī; Ghawanmah, Dimašq fī ʿaṣr Dawlat al-Mamālīk; and Sami Massoud, An Analysis of the Annalistic Sources.
- 15. Sami Massoud, An Analysis of the Annalistic Sources, p. 181.
- 16. Hisban was the capital of the Balqa in southern Mamlakat Dimašq for the first half of the fourteenth century. The Mamluk citadel there was apparently abandoned there after an earthquake in the 1340s, but the village continued to be occupied, and its market thrived, until well into the fifteenth century. The village seems to have been seriously depopulated by the late 1500s. Hisban is known in Syrian sources of the Mamluk period as a center of education and agriculture (Walker and LaBianca, "The Islamic *Qusur*"; Walker, "Mamluk Investment".
- 17. Ibid.

villages.¹⁸ They, moreover, seem to recognize the regionalism in the fortunes of the Jordanian countryside and were interested, in some degree, in the power struggles over the land that played out between locals and state officials.

Land as Place of Contestation and Collaboration

It was through the management and control of land that the some of the most complex political relationships acquired their fullest expression. Although contemporary sources, and certainly those most critical of the Mamluk state in the late fourteenth and fifteenth centuries (such al-Maqrīzī in Egypt, and Ibn Sasra, Ibn Ḥiǧǧī, and Ibn Qāḍī Shuhba in Syria) emphasize its parasitical and myopic attitudes towards the countryside, this period was far from one of agricultural exploitation and ruin. While it is true that the Mamluks' administration of southern Bilād al-Shām, in particular, was often changing, and it may have appeared at times to be without long-term vision and rationale, fluid administrative borders and land transfers may reflect as much as a rational attempt for imperial survival as petty jockeying for political gain. The land was a constant; people's relationship to it was not. In fact, we can consider the land as the locale of political contestation and collaboration, where the state and *fallāḥūn* together used it as the basis of their mutual power struggles against and accommodation with one another.

Local peasants and the Mamluk state confronted one another on three issues related to the land: the use and management of the land, control of agricultural markets, and response to and recovery from natural disasters. On these three issues the written sources of the period shed much light on the encounters themselves, while archaeological data allows us to evaluate the repercussions of their denouement.

The Imperial Perspective

Imperial interest in rural Jordan, and its interactions with local society, was both security—and profit-driven. At the beginning of the Mamluk period Transjordan represented a security concern, as the remnant of Ayyubid outposts remained there and the principle hağğ route from Damascus to Mecca ran through the Transjordanian interior. Sulțān Baybars initiated an ambitious defensive project that involved reinforcing the citadel walls and towers at former Ayyubid castles, such as Kerak and Shobak, and building new fortifications at what would become rural capitals, such as Hisban and Salt.¹⁹ He also built and leveled roads and reorganized the *barīd* system that would, by the fourteenth century, blossom into a comprehensive communications network of postal centers (*marākiz*), pigeon and fire towers, and caravan and pilgrim stops. Such investments indirectly benefited the local agricultural sector. While the initial objectives of infrastructure development were defensive, the networks

- 18. Walker, "Sowing the Seeds of Rural Decline?".
- 19. Walker, "Mamluk Investment", p. 243.

and facilities that grew out of it facilitated the transport of agricultural goods from fields to markets and on to ports.²⁰

The state's overarching concern for defense (against both foreign and domestic enemies) also impacted the structure of administration in the region. The structure of the Mamluk administration of southern Bilād al-Shām was inconsistent, with periodic shifts in administrative borders and district (safaqa) capitals (niyāba-s or wilāya-s) and the combination or division of districts. The promotion of a previously undistinguished village to a district capital, for example, served to solidify relations between the sultan and the powerful local tribes of Transjordan in the power struggles within the Mamluk elite throughout the fourteenth and fifteenth centuries. The creation of new administrative districts or merging of two former ones also served political purposes, by allowing the state to alternatively control or award state or local elites, as well as better control transportation routes.²¹

Outside of infrastructure and the highest levels of administration, however, the state generally did not interfere or otherwise involve itself directly in the management of the agriculture sector. ²² Planting decisions were usually dictated by local custom, and local administrators collected the taxes and supervised the harvests. There were, however, some exceptions. The Jordan River and its tributaries irrigated cane sugar plantations; by the last quarter of the fourteenth century these were largely administered as sultanic estates. The Šadd al-Aģwār, and occasionally the Governor of Syria himself, personally supervised the harvest and processing of the cane into dry sugar, a process that took up to five months and required residence there during this period. ²³ In times of particular political insecurity, when raids on iqṭāʿāt were likely and when crops were needed to feed or finance the army, Cairo or Damascus sent high level amirs to guard the crops from harvest to transport. ²⁴

Mamluk amirs often resorted to the hoarding of grains during times of drought, a condition that negatively impacted both the rain-fed agriculture of Syria and the irrigated regime of Egypt. This is the single-most common factor mentioned by contemporary sources behind rural decline and was blamed directly on the state.²⁵ Hoarding of grains, and the subsequent forced sales at inflated prices (tarh) harmed local peasants in two ways: prices of staples became too high for many families, and grains and bread disappeared from the market, resulting in an inadequate diet, at best, and hunger, at its worst. Such incidences were so common that for an official to act otherwise was considered an act of mercy. Amīr 'Umar ibn Manjak

- 20. Walker, "Sowing the Seeds of Rural Decline?".
- 21. Walker, "Mamluk Investment", p. 241-246.
- **22.** Iqtā'-s were generally managed on behalf of the muqta' by a cadre of local officials. Only rarely did the muqta' visit his estates. For a discussion of how this worked in Egypt in this period, see Sato, State and Rural Society, p. 201 ff and Rabie, The Financial System of Egypt, p. 65.
- 23. Ghawanmah, Dimašq fī 'aṣr Dawlat al-Mamālīk, p. 37.
- 24. In 804/1401, for example, the sultan requested that amirs of forty and ten be appointed by his viceroy in Damascus to guard the crops of the Balqa, Salt, 'Ajlun, Adhri'at, Nablus, and the Ghôr (Jordan Valley) because of tribal unrest in the region following Timur's invasion (Ibn Qāḍī Šuhbā, Tārīḫ Ibn Qāḍī Šuhbā, p. 266).
- 25. Al-Maqrīzī, Iģātat al-Umma, p. 54.

responded to the drought of 800/1397 by opening the wheat stores in Damascus, distributing grain to the poor, and selling the remainder to the heads of households, bypassing the brokers and millers. According to Ibn Sasra, "in these times we have seen no one whose soul was as generous as this".²⁶

In a similar vein, the seizure of crops by troops on campaign exacerbated peasant suffering, a situation that became increasingly more common with Barqūq's return to power and the numerous rebellions in the region that followed. Ibn Sasra frequently used the phrase "and the people of Damascus were afraid" when describing the advance of Barqūq and his troops north from Kerak to Damascus, namely because of the sultan's seizure of all crops from not only villages but entire regions, such Hisban and the surrounding Balqa'. This method was also a form of collective punishment on villagers who chose the losing side in conflicts between local amirs. In the rebellions of 802/1399 and 806/1404, which led to the fall and rise of provincial governors, the residents of Kerak and neighboring villages had their crops taken from them, their houses plundered, and community leaders murdered. ²⁸

The Perspective of the Jordanian Peasant

While the state was concerned about taking from the land as much as it could, peasants and local officials worked and managed land, when they were left to do so without direct interference from the state, in a very different manner. Here tradition governed decisions about what crops to grow, how to share water, and who had access to what land, reinforcing a sense of community and communal solidarity.²⁹ Family and social ties, furthermore, secured an extensive network of local and regional markets, including seasonal markets (*aswāq mawsimiyyah*) that serviced the annual pilgrimage, and pulled even the smallest of villages into a larger network based on the market centers of Malka, Hubras, 'Ajlun, Zarqa, Salt, and 'Aqaba.³⁰ Jordanian agriculture, on its own, tended to be self-sufficient and diverse in production.

To assess the peasants' perspective on their role in the Mamluk state, one has to turn to sources written by the Syrian intelligentsia, as peasants left us no writing of their own.³¹ The largely Damascus-base 'ulamā', however, do give a uniquely rural perspective, as many of them maintained ties with family in rural areas and had both an interest in and a real understanding of agriculture and rural society. In their point of view, the Mamluk state was not the best

- 26. Ibn Sasra, al-Durrah al-Mudī'ah, p. 298.
- 27. Ibid., p. 24.
- 28. Hujjah, al-Tārīḥ al-Siyāsī, p. 115-116.
- 29. Walker, "The Role of Agriculture".
- 30. Walker, "Mamluk Investment in Southern *Bilād al-Šām*", p. 250 and "Mamluk Investment in the Transjordan", p. 130-131; Ghawanmah, "al-Tijārah al-Dawliyyah fī al-Urdunn"; Banī Ḥamad, "al-Aswāq al-Šāmiyyah"; Ḥalīl, "al-Tijārah al-Dāḥiliyyah", p. 51-52; Hujjah, *al-Tārīḥ al-Siyāsī*, p. 252-257.
- 31. Their words, however, are reproduced in some sense in court documents. Rare for the Mamluk period, they have been a focus of study for the early Ottoman era (Singer, *Palestinian Peasants*). On Jordanian peasants in the same courts in the fourteenth century, see Walker, *Jordan in the Late Middle Ages*, chap. 3.

steward of the land. The sources are, in fact, quite critical of official policies and practices that worked against creating a viable and secure agricultural regime and guaranteeing justice in rural areas. Ibn Sasra, Ibn Ḥiǧǧī, and Ibn Qāḍī Shuhba—who are our most important Syrian historians of this period—repeat the same mantras in their criticisms of the Mamluk state and their interpretations of peasant political activity. They emphasize three modes of political action by the fallāḥīn, which represent different options for opposition in what was generally a violent, oppressive system: filing formal petitions against officials, participating in raids and revolts against a variety of actors, and moving residence. We will briefly consider each of these in turn.

Peasants often turned to the legal system, in its various forms, to redress wrongs committed by government officials. Iyās al-Jarkashī was named by Sulṭān Barqūq as the Mušadd al-Aġwār. He used his position to divert water normally shared on a communal basis to his own plantations in the Jordan Valley, forced sales of his own sugar at inflated prices, and terrified local peasants by cutting the hands off of accused thieves.³² He was hated by local administrators, intellectuals, townsmen, and peasants alike and directly blamed for the economic collapse of the Jordan Valley.³³ Enough complaints were lodged against him, that the sultan arrested Iyas and had him executed that year. While this effort at legal opposition was a success, it did not, unfortunately, lead to improved conditions in the Valley. Iyas was replaced by an official who, immediately upon taking his post, began to purchase all the wheat from markets in the Jordan Valley, hoard them, and resell them at high prices.³⁴

When legal resistance failed, peasants frequently took up arms against the state. Their armed resistance is described in both the Syrian and Egyptian countrysides either as acts committed in collaboration with Bedouin or concurrent with Bedouin attacks against villages. Either way, the victims were neighboring villages and officials in transit or on patrol.³⁵ The sources do not fully explain the background of rebellions or raids, but one can surmise from their general historical context that many were displaced peasants, forced to leave their villages and homes because of armed conflict or drought. Incidences of this sort increased in northern Jordan immediately after Timur's invasion and are attested even five to six years afterwards.³⁶ It is not clear whether these were actions of desperation or concerted attacks on the state, however. The case of Kerak town is more straightforward, though: the townsmen took up arms in 802/1398 and refused the new governor entry, which forced the government to appoint a replacement more acceptable to them.³⁷ Official reaction to specifically peasant rebellions, however, was immediate and brutal. A swift and conclusive repression of riots by the *fallāḥīn*

^{32.} Ibn Qādī Šuhbā, Tārīh Ibn Qādī Šuhbā, p. 630-631.

^{33.} Ibn Sasra, al-Durrah al-Mudī'ah, p. 254.

^{34.} Hujjah, al-Tārīḥ al-Siyāsī, p. 81 – citing Ibn Sasra.

^{35.} The political turmoil surrounding the rebellions against Barqūq in 801/1389 encouraged peasants to plunder crops, apparently their neighbors, according to Ibn Sasra (al-Durrah al-Muḍī'ah, P. 24). For examples from Egypt, see Borsch, The Black Death, p. 49.

^{36.} Ghawanmah, Dimašą fī 'aṣr Dawlat al-Mamālīk, p. 122 – citing Ibn Ḥiǧǧī.

^{37.} Hujjah, al-Tārīḥ al-Siyāsī, p. 117 – citing al-Maqrīzī.

was, in official rhetoric, in the best interests of the state, because it guaranteed rural security and prosperity. Newly appointed officials, or those requesting an iqta assignment, promised as a matter of course to "subdue the villages and peasants", as it guaranteed "improving the conditions of the Muslims" and was "in the manner of rulers".³⁸

A final form of resistance was to abandon one's land and leave the village; resistance this truly was, because peasants were by law required to remain on the land (the $iqt\bar{a}^c$) for at least three years at a time.³⁹ This is both attested historically and archaeologically and probably represents the culmination of the failure of the Mamluk rural policies by the end of the fifteenth century. References to movements of large numbers of villagers become more common in Syrian sources through the fifteenth century, as do references to abandoned settlements and structural ruins. Ottoman tax registers of the sixteenth century systematically list isolated fields without settlements ($mazra^c a$ -s), villages empty of residents (registered as $balta^c$), and ruins (barab) in their surveys of southern Syria.⁴⁰

Short-Term Trends

A series of political events in the late fourteenth and early fifteenth centuries combined to further sour relations between the state and local peasantry. The defining political development was the rise to power of Barqūq in 778 / 1376-1377 and his struggle to stay in power over the course of the last quarter of the fourteenth century. His reign, which marks the political transition from the Bahri to Burji Mamluk periods, represents a new period in Mamluk-Jordanian relations. During this period, rural Jordanian society appears frequently in contemporary, Syrian sources, as the region was pulled directly into the political and economic conflicts of the day.

The reign of his successor, Sulṭān Faraj, was particularly disastrous for the peasants and tribesmen of central Jordan, as conflicts internal to the Mamluk ruling apparatus, and primarily rebellions by local governors against the sultan and against one another, were played out on Jordanian soil. A modern Jordanian historian, Shawkat Hujjah, has described these conflicts in detail and assessed their impact on the people of Kerak and the villages in its hinterland, as well as the villages of the Jordan Valley. Hujjah cites these rebellions as one of the most important factors behind the decline of the local agricultural sector in the fifteenth century and the general economic decline of the Mamluk state. Mamlakat Karak alone went through ten governors in twelve years. ⁴¹ Local townsmen and peasants became involved in these conflicts

^{38.} Ibn Sasra, al-Durrah al-Mudi'ah, p. 152 and 169.

^{39.} Ghawanmah, Dimašą fī 'aṣr Dawlat al-Mamālīk, p. 25.

^{40.} For Jordan the published registers (in Turkish, with Arabic summaries) are Muhammad 'Adnān al-Bakhit Naḥiyat Banī Kināna and Detailed Register of the Private-Khass of the Governor in the Province of Damascus; Muhammad 'Adnān al-Bakhit and Noufan Hmoud The Detailed Defter of Liwa' 'Ajlun, #970 and The Detailed Defter of Liwa' 'Ajlun #185; and Wolf-Dieter Hütteroth and Kamal Abdulfattah, Historical Geography of Palestine, Transjordan and Southern Syria in the Late 16th Century (in English and provided with maps and charts).

^{41.} Hujjah, al-Tārīḥ al-Siyāsī, p. 250 ff.

(both by choice and through coercion by officials), creating deep divisions in their communities and resulting in civil war and much loss of life and property.⁴²

While amiral conflicts negatively impacted southern Jordan and the Jordan Valley, destroying villages and pulling peasants directly into Mamluk infighting, it was Timur's invasion of Syria in 803/1400 that devastated much of northern Jordan and disrupted village life there for decades. Contemporaries cite this as the most traumatic event of the period and describe in detail local villagers' responses, for both better and worse, to the political, security, and economic problems created by this event. The people of Damascus—the city and its environs—fled the Timurid army and took refuge in the Hawran and northern Jordan. Timur followed them and laid to waste one village after another, as his army advanced. He killed 450 people in the village of Hubras alone, and in Idhra'at stole all the grain the villagers had stored that season in their wells and took their sheep, cows, and horses. After Timur withdrew from the region, hungry men wandered from village to village looking for food. To make matters worse, the Governor of Syria levied extraordinary taxes on local peasants following this devastation to raise money to rebuild the Damascus Citadel, which also suffered damage at Timur's hands, and to pay his soldiers salaries, which were apparently three months in arrears. The Jordanian historian Yusuf Ghawanmeh paints a sympathetic picture of the peasants' suffering:

"The *fallahun* of Syria endured harsh treatment at the hands of the mamluks and *iqta*' holders... The *muqta*'s were particularly tyrannical to the peasants, harsh and arbitrary in their dealings, assaulting their honor and property."⁴⁶

Timur's raids into Jordan caused havoc for many years, as Bedouin and peasants colluded in attacks against surviving villages and patrolling troops.⁴⁷ One could argue that security in the region was not fully restored until the mid-sixteenth century by the Ottomans.

Medium-Range Trends

Two economic policies initiated by the Mamluk state seem to have significantly impacted the rural economy of Jordan and relations with local peasants: the cadastral survey (rawk) of Sulṭān al-Nāṣir Muḥammad of southern Syria in 713/1313 and the large-scale transformation of iqṭā'āt located in Jordan into private property to support endowments (awqāf) in the third quarter of the fourteenth century. Much has already been written about al-Nasir Muḥammad's surveys of his third reign.⁴⁸ What is not clear, however, is what impact the survey of southern

- 42. Walker, "The Role of Agriculture".
- 43. Ibn Qādī Šuhbā, Tārīh Ibn Qādī Šuhbā, p. 181.
- 44. Ibn Ḥiǧǧī, Tārīḥ Ibn Ḥiǧǧī, p. 498.
- 45. Ghawanmah, Dimašą fī 'aṣr Dawlat al-Mamālīk, p. 25 and 122.
- 46. Ibid., p. 24 translation mine.
- 47. Ibid., p. 122.
- 48. Sato, "Historical Character of Rawk al-Nasiri" and id., State and Rural Society in Medieval Islam, p. 138-143.

Syria in 713/1313, which was the first of three conducted by this sultan, had on local peoples and their land. For Egypt, some assessment is possible because of Ibn Jī'an's Kitāb al-tuḥſa alsaniyya bi asmā' al-Bilād al-Miṣriyya and Ibn Duqmāq's Kitāb al-intiṣār li-wasiṭat 'iqd al-amṣār, which effectively summarize the results of the Egyptian survey of 715/1315.⁴⁹ On the basis of these, and comments by al-Maqrīzī and al-Nuwayrī, we know that the immediate effect of the surveys, on the state level, was to fragment land, assigning smaller, non-contiguous and often widely dispersed, shares to muqṭa'-s, and giving the sultan a greater portion of the iqṭā'-s. This, in turn, empowered the sultan vis-à-vis his amirs in relation to the landed estates.

Recent scholarship has turned attention to Syria to assess the locale impact, rather than merely the sultan's rationale, of the surveys. 50 On the one hand, the fragmentation of *iqtā* 's may have produced a more complex system of tax collection and transportation, particularly of grains, under the supervisions of the agents (wakil-s) of multiple muqta^c-s. Security of the roads and storage facilities (wells, caves, and šūna-s) would have been essential for the successful administration of such a system, particularly in Jordan; in times of security tax collection worked quite well but could potentially collapse during periods of internal chaos, when roads were not properly patrolled and garrisons were withdrawn, such as the period of Timur's invasion and the Bedouin raids of the late fifteenth century. In the eyes of some contemporaries, the survey also led to rural welfare and prosperity.⁵¹ On the other hand, the concentration of land in the hands of the sultan himself (as personal iqtā s and through control of government, or hāss, land) allowed for the creation of private estates and "plantations" that produced for specialized markets, such as the sugar estates of the Jordan Valley.⁵² Such plantations transformed traditional cropping, water sharing, and labor organizations, and recent archaeological fieldwork suggests that they, moreover, may have had a negative long-term impact on the environment.⁵³ In a similar vein, according to al-Nuwayrī (Nihayat al-arab fī funūn al-adab), the rawk of 713/1313 created "complete iqtā'-s" (iqtā' darbasta), which Sato interprets as the right of the muqta to now collect all taxes from the estate, giving him greater individual control over land and peasant. The decline of the *iqtā* system, in the form established by al-Nāṣir Muḥammad's surveys, does appear to be an important factor in the overall economic and political decline of the state and, according to one scholar, was directly responsible for urban violence in Damascus, as iqtā' revenues were greatly reduced.⁵⁴ The extent to which the iqtā' system, when it functioned smoothly and effectively, contributed to rural security, effective tax collection, and consistent investment in agricultural infrastructure has yet to be addressed.

A second financial trend of the period is emerging as a critical factor in the political and economic challenges of rural society in the late fourteenth and fifteenth centuries. The large-

^{49.} Sato, "Historical Character of Rawk al-Nasiri", p. 224.

^{50.} Walker, "Sowing the Seeds of Rural Decline?"; Sato, "Fiscal Administration in Syria".

^{51.} Sato, "Fiscal Administration in Syria". Here Sato cites Ibn Ḥalīl al-Asadī (al-Taysīr wa-l-i'tibār wa-l-taḥrīr fī mā yajibu min ḥusn al-tadbīr).

^{52.} Walker, "Sowing the Seeds of Rural Decline?".

^{53.} On the residue produced through sugar refining, see Photos-Jones *et al.*, "The Sugar Industry"; on deforestation in a textual study, see Ouerfelli, *Le sucre*, p. 268 ff.

^{54.} Miura, "Urban Society in Damascus".

scale transformation of former *iqtā*^c-s into *waqf* land, through quasi-legal purchase from the *bayt* al-māl, has come under increasing scrutiny in recent Mamluk scholarship.55 It had reached an advanced stage in Egypt late in the Mamluk period, robbing the state of an estimated 88.89% of its taxable arable land by the time of the Ottoman conquest.⁵⁶ Carl Petry refers to this as form of "clandestine investment", which sultans, in particular, used to create private estates at the expense of the *iqtā*^c system.⁵⁷ For Jordan the picture seems to be different. Extant *waq fiyyāt* document the extensive endowment of the most fertile and productive agricultural land in Jordan (the sugar plantations of the Jordan Valley, the wheat fields of the central Jordanian plains, and the olive oil producing regions of the northern hill country) by Sulțān Barqūq. Most of these were villages endowed in their entirety, generally for madrasa-s in Egypt. The trend continued with further sultanic and amiral endowments of both Jordanian villages and shares of villages through the fifteenth century.⁵⁸ This process may have been well underway, in fact, by the end of the fourteenth century. Barqūq's creation of al-Diwān al-Mufrad in either 784/1382 or 797/1395, to secure the monthly stipends of the Royal Mamluks, has recently been interpreted as a response to the collapse of the $iqt\bar{a}^c$ system resulting from years of endowments of rural land by powerful amirs.⁵⁹ This Dīwān achieved greater financial and administrative control of farmland in both Egypt and Syria.60

What the rationale was for these endowments is not entirely clear, outside of estate creation and their protection from confiscation and taxation. What is more interesting, for the purposes of this study, is how transformation of Jordanian land into private property and its subsequent endowment potentially restructured Jordanian society. Although often associated with the decline of the $iqt\bar{a}'$ system, and thus weakening the financial, military, and political underpinnings of the Mamluk state, there is growing evidence that this "wave of waqf" was a solution to challenges of the time, rather than a catalyst for problems. According to al-Maqrīzī, famine in Cairo was avoided during the grain shortages of 796 / 1393-1394 because of Sulṭān Barqūq's charitable endowments. It is also possible that sultanic endowments helped to revive rural economies after the demographic and economic devastations following the Black Death. This possibility has been overlooked in Egyptian scholarship, because the sources used have been generally late in date (sales and purchase writs, deeds, and tax registers from the end of the Mamluk and early Ottoman periods), with the result that such endowments are chronologically associated with the collapse of the Mamluk state. However, sources for Jordan are much earlier— $waqfiyy\bar{a}t$ and chronicles of the fourteenth century—and indicate that the process began much earlier, at a

^{55.} See particularly Petry, Protectors or Praetorians?, p. 210; id., "Fractionalized Estates in a Centralized Regime", and Petry, "Waqf as an Instrument of Investment"; Abū Ġāzī, Taṭawwur al-ḥiyāza al-zirā'ya; Sabra, "The Rise of a New class?"; Walker, "Sowing the Seeds of Rural Decline?"; id., Jordan in the Late Middle Ages, chap. 4.

^{56.} Abū Ġāzī, Taṭawwur al-ḥiyāza al-zirā'ya, p. 66.

^{57.} Petry, Protectors or Praetorians?", p. 210.

^{58.} Walker, Jordan in the Late Middle Ages, chap. 4.

^{59.} Igarashi, "The Establishment and Development of al-Diwan al-Mufrad".

^{60.} Ibid., p. 128.

^{61.} Al-Maqrīzī, Iģātat al-Umma, p. 53.

time of rural revival associated with the reign of Barqūq. Supporting such an argument is the tax structure put into place in southern Syria by the Ottomans. The largest of the former Mamluk rural endowments, with contiguous tracts of land, were maintained as administrative units by the Ottoman state and taxed at the rate of 10%, often converted into sultanic and gubernatorial estates. The endowments of Barqūq, in particular, were economically productive and could be rationally administered as coherent units, perhaps addressing the tendency towards fractured land administration created by al-Nāṣir Muḥammad's surveys. The reign of Barqūq emerges as a turning point in administration of rural lands and one associated, in the eyes of contemporaries, with centralization and rural economic revival.

It was not only sultans in this period that endowed land from local real estate. Jordanians had come to own extensive amounts of land, particularly around the religiously mixed towns of Kerak and Shobak, by the late fifteenth century. Documented in waqfiyyāt dedicated to the sultanic estates (from which they were excluded), contemporary court documents in Jerusalem, the deeds of St. Catherine's monastery, and sixteenth-century tax registers, small plots of land—orchards, gardens, and fields—along with mills, olive presses, and bakeries had been previously endowed for Christian and Muslim institutions at home and abroad and for the donors' own families. There appears to have been an active business in the buying and selling of land on the local level; the land likely entered the market originally through purchase from the Imperial Treasury, although this is not specified. The state's stranglehold on land tenure had, nonetheless, clearly broken down, and a new class of land owners was emerging at the end of the Mamluk period. The locally sponsored charitable endowments created then in many cases survived well into Ottoman rule and contributed significantly to the rejuvenation of local village communities.⁶³

Long-Term Trends

Such short and medium-range trends were impacted by more gradual, long-term forces—such as desertification and erosion—that mitigated against rural security. The political challenges of the late Mamluk period were catalysts, then, in the decline of certain regions of rural Jordan. While climate as a factor in demographic decline is often rejected by Egyptian-based historians, it cannot be ignored when one is examining the fifteenth century in Jordan. With the exception of the Jordan Valley, Jordanian agriculture was traditionally rain-fed; rainfall is low in most parts of the country, and even today the grain harvest fails on an average of once in each five years because of inadequate rainfall.⁶⁴ Contemporaries were well aware that

^{62.} Walker, "Sowing the Seeds of Rural Decline?". Consider, for example, the former sugar estate of Nimrin in the Jordan Valley. According to a *tapu defter* of 1005/1596, the village, original endowed by Barqūq for his *madrasa* complex in Cairo, was now taxed at the rate of 10%, the revenues divided between an endowed shrine (one Musa shrine) and governmental reserves ($h\bar{a}$, $h\bar{a}$) (al-Bakhit and Hmoud, *The Detailed Defter of Liwa' 'Ajlun #185*, $h\bar{a}$).

^{63.} For more on this subject, see Walker, Jordan in the Late Middle Ages, chap. 4.

^{64.} Palmer, "Following the Plow", p. 132.

the region was susceptible to drought and devoted much of their local narratives to describing the damage done by drought, unseasonal or delayed rainfall, and floods, as well as describing, and more often than not condemning, state response to these natural events, when the state did act. While they were events that traumatized local peoples in particular years and places, rainfall disasters (both droughts and floods) had long-term consequences on agriculture and village life and, in this period, were part of a larger cycle of climate change—desertification—documented by environmental science for the late Mamluk and Ottoman periods. 65

The drought of 799/1397 looms large in the eyewitness accounts. Ibn Sasra and Ibn Ḥiǧǧī describe this year in similar terms: it had not rained for so long by Jumāda al-Aḥīr that year and people were beginning to die of thirst, that the religious leadership and state officials of Damascus (Qāḍī-s, muḥtasib-s, and wālī-s alike) called for a three-day fast and prayers for rain; bakeries were closed; and special services were held in the Great Mosque. 66 Both historians interpret the drought as a punishment for sin and lack of faith and include in their accounts moral stories about drought from earlier ages. Several days later it rained south of Damascus (for two straight days water streamed through the gutters), and it eventually also rained in the north—an answer to prayer.

Nine years later (808/1405) another drought is recorded that led to famine and communal strife in the Damascus region, as "the people were on the verge of serious conflict with one another, and the fields that showed any sign of moisture or green were guarded carefully".⁶⁷ With only four days of rainfall in the late winter that year, village solidarity disintegrated, as peasants began to attack one another over water for their crops.⁶⁸ Lack of rain in the late winter—early spring, when it is most needed for early summer harvests, often coincided in Syria with cold spells and frost, and could ruin both wheat harvests and fruit trees alike, as they did in 799/1397, the year of the great drought.⁶⁹

Heavy rains, even during the wet months of winter, could cause just as much harm as lack of rainfall and could lead, as well, to crop failures and famine. Ibn Ḥiǧǧī describes a month of endless rains, with people taking refuge from the deluge, followed by unseasonal cold and snowfall, and the flooding of the Barada River for the first three months of 801/1398.7° Four years previously, the same historian recounts a downpour so voluminous that the *barīd* was delayed passing the Irbid region in northern Jordan for two days.7¹ Heavy rains could cause as much fear and panic as periods of drought.

What is most interesting about these specific events is that the imperial authority is essentially absent. Our sources focus on local responses and local leadership. Thus, from these written sources alone, it is difficult to evaluate such localized events from a regional

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65. See references in note 73.
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^{66.} Ibn Sasra, al-Durrah al-Muḍī'ah, p. 292-293; Ibn Ḥiǧǧī, Tārīḥ Ibn Ḥiǧǧī, p. 220-223.

^{67.} Ghawanmah, Dimašą fī 'aṣr Dawlat al-Mamālīk, p. 34 - citing Ibn Ḥiǧǧī.

^{68.} Ibid., p. 33-34.

^{69.} Ibn Sasra, al-Durrah al-Mudī'ah, p. 292.

^{70.} Ghawanmah, Dimašą fī 'aṣr Dawlat al-Mamālīk, p. 32-33.

^{71.} Ibn Higgī, Tārīh Ibn Higgī, p. 107.

perspective. In order to investigate more thoroughly the interactions among political events, economic trends, and climatic change and to examine the more physical expressions of statepeasant relations during this period, the Northern Jordan Project (NJP), the archaeological component of this current study, was launched in 2003.⁷² The NJP was designed to identify the human and natural factors behind settlement decline in Jordan in the Mamluk and Ottoman periods through excavation and survey and a broad-based soil analysis in historically documented villages. The human factors—defined as wise or poor land management through decisions about what crops to plant, how to share water, and who owns the land—are identified through an intensive archival project targeting medieval Arabic sources related to the tenure, taxation, and general management of rural lands in Jordan, such as administrative manuals, tax registers, and waqfiyyāt documenting the endowment of rural lands. Changes in cropping, as well as natural factors, such as climate change, are evaluated in this project through a combined analysis of soil development, dendrochronology, and palaeobotany (palynology and phytolith analysis).73 The combination of survey and excavation with archival and soil analyses, aims at investigating settlement and agricultural shifts within the larger context of climatic and dynastic change.

The 2003 survey in Malka and its hinterland and the 2006 excavations in Hubras documented uninterrupted occupation of this region through the Mamluk period and Ottoman periods. The intensity of occupation in these villages, however, declined sometime between the late fifteenth century and the *Tanzimāt* period, when the Ottoman state made efforts at rejuvenating their tax bases in the region. This demographic decline coincides chronologically with environmental developments: pollen analysis from this field season suggests that there was less rainfall on the longer term than during most of the Mamluk period. In addition, many fields were abandoned, and those that were maintained reverted to a subsistence-level and more diverse base of production, indicating that peasants were no longer cropping for state-controlled markets but for family subsistence and local markets.

^{72.} The project website, and a full list of publications produced by the NJP, can be found at: http://clio.missouristate.edu/bwalker/. The results of the recent 2010 survey work in al-Turra are forthcoming.

^{73.} By analyzing the constituent components of soils, one can recreate the processes of soil development and erosion that are directly related to environmental change and land use (Lucke et al., "Soils and Land Use in the Decapolis Region"). Dendrochronology (the study of tree rings) has been used in Jordan to document rainfall history, and thus temperature cycles, for the last 400 years (Touchen and Hughes, "Dendrochronology in Jordan"). Palynology (the analysis of carbonized pollen—particularly useful for grains and orchards) and phytolith (silica skeletons of plants—preserving evidence of sugar cane, for example) analysis are often combined today in environmental projects to recreate historical floral regimes, which in turn directly yields information on the natural and planted environment and, indirectly, on climatic conditions and patterns of agriculture, herding, and transhumance (Horowitz, "Preliminary Palynological Indications"; Fall, "Deforestation in Southern Jordan"; Warnock, "Paleoethnobotany"; Rapp and Mulholland (eds.), Advances in Phytolith Systematics; Emery-Barbier, "Pollen Analysis: Environmental and Climatic Implications"; Rosen, "Preliminary Analysis" and Civilizing Climate).

Conclusions

What once appeared to be the general demographic decline of Jordan in the late Mamluk period may now be understood as regionalized responses to the political, economic, and climatic challenges of the day. How village communities, in particular, responded to inconsistent state investment in agriculture, domestic and international strife, and the short and long-term vagaries of climate cycles characteristic of the region is an important, and generally ignored, factor in the demographic trends of the fifteenth century. Peasants were actors on the rural stage and responded in a variety of political, economic, and social ways in order to survive the political collapse of the Mamluk state. The longevity of their tribal structures; marketing, social, and intellectual networks; and agricultural customs until today bears witness to the political potential of local peasants. To give them voice, however, particularly for the Middle Ages, requires recourse to a wide base of source material, both textual and archaeological. This study is very much a work in progress and takes one step towards that goal.

Bibliography

Archives

- Al-Bakhit, Muhammad Adnan, Naḥiyat Banī Kināna (Šamālī al-Urdunn) fī al-Qarn al-ʿĀšir al-Hiǧrī/ al-Sādis ʿAšar al-Mīlādī, University of Jordan, Amman,1989.
- —, Tapu Defteri No. 275. Detailed Register of the Private-Khass of the Governor in the Province of Damascus 958 A.H./1551-2 A.D., University of Jordan, Amman, 1989.
- Al-Bakhit, Muhammad Adnan and Hmoud, Noufan Raja, The Detailed Defter of Liwa' 'Ajlun (The District of Ajlun) Tapu Defteri No. 970, Istanbul, University of Jordan, Amman, 1989.
- —, The Detailed Defter of Liwa' 'Ajlun (The District of Ajlun) Tapu Defteri No. 185, Ankara 1005 A.H./1596 A.D., University of Jordan, Amman,
- Hütteroth, Wolf-Dieter and Abdulfattah, Kamal, Historical Geography of Palestine, Transjordan and Southern Syria in the Late 16th Century, Fränkischen Geographischen Gesellscaft, Erlangen, 1977.

Narrative sources

- Ibn Ḥiǧǧī, Šihab al-Dīn Abū al-ʿAbbās Aḥmad, *Tārīḫ Ibn Ḥiǧǧī*, ed. Abū Yaḥya ʿAbdallah al-Kandārī,
 Dār Ibn Ḥazm, Beirut, 2003.
- Ibn Qāḍī Šuhba, Taqī al-Dīn Abū Bakr Aḥmad, *Tārīḥ Ibn Qāḍī Šuhba 4*, ed. 'Adnān Darwīš, Ifpo,
 Damascus, 1997.
- Ibn Sasra, Muḥammad ibn Muḥammad, al-Durrah al-Muḍī ah fī al-Dawlah al-Zāhiriyyah, ed. William M. Brinner, University of California Press, L.A., 1963.
- Al-Maqrīzī, Aḥmad Taqī al-Dīn, Iġāṭat al-Umma bi-Kašf al-ġumma (as Mamluk Economics: A Study and Translation of al-Maqrizi's Ighatha), ed. Adel Allouche, University of Utah Press, Salt Lake City, UT, 1994.

Studies

- Abū Ghāzī, 'Imād Badr al-Dīn, Taṭawwur al-ḥiyāzah al-Zirā'yah fī Miṣr al-Mamālīk al-ǧarākisah, 'Ayn li-l-Dirāsāt wa-l-Buḥuṭ al-Insāniyyah wa-l-Iǧtimā'iyyah, Cairo, 2000.
- Banī Ḥamad, Fayṣal 'Abdallah Muḥammad, "al-Aswāq al-Šāmiyyah fī al-'Aṣr al-Mamlūkī", M.A. thesis, Yarmouk University, 1992.
- Borsch, Stuart J., The Black Death in Egypt and England: a Comparative Study, Austin: University of Texas Press, 2005.
- Brown, Robin, "Late Islamic Ceramic Production and Distribution in the Southern Levanmt: A Socio-Economic and Political Interpretation", Ph.D. dissertation, State University of New York - Binghamton, 1992.
- Emery-Barbier, Aline, "Pollen Analysis: Environmental and Climatic Implications", in *Prehistoric* Cultural Ecology and Evolution: Insights from Southern Jordan, ed. O. Donald Henry, New Plenum Press, New York, 1995. p. 375-384.
- Fall, Patricia L., "Deforestation in Southern Jordan: Evidence from Fossil Hydrax Middens", in Man's Role in the Shaping of the Eastern Mediterranean Landscape, eds. S. Bottema, G. Entjes-Nieborg, and W. van Zeist, A.A. Balkema, Rotterdam, 1990, p. 271-281.
- Ghawanmeh, Yusuf, "al-Qaryah fī Junub al-Šām (al-Urdunn wa Filisṭīn fī al-'Aṣr al-Mamlūkī fī ḍaw' Waqfiyyat Adar", Studies in the History and Archaeology of Jordan 1, 1982, p. 363-371.
- —, "al-Tiǧārah al-Sawiliyyah fī al-Urdunn fī al-'Aṣr al-Mamlūkī",Studies in the History and Archaeology of Jordan 2, 1987, p. 315-322.
- —, Dimašq fī ʿAṣr Dawlat al-Mamālīk al-Ṭānī, Dār al-Fikr, Amman, 2005.
- Horowitz, Aharon, "Preliminary Palynological Indications as to the Climate of Israel During the last 6000 Years", *Paleorient 2*, 1974, p. 407-414.
- Hujjah, Shawkat R., al-Tārīḥ al-Siyāsī li-Minṭaqat šarq al-Urdunn (min ǧunub al-Šām) fī ʿAṣr Dawlat al-Mamālīk al-Ṭānī, Mū'assasat Himādah-ldirāsāt al-Ğāmi'iyya wa-l-Našr wa-l-Tawzī', Irbid, 2002.
- Igarashi, Daisuke, "The Establishment and Development of al-Diwan al-Mufrad: Its Background and Implications", Mamluk Studies Review 10/1, 2006, p. 117-140.

- Johns, Jeremy, "The Longue Durée: State and Settlement Strategies in Southern Jordan Across the Islamic Centuries", in Village, Steppe and State: The Social Origins of Modern Jordan, ed. Eugene L. Rogan and Tariq Tell, I.B. Tauris, London, 1994. p. 1-31.
- Ḥalil, Sa'īd Ṣāliḥ Mūsā, "al-Tiǧāra al-Dāḥiliyya fī Dawlat al-Mamālīk al-Ṭāniyya (784-922 A.H. / 1382-1516 A.D.)", Ph.D. dissertation, University of Jordan, 1992.
- Lucke, Bernhard, Ziad al-Saad, Michael Schmidt,
 Rupert Bäumler, Sven-Oliver Lorenz, Peter
 Udluft, Karl-Uwe Heussner, and Bethany
 J. Walker, "Soils and Land Use in the Decapolis
 Region (Northern Jordan): Implications for
 landscape development and the impact of
 climate changent", Zeitschrift der Deutschen
 Palaestina-Vereins 124/2, 2008, p. 171-188.
- Massoud, Sami G., An Analysis of the Annalistic Sources of the Early Mamluk Circassion Period, Brill, Leiden, 2007.
- McQuitty, Alison , "Khirbat Faris: Vernacular Architecture on the Kerak Plateau, Jordan, Mamluk Studies Review 11/1, 2007, p. 151-171.
- Miura, Toru, "Urban Society in Damascus as the Mamluk Era was Ending", Mamluk Studies Review 10/1, 2006, p. 157-193.
- Ouerfelli, Mohamed, Le sucre: Production, commercialization et usages dans la Méditerranée médiévale, Brill, Leiden, 2008.
- Palmer, Carol, "Following the Plough': the Agricultural Environment of Northern Jordan", *Levant* 30, 1998, p. 129-165.
- Petry, Carl F., Protectors or Praetorians? The Last Mamluk Sultans and Egypt's Waning as a Great Power, SUNY Press, Albany, 1994.
- —, "Fractionalized Estates in a Centralized Regime: The Holdings of al-Ashraf Qaytbay and Qansuh al-Ghawri According to their Waqf Deeds", JSEHO 41/1, 1998, p. 96-117.
- —, "Waqf as an Instrument of Investment in the Mamluk Sultanate: Security vs. Profit?", in Slave Elites in the Middle East and Africa: A Comparative Study, ed. Miura Toru and John Edward Philips, Kegan Paul International, New York, 2000.

- Photos-Jones, Effie, K.D. Politis, Heather F. James, Allan J. Hall, Richard E. Jones, and Jerry Hamer, "The Sugar Industry in the Southern Jordan Valley: An Interim Report on the Pilot Season of Excavations, Geophysical and Geological Surveys at Tawahin as-Sukkar and Khirbat ash-Shaykh 'Isa, in Ghawr as-Safi", Annual of the Department of Antiquities of Jordan 46, 2002, p. 591-614.
- Rabie, Hassanein, *The Financial System of Egypt:*A.H. 564-741/A.D. 1169-1341, Oxford University Press, London, 1972.
- Rapp, George Jr. and Susan Mulholland, eds., *Advances in Phytolith Systematics*, Plenum Press,
 New York, 1992.
- Rosen, Arlene, "Preliminary Analysis of Phytoliths from Prehistoric Sites in Southern Jordan", in *Prehistoric Cultural Ecology and Evolution: Insights from Southern Jordan*, ed. Donald O. Henry, New Plenum Press, New York, 1995, p. 399-403.
- —, Civilizing Climate: Social Responses to Climate Change in the Ancient Near East, Alta Mira Press, New York, 2007.
- Sabra, Adam, "The Rise of a New Class? Land Tenure in Fifteenth-Century Egypt: A Review Article", Mamluk Studies Review 8/2, 2004, p. 207-210.
- —, Poverty and Charity in Medieval Islam: Mamluk Egypt, 1250-1517, Cambridge University Press, Cambridge, 2000.
- Sato, Tsugitaka, "Historical Character of al-Rawk al-Nasiri in Mamluk Syria", in Proceedings of the First International Conference on Bilad al-Sham, ed. Muhammad Adnan al-Bakhit, University of Jordan, Amman, 1984, p. 223-235.
- —, State and Rural Society in Medieval Islam: Sultans, Muqta's and Fallahun, E.J. Brill, Leiden, 1997.
- —, "Fiscal Administration in Syria during the Reign of Sultan al-Nasir Muhammad", *Mamluk Studies Review* 11/1, 2007, p. 19-38.
- Singer, Amy, Palestinian Peasants and Ottoman Officials, Rural Administration around Sixteenth-Century Jerusalem. Cambridge University Press, Cambridge, 1994.

- Touchen, Ramzi and Malcolm K. Hughes, "Dendrochronology in Jordan", *Journal of Arid Environments* 42, 1999, p. 291-303.
- Walker, Bethany J., "Mamluk Investment in Southern *Bilad al-Sham* in the Fourteenth Century: The Case of Hisban", *JNES* 62/3, 2003, p. 241-261.
- —, "Mamluk Investment in the Transjordan" A 'Boom and Bust' Economy, *Mamluk Studies Review* 8/2, 2004, p. 119-147.
- —, "Sowing the seeds of rural decline? Agriculture as an economic barometer for late Mamluk Jordan", Mamluk Studies Review 11/1, 2007, p. 173-199.
- —, "The Role of Agriculture in Mamluk-Jordanian Power Relations", in *Le pouvoir a l'age des* sultanats dans le Bilad al-Sham, ed. Bethany J. Walker and Jean-François Salles, *BEO* 57, 2008, supplement, p. 77-96.
- —, "Identifying the Late Islamic period ceramically: Preliminary observations on Ottoman wares from central and northern Jordan", in Reflections of Empire: Archaeological and Ethnographic Studies on the Pottery of the Ottoman Levant, ed. Bethany J. Walker, American School of Oriental Research, Boston, 2009, p. 37-66.
- —,"The Tribal Dimension in Mamluk-Jordanian Relations", *Mamluk Studies Review* 13/1, 2009, p. 82-105.
- —, Jordan in the Late Middle Ages: Transformation of the Mamluk Frontier, Middle East Documentation Center, University of Chicago, Chicago, 2011.
- Walker, Bethany J. and Øystein S. LaBianca, "The Islamic *Qusur* of Tall Hisban: Preliminary Report on the 1998 and 2001 Seasons", *Annual of the Department of Antiquities of Jordan 47*, 2003, p. 443-471.
- —, "Tall Hisban, An Investigation in Medieval Rural History", Newsletter of the American Center for Oriental Research 16/2, 2004, p. 1-3.
- Warnock, Peter, "Paleoethnobotany", in *Near Eastern Archaeology, A Reader*, ed. Suzanne Richards, Eisenbrauns, Winona Lake, Indiana, 2003, p. 27-32.